Meeting Women’s Health Needs in the Community:
Assessment of the physical activity and health promotion
practices, preferences and priorities of older women living
with cardiovascular disease

by

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A thesis submitted in conformity with the requirements
for the degree of Doctor of Philosophy
Graduate Department of Exercise Science
University of Toronto

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2012

Abstract

Cardiovascular disease (CVD) is the leading cause of death among Canadian women, and accounts for up to 30% of deaths among women worldwide. Women with CVD are typically older than their male counterparts, experience worse functional status, are more likely to experience non-CVD health conditions such as diabetes or arthritis, and will live with these health conditions for more years than men. Physical activity (PA) and cardiac rehabilitation (CR) participation is lower among women compared to men, but little is known about the PA and health promotion experiences, priorities and practices of older women living with CVD. Guided by a socioenvironmental approach to health promotion, a mixed method design involving a mail survey (N=127) and qualitative interviews (N=15) was employed to describe and explore the PA and health promotion practices, preferences and priorities of older women (≥65 years) living with CVD in the Champlain health region of Ontario. Nearly 60% of survey respondents were referred to CR. Logistic regression analysis revealed urban residence as a predictor of CR referral (p<0.01, OR=3.24; 95% CI: 1.44-7.30). Nearly 55% of respondents attended CR, which was predicted by CR referral (p<0.01, OR=32.26; 95% CI: 9.26-111.11), availability of transportation (p<0.05, OR=9.96; 95% CI: 1.22-81.41), and a history of structured PA (p<0.05, OR=3.64; 95% CI: 1.16-11.36). Respondents were more active than their peers, but received
little support from their physician for PA. Older women’s incidental PA (walking six or more hours/week for transportation) was predicted by their sense of community belonging ($p<0.05$, OR=2.6; 95% CI: 1.05-6.29) and having energy for PA ($p<0.05$, OR=5.8; 95% CI: 1.21-27.92).

Interview participants (including four who had attended CR) described health as a resource that enables them to lead busy, active lives. Most participants attributed CVD to genetics or stress, but still engaged in health-promoting activities, including structured and incidental PA.

Participants engaged in ‘incidental’ activities such as walking, gardening, and housekeeping tasks purposefully, with the intention of maintaining or improving their health. This research can inform public health initiatives and health care services (including CR) to better meet the needs and preferences of the growing population of older women with CVD.
Acknowledgments

First and foremost, Drs. Scott Thomas and Karen Yoshida: thank you always for the tremendous and unwavering support that you have provided to me in order to complete my doctoral training and this research project. You were the “Dream Team” that I was looking for when I began my doctoral studies, and your high quality supervision continued throughout the entire six years that this journey has lasted. Your standards as supervisors and educators will guide my work for the rest of my life. I could not be more grateful for all your help. Thank you!!!

To my advisory committee members: Dr. Susan Jaglal: your support, critical analysis and guidance through my studies and in particular, my foray into the realm of survey research that has relevance to people’s lives, has made me a better researcher. I sincerely appreciate all of the time and incredible positive energy that you generously contributed to my doctoral studies, despite your very busy schedule. Thank you! Dr. Bob Reid: Thank you for the institutional support that you provided for this project, without which this research would not have been possible. It is my hope that this research will in some way contribute to the lives of all the women that Ottawa Heart Institute serves.

To the many women who generously offered their time and life experiences in order to better the lives of others: thank you! I also wish to gratefully acknowledge the generous financial support received for this research in the form of doctoral awards from the Canadian Institutes of Health Research, Institute of Gender and Health/Ontario Women’s Health Council, and from the Ontario Women’s Health Scholars Award program of the Ontario Council on Graduate Studies.

Tim, my husband and best friend: I know that you had no idea what you were entering into when you offered your emotional support to me at the outset of this journey! Your love and patience through this process are what allowed me to see it to its end. I hope that, as a family, we will enjoy the fruits of this labour for many more years than it has taken to achieve this goal. To my dear daughter, Mika (who spent less time growing inside of me than it took to receive ethics clearance for this research), it is my hope that you will one day achieve your goals with all the love and support that I have had for this achievement. I love you both.

Dad: Your permission to walk away from all of this without any judgment is what enabled me to follow it through. Thank you for everything. To my mother, who saw me to the doors of this work, but who was unable to meet me at the other side…perhaps one day. I love you.
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Chapter 1

Introduction

The prevalence of chronic health conditions such as cardiovascular disease (CVD) is on the rise in North America and most of the developed world. CVD in particular, is the leading cause of death among women in Canada, and accounts for up to 30% of all deaths among women worldwide (Gholizadeh & Davidson, 2008; Mosca et al., 2011; Statistics Canada, 2011). In 2008, 72% of Canadian adults over 65 years of age reported living with at least one chronic health condition (including CVD, high blood pressure, diabetes, arthritis, cancer, chronic obstructive pulmonary disease, or mood disorders) (Health Council of Canada, 2010). These individuals report poorer health status and greater disability compared to those not living with a chronic health condition. For example, 36% of individuals living with a single chronic health condition report moderate or severe disability, and among persons living with two or more conditions, this number increases to over 50% (Health Council of Canada, 2007b).

It must be noted though, that chronic illness, and specifically CVD, is experienced differently among women compared to men. In general, women are more likely than men to experience chronic illness: the female to male ratio of chronic illness is approximately 1.15 (Canadian Population Health Initiative & Health Canada, 2003). Women are more likely than men to experience multiple chronic health conditions (Bierman et al., 2009; Canadian Population Health Initiative & Health Canada, 2003). Given women’s longer life expectancy, they will typically live with a chronic health condition for more years than men (Canadian Population Health Initiative & Health Canada, 2003). With respect to CVD, women typically develop CVD ten years later in life than men, and are more likely to report comorbid health conditions such as diabetes or arthritis (Mosca et al., 2011; Worrall-Carter, Ski, Scruth, Campbell, & Page, 2011). Additionally, a gender difference exists in the experience of disability related to chronic illness and CVD in Canada. That is, severe disability is more common among women than men (Canadian Population Health Initiative & Health Canada, 2003), and women living with CVD typically report worse functional status than men (Bierman, Jaakkimainen et al., 2009). Given these gender-based differences in the experience of chronic illness and CVD (and the potential for gender-related health inequity), there is a need for research that explores the experiences of older women living with CVD to understand whether public health initiatives and primary health
care services are meeting the needs of women with CVD, and how such services can be best structured to do so.

**Significance**

The prevalence of CVD and other chronic illnesses among older adults in Canada, and recent estimates that the senior population in Canada will double in the next 25 years (representing about 10.4 million seniors) (Human Resources and Skills Development Canada, 2012) have significant implications not only for seniors living with or at risk of developing these health conditions, but also for the Canadian health system that must bear the cost of providing health care to manage and treat individuals living with these conditions and their sequelae (Birnbaum, Leong, & Kabra, 2003; Broemeling, Watson, & Prebtani, 2008). Given the substantial health system costs, emphasis is being placed on developing effective public health strategies that focus on chronic disease prevention, and relocating previously provincially managed chronic disease services to regional health networks that operate within geographic communities (within the province of Ontario, these are known as Local Health Integration Networks, or LHINs) (Morgan, Zamora, & Hindmarsh, 2007). Additionally, the Ontario government has invested $1.1 billion over the past four years to implement an ‘Aging at Home Strategy,’ to ensure that seniors can receive timely and appropriate access to health care within their communities rather than through hospital visits (Ontario Ministry of Health and Long-Term Care, 2012). Another cost-saving strategy for which many Canadian health care policy makers and providers are advocates, is the implementation of chronic disease management (CDM) programs that encourage active self-management by patients living with chronic health conditions such as CVD and diabetes (Health Council of Canada, 2010; Lorig & Holman, 2003; Morgan et al., 2007). CDM programs encourage patients to adopt healthy lifestyle behaviours that are likely to maintain or improve their health.

Physical activity (PA) is one healthy lifestyle behaviour that has been demonstrated to be an effective method of preventing and/or managing the effects of a number of chronic health conditions among women (Reid, Dyck, McKay, & Frisby, 2000), including CVD (Li & Siegrist, 2012; Mosca et al., 2011). It has also been estimated that 22% of CVD deaths are caused by physical inactivity alone (Gholizadeh & Davidson, 2008). Despite this information, 85% of Canadian adults with chronic health conditions are not encouraged by their primary care physician to attend programs in their communities, such as exercise classes, that could improve their health (Health Council of Canada, 2007c). This is unfortunate given the fact that 97% of
adults with chronic health conditions feel responsible for managing their own health, and 88% believe that they would be able to maintain lifestyle changes for their health if implemented (Health Council of Canada, 2007a). Thus, there is a need to facilitate connections between the health care system and community-based health promotion initiatives such as PA programs since individuals are not receiving such care in existing health care settings.

While health care policy makers and providers advocate for the development of CDM programs, whether these programs can adequately address the needs and concerns of older Canadian women living with chronic health conditions remains unclear. Authors of a review of Cochrane systematic reviews of interventions designed to improve patients’ knowledge and skills to manage chronic disease concluded that there is inadequate evidence regarding the effectiveness of CDM interventions (Coster & Norman, 2009). Even if CDM programs are effective, ensuring patients’ access to such programs remains a concern. For example, cardiac rehabilitation (CR) is a CDM program that has been shown to be highly clinically effective in terms of reducing participants’ cardiovascular risk factors, subsequent hospital admissions, total and cardiovascular mortality (Heran et al., 2011; Jolliffe et al., 2001). Typically, however, only 15-30% of all eligible patients participate in CR (Ades, Waldmann, Polk, & Coflesky, 1992; Evenson, Rosamond, & Luepker, 1998), and CR participation varies by gender, ethnicity, disease severity and socioeconomic status. A number of studies have shown that only 10-20% of eligible women participate in CR, and these women tend to be well-educated, young (<65 years), Caucasian, and typically live with less severe disease and fewer comorbid health conditions (Benz Scott, Ben-Or, & Allen, 2002; Blackburn et al., 2000; Daly et al., 2002; Jackson, Leclerc, Erskine, & Linden, 2005; Limacher, 1998). Thus, the current structure of CDM programs, as CR or other hospital-based, single disease-focused programs, may not reflect the ways in which many older women living with chronic health conditions conceptualize their health, health conditions, PA and health promotion practices, priorities and preferences.

While studies that predict program participation and identify disparities in access to CDM programs such as CR are necessary, their findings alone are often unable to generate useful information about how to restructure programs to better meet the needs of older women living with chronic health conditions and who do not attend traditional (hospital-based) CDM programs. Authors of such studies are also unable to describe the extent to which existing disease-specific self-management programs like CR meet (or fail to meet) the diverse needs of
women, reflect women’s expressed preferences for program content and format, and consider women’s priorities related to their health or health conditions. Given that current CDM programs are typically developed from the perspective of health care providers’ who favour a medical/behavioural approach over a health promotion approach in the management of chronic health conditions (Stuifbergen, 2006), and involve little consultation with patients regarding their needs and preferences for programs, it is perhaps not surprising that the majority of older women living with chronic health conditions do not attend existing CDM programs such as CR.

Fortunately, much can be learned from the work of a few health researchers who have conducted qualitative studies about how older women conceptualize and experience their lives while living with chronic health conditions (Husser & Roberto, 2009; Roberto, Gigliotti, & Husser, 2005). Based on qualitative interviews conducted with women, these researchers suggest that CDM programs may lack relevance for women as they prescribe activities and behaviours that are not conducive to older women’s lives, and that often compete with other priorities such as work, care-giving, and/or involvement with volunteer or social activities (Anderson, Dyck, & Lynam, 1997; Masse et al., 1998; Roberto et al., 2005). It has also been argued that the single-disease approach, and assumption of CDM programs that the management of a chronic disease is a focal point of older women’s daily life and activities, fails to acknowledge the holistic way in which older women conceptualize their health. That is, researchers have described older women’s conceptions of health being comprised of physical, mental and emotional components that are simultaneously affected by living with multiple health conditions, managing chronic pain, and engaging in social interactions with family as well as in the community (Husser & Roberto, 2009; O'Neill & Morrow, 2001; Roberto et al., 2005; Roberto & Reynolds, 2002; Weir, Meisner, & Baker, 2010).

Programs that acknowledge and address women’s psychosocial needs may be more likely to be adopted by this population, and programs designed to improve the health of women living with chronic health conditions may be more suitable for women if a health promotion approach is adopted, as opposed to a more narrowly defined biomedical model approach (Hughes, 2006). As the authors of one study have suggested, “special strategies [for exercise among older women with CVD] might be warranted for engaging older women in programs that are appealing, compatible with their lives, and tailored to their level of functioning,” (Sharpe, Clark, & Janz, 1991, p.40). In this way, the social and environmental contexts in which women live are
considered fundamental to both the creation of their current health status and their opportunities or capacity to increase or improve their wellbeing (Downie, Tannahill, & Tannahill, 1996; Labonte, 1992). Support for this approach is also evident in the literature, as the authors of a Canadian study have demonstrated using population data, that women’s health is determined to a greater extent by social structural (e.g., income, education, living alone, social support) and psychosocial forces (e.g., childhood/life events, chronic stressors and psychological resources), than by behavioural forces (e.g., smoking, alcohol consumption, physical activity) which are more likely to affect the health of men (Denton, Prus, & Walters, 2004). Efforts to improve women’s health should therefore incorporate initiatives designed to address the situations and contexts that women express as having the most significant impact on their health and wellbeing (e.g., neighbourhood safety, assistance with caregiving, etc.).

Research is thus needed to identify women’s needs, preferences, supports and desirable contexts for PA participation, in order to shape the development of PA initiatives that more accurately reflect women’s priorities and experiences of living with chronic health conditions. As such, the research question guiding this study is, “What are the PA and health promotion practices, preferences and priorities, supports and desirable contexts of women living with CVD?” As only with greater knowledge and understanding of older women’s needs, can PA and other health promotion initiatives be appropriately structured and delivered within their communities.

**Theoretical Orientation**

**Background**

A socioenvironmental approach to health promotion (Labonte, 1992; Laverack, 2004) was used to identify and conceptualize the salient issues for this investigation. This section will describe this theory, however, it is useful to first identify how the socioenvironmental approach to health promotion differs from two other common approaches used in health promotion research and programming, namely the biomedical and behavioural/lifestyle approaches.

Current CDM programs typically involve biomedical and behavioural/lifestyle approaches. The biomedical approach to health promotion is currently the dominant approach to health and it is this approach in which the health care system is heavily entrenched. Laverack (2004) describes the biomedical approach as being used to eliminate or treat disease and illness through the use of scientific and technological innovation. Health promotion within the biomedical model aims to
prevent disease and chronic illness by identifying individuals at ‘high-risk’ of developing disease based on genetic predisposition, personal or family history, and lifestyle behaviours. Using a top-down approach that values ‘expert’ knowledge of disease, the biomedical approach favours (medical) professional opinion to develop and deliver information and programs that attempt to address individuals’ personal risk factors for a particular disease. At a population level, the biomedical approach to health promotion is concerned with broadly reducing morbidity and mortality associated with specific health conditions. While this approach has some utility at a population level in terms of reducing health care costs, it fails to acknowledge (i) the impact of illness on individuals and their families, and (ii) the expertise among individuals with chronic health conditions acquired through their lived experience. This approach also seldom focuses on how health and wellbeing can be promoted among individuals who live with a chronic illness (Stuifbergen, 2006).

Behavioural or lifestyle approaches to health promotion often work within this biomedical framework. These approaches also value expert knowledge, but do so in order to develop health education information and programs aimed at individuals in society. Physicians and other health professionals attempt to educate individuals about how their behaviour or lifestyle choices (typically related to nutrition, smoking and PA) affect their risk for disease. The underlying assumption of these approaches is that individuals, once educated about healthy lifestyle choices and their relative risk of developing a disease, will make rational decisions to avoid high-risk behaviours (e.g., physical inactivity or smoking) and instead, adopt healthy behaviours (such as exercising or quitting smoking) in order to reduce their disease risk. Grounded in health psychology, behavioural or lifestyle approaches to health promotion rely on a number of different interpersonal theories and models related to health beliefs and behaviour change that all have in common an approach that targets individuals rather than addressing the collective dimension of health within societies and communities (Downie et al., 1996). For example, the Transtheoretical Model (TTM) of Behaviour Change is often used in conjunction with health education to assess and increase individuals’ readiness to change and capacity to adopt health-promoting behaviours (Prochaska & Velicer, 1997). The major weaknesses of this approach, however, are that it fails to recognize the broader contextual and structural issues that may affect individuals’ decision-making and ability to adopt such health-promoting behaviours (Betancourt & Quinlan, 2007), and that its primary focus is on personal motivation for such behaviour. For example, if an individual is ready to make a healthy lifestyle change and include regular PA into
their daily life, TTM does little to address how other responsibilities or constraints (for example, related to care giving or paid work) may impede this intended behaviour change, and instead focuses on issues related to self-efficacy, or one’s level of motivation to adopt a new behaviour. As such, the results of research employing the TTM provides little direction to help address contextual issues such as, ‘does the individual have access to transportation to get to a community recreation centre?’ or, ‘do they feel safe exercising in their community if they live with a chronic health condition?’ As Freudenberg (2007) describes, “this approach is inefficient, requiring health promoters, like Sisyphus, to push every person engaged in unhealthy behavior up the steep hill of disease-promoting environments toward health at the top, rather than leveling the incline by changing policy,” (p.1). Not surprisingly, health education campaigns alone are not typically successful in changing individual behaviour, particularly in the long term (Laverack, 2004).

Given the limitations of the biomedical and behavioural/lifestyle approaches to health promotion, the socioenvironmental approach is more comprehensive, because it takes into account individuals’ social locations and contexts (i.e., considering the combined influence of gender, age, disability, sexuality, race, ethnicity, culture, socioeconomic status, education, employment, etc.). The socioenvironmental approach also allows individuals, groups and communities to frame what health issues are relevant to them, and to articulate their own health promotion needs. Since proponents of this approach often work within a critical social theory framework, and are thus concerned with achieving social justice, the targets of their campaigns are typically marginalized groups in society who face the greatest barriers to health care or health promotion programs and services. The focus of their efforts are not limited to health or particular behaviours/lifestyle choices, but also address broader structural issues and social determinants of health (such as poverty, food and housing insecurity) that often create health inequities (Laverack, 2004).

Despite these apparent distinctions, it should be noted that intersections and connections exist between the biomedical, behaviour/lifestyle, and socioenvironmental approaches to health promotion. The biomedical approach is most reductive and narrowly defined. The behavioural approach, while adopting many aspects of the biomedical approach, acknowledges the influence of individual contextual factors that may affect individuals’ lifestyle choices. In this way the scope of the behavioural/lifestyle approach is broader than, and has the capacity to encompass
the biomedical approach. The socioenvironmental approach is the most encompassing approach of the three. That is, it is able to accommodate aspects of both the biomedical and the behavioural/lifestyle approaches in addition to recognizing the influence of broader structural issues that affect individuals as well as defined groups or populations. In this way, the socioenvironmental approach “is more inductive than reductive, and seeks the largest horizon of explanatory relationships” (Labonte, 1992, p.120).

Since the biomedical approach values expert opinion, takes a top-down approach to health promotion, does not seek experiential knowledge, and is more concerned with reducing population morbidity and mortality than promoting individuals’ and communities’ health and wellbeing, it is inappropriate to address the proposed research question. Similarly, as the behavioural/lifestyle approach typically aims to change individual behaviour without recognizing social and environmental contextual factors, and does not usually generate effective health promotion interventions, it also does not contribute to the theoretical orientation of this research. Thus, to explore what the PA and health promotion needs are among older women living with CVD, a socioenvironmental approach to health promotion was adopted in order to acknowledge women’s diverse social identities and contexts, and to recognize the impact of these factors on their PA and health promotion practices, preferences and priorities. The following section provides an overview of this approach.

Socioenvironmental Approach to Health Promotion

The comprehensiveness of the socioenvironmental approach to health promotion is what is favoured in the theoretical orientation of this study, because it is an approach that is most able to transcend the theoretical boundaries of the biomedical and behavioural/lifestyle approaches, and consider as well how broader contextual factors such as gender or poverty may influence individuals’ ability to engage in health-promoting activities. As Laverack (2004) describes:

“[The three approaches to health promotion] are more like a Russian doll, one inside the other, than wholly separate ways of thinking. The medical approach, the most precise in definition, occupies the smallest doll. The behavioural approach incorporates the medical approach within a slightly larger doll that includes ‘space’ for individual behaviours and the social norms that shape them. The socioenvironmental approach incorporates both the behavioural and the medical in the largest doll, whose new ‘space’ is cluttered with all of the social, economic and political structures that shape not only individual lifestyles but also people’s risks of disease or opportunities for wellbeing” (p.23).

The ability of the socioenvironmental approach to incorporate conceptual elements of the biomedical and behavioural/lifestyle approaches is depicted in Figure 1, which broadly
summarizes the research supporting the socioenvironmental approach to health promotion, using heart health as an example. In the figure, the biomedical approach to heart health is described by the category of ‘physiological risk factors,’ the behavioural/lifestyle approach is described by ‘behavioural’ and ‘psychosocial risk factors,’ and the socioenvironmental approach considers all of these ‘risk factors’ as well as the broad ‘risk conditions’ such as poverty, low education, and discrimination, that affect CVD and all-cause morbidity and mortality.

With respect to this research study, the socioenvironmental approach is most appropriate to explore the experiences and perspectives of older women with CVD living independently within the community. As Labonte (1992) points out, given the strength of socioeconomic status (SES) as a determinant of health, the typical disease-specific or risk factor approach is inadequate to explain and address health inequities: “Over time, and across nations, the poor appear to be more vulnerable to most disease, regardless of their specific causes or risk factors” (p.120). Working from this assumption, Labonte (and the Heart Health Inequalities Working Group) (1992) describes three possible approaches to heart health enhancement, including a ‘medical or high-risk approach,’ ‘behavioural or multiple risk factor reduction approach,’ or a ‘socioenvironmental or community development approach’ (see Table 1). Within the socioenvironmental or community development approach (the approach adopted within this study), health is described as a positive state, includes the concept of ‘social wellness’ that involves the state of being connected to one’s family, friends, and community, and involves individuals having a level of control over their health. Principal strategies used to enhance heart health, according to this approach, include developing personal empowerment, community organization and health advocacy in order to address high-risk environments. The program development goals of the socioenvironmental approach to heart health enhancement includes enabling communities to define their health issues, as well as strategizing about effective solutions, which may necessarily involve shifts in social equity, power and resources, improved social networks and increased social support through community action.

For the purpose of this study and consistent with Labonte’s description of a socioenvironmental and community development approach to heart health enhancement, the broad social aim of this research is to inform programs that (a) empower women by seeking and valuing their input in the development of community PA and health promotion programs, (b) increase women’s control over their health and health conditions by developing programs that increase their sense of health
and independence, and (c) increase women’s overall wellbeing by increasing their access to and participation in relevant PA and health promotion programs within their communities. By increasing women’s sense of personal empowerment, it is believed that they are better positioned to organize within their communities, define their PA and health promotion needs, and advocate for the development of relevant PA and health promotion programs. From a program development standpoint, the socioenvironmental approach can be used to encourage such community program development based on women’s articulated needs, and to create equitable access to relevant community programs that promote health and wellbeing.

**Positionality**

In addition to the theoretical orientation just described, the interpretive paradigm that influenced this study’s conception and design included (i) my relativist ontological position (which is grounded in critical and feminist theory) that “truths” and individuals’ realities are shaped by their social, political, cultural, economic, ethnic and gender values (Denzin & Lincoln, 2005), and (ii) a subjectivist and feminist standpoint epistemologies that suggests that knowledge about women’s needs related to health promotion is best acquired through direct input from women themselves (Campbell & Wasco, 2000; Thompson, 2001). In brief, feminist standpoint epistemology has emerged from critical social theory, radical and social feminism, and asserts that there is no single, objective ‘truth’ or reality (see Figure 2 for a visual representation of how feminism and philosophies of science influence feminist approaches to social science research). Rather, reality is structured by historical, political, social, cultural, and economic contexts, and by women’s individual identities (Gorelick, 1996). This epistemology argues that women’s standpoint offers unique insight into women’s social reality (Campbell & Wasco, 2000).

Feminist standpoint epistemology was incorporated by the criticism of current practices in CDM programs, and goal of generating knowledge grounded in women’s experiences living with chronic illness (i.e., lived experience). That is, my research aims to challenge the assumption that women not attending traditional hospital-based CDM programs (such as CR) are not seeking other opportunities to participate in PA and health promotion behaviours following a cardiac event. This study also acknowledges women’s capacity to effect broader structural changes by articulating their preferences regarding PA and health promotion information and programs.

In addition to this paradigmatic positionality, it is also important for me to outline how my implicit assumptions about the PA and health promotion needs of older women living with
chronic health conditions have affected the design, conduct and interpretation of this study. Resulting from my professional training in kinesiology and clinical experience in CR, I work within the framework that PA has positive health benefits for women living with chronic health conditions. There is also a large body of documented evidence of the positive effects of PA for women’s health upon which this framework is based. Given my research training in women, disability and physical activity at a graduate level (Master’s degree), my primary concern regarding women and physical activity is ensuring that women who live with chronic health conditions and/or disabilities have equitable access to facilities and programs that offer opportunities for PA participation.

I do, however, recognize a number of limitations of my kinesiology training, clinical experience and much of the academic literature in these fields. Implicit in these fields is the emphasis of the role of PA in promoting women’s physical health and reducing individual disease risk factors (Reid et al., 2000), without recognition of the more holistic ways in which many women conceptualize their health and wellbeing (including psychosocial, and spiritual components as well). There is also a plethora of literature that details the physical health and clinical benefits of PA interventions in individuals living with chronic health conditions. I acknowledge that, while these interventions may take place in hospital or community-based settings, most studies only identify quantitative or clinical outcomes related to time spent engaged in PA, or changes in body weight, blood pressure, and cholesterol for example (Karmisholt & Gotzsche, 2005; Smidt et al., 2005). Even when community-based participatory approaches are used, these objective, quantitative measures remain the key foci and outcomes of the study (Pazoki, Nabipour, Seyednezami, & Imami, 2007), rather than on the potential of PA to improve the quality of women’s lives. When broader socioenvironmental factors are considered in analyses of health promoting practices such as PA, comparisons by gender are rarely available (Wendel-Vos, Droomers, Kremers, Brug, & van Lenthe, 2007). Despite the fact that some of my training and most of the available literature is heavily entrenched in the dominant biomedical model, I feel that there is a need for research that documents the benefits of PA and other health promotion programs in terms of providing women with health-enhancing experiences such as increased community engagement, psychosocial support, and/or personal and community empowerment.

I also take issue with the notion of personal (rather than social) responsibility for health, or what has been clarified as ‘causal responsibility,’ meaning that one’s health status is determined by
their personal behavioural choices, most often related to diet and PA, among other health-promoting behaviours (Minkler, 1999). This notion has been espoused in Canada since 1974 with the release of the Lalonde Report (Lalonde, 1974) that highlighted a link between individual lifestyle behaviours and health outcomes. My concern is that, not only does this approach place undue responsibility upon individuals to become experts in the maintenance of their own health, but it also assumes that all individuals are equally capable (socially, economically and physically) of engaging in health promoting behaviours such as PA; an argument which is highly contended in the literature (Lynch et al., 2004; Minkler, 1999). Personal responsibility for health, which is at the centre of most public PA promotion campaigns, also fails to acknowledge that not all individuals are personally inclined to participate in structured PA activities, and may prefer incidental PA (such as walking for transportation), or merely sedentary activities. As such, my concern is less so with convincing all individuals of the need for PA, but rather, to ensure that the individuals who want to engage in either incidental or recreational PA have equitable access to participation, and that structures are in place within society to support PA as a way of life (e.g., improving urban design to create environments that enable incidental PA, and providing accessible community-based programs and facilities for recreational PA). As described in the Theoretical Orientation section, I adopt a socioenvironmental rather than a biomedical approach to health for this project. As such, personal psychological factors involved in PA participation (e.g., motivation, readiness for change) are not the foci of this research.

**Study Rationale**

If traditional CR programs are taken as an example of a medical model CDM program, the available evidence suggests that, despite demonstrating clinical effectiveness in terms of improving women’s physical health, the current hospital-based CDM approach to program delivery fails to adequately meet the needs of community-dwelling older women living with CVD as evidenced by their low participation. This may be due to a number of factors, including but not limited to the following factors:

- Women’s sociodemographic profile (e.g., older age, lower income and education);
- Women’s unique psychosocial contexts (e.g., living alone, mental wellbeing);
- Women’s individual health issues (e.g., greater incidence of disability and chronic health conditions);
Community-based programs for PA and health promotion may be better suited to increase older women’s quality of life, sense of wellbeing and empowerment. In order to structure such programs, input from older women with CVD is required. The results of this study can provide insight into how best to structure and locate community PA and health promotion programs and services to meet the needs of this population.

**Study Purpose and Objectives**

The purpose of this study is to address the research question of, “What are the PA and health promotion practices, preferences, priorities, supports and desirable contexts of older women living with CVD?”

The specific objectives of this study are as follows:

1. To describe the PA participation (including PA history, current leisure time participation, incidental activity, types of PA, frequency of participation, location of participation, motivation to participate, and desired PA level) of older women living with CVD. The primary outcomes of interest include the proportion of older women with CVD reporting:
   (i) Participation in a CR program;
   (ii) Walking six or more hours per week for transportation;
   (iii) Standing, walking, lifting or carrying loads, and/or climbing stairs or hills often, as part of their usual daily activities;
   (iv) No leisure-time PA participation; and,
   (v) Walking for exercise.
2. To describe the influence of individual-, physician-, and environmental-level factors on older women’s CR participation. The secondary outcomes of interest are the relationships between older women’s CR participation and their:
   (i) Sociodemographic profile (age, education, marital status, income, location of residence);
   (ii) Physical, mental and social health status;
   (iii) Receipt of physician referral for CR;
   (iv) Preferences and reasons for participation in PA;
   (v) Experiences of personal, social, and environmental PA barriers and facilitators; and,
   (vi) Their current health promotion practices and priorities.

3. To describe the PA and health promotion practices and priorities of older women living with CVD.

4. To explore the priorities, preferences and experiences of older women living with CVD regarding PA and health promotion activities, including accessing PA, CR and other health promotion information and programs.

By seeking the participation of older women living with CVD to articulate their practices, priorities and preferences with respect to PA and health promotion, this study is intended to contribute to the dearth of research focusing on the needs of this population from a socioenvironmental and feminist perspective. It is hoped that this study will also contribute more broadly to the development of the necessary structures and supports to facilitate the development of community-based opportunities for health promotion and PA participation for the general population.
Chapter 2

A socioenvironmental approach and feminist perspective have shaped the structure and focus of the following review of the literature. The socioenvironmental approach to health (recall Figure 1) has been used to sequentially expand the breadth of this review from (i) a biomedical perspective (outlining the epidemiologic research on PA and women), to (ii) a behavioural risk management approach (using CR as an example), and finally a socioenvironmental approach encompassing (iii) an examination of the non-medical benefits of PA for older women, and (iv) community-based PA interventions for older women. A feminist critique (or ‘gender lens’) is used throughout to describe how much of this research has been influenced by gender discrimination. For example, the exclusion of women from PA and cardiac research studies, the limitations of current methods of assessing PA in terms of accurately capturing women’s PA experiences and practices, the development of PA programs based on the needs and preferences of men, and the implementation of public health strategies for PA participation that fail to recognize older women’s ways of engaging in (typically, non-leisure time) PA. This chapter will conclude with a brief rationale for the use of mixed methods in this study to describe and explain the PA and health promotion practices, preferences and priorities of older women living with CVD.

The Relationship Between PA and Mortality among Women

The following epidemiologic research has been included in this review, not only to describe the relationship between PA and women’s mortality, but more importantly, because of the recognized influence of such research on the development of public health policies that influence the types of programs and structures available to support older women’s PA participation.

The health benefit of PA has been demonstrated at the population level by many studies that report a significant inverse relationship between PA and morbidity and mortality (Antero Kesaniemi et al., 2001). At an individual level, PA is associated with increased fitness, physical health and function (Church, Earnest, Skinner, & Blair, 2007; Lee, Folsom, & Blair, 2003; R. S. Taylor et al., 2004; Warburton, Nicol, & Bredin, 2006), and a reduced relative risk of a number of chronic health conditions among women, including CVD, cancer, diabetes and stroke (Brown, Burton, & Rowan, 2007; Hu et al., 2000; Oguma & Shinoda-Tagawa, 2004; Rockhill et al., 1999). Most of the available literature on the relationship between PA and mortality focuses on
data from men, but the limited research that has been conducted with women suggests that the relationship between PA and mortality is similar between women and men, and between older and younger women (Oguma, Sesso, & Lee, 2002; Sesso, Paffenbarger, Ha, & Lee, 1999; Weller & Corey, 1998; Zoeller, 2008). A major limitation of the available evidence on PA and mortality among women, however, is the failure to include non-leisure PA (i.e., household tasks) in measurements of women’s total activity (Lawlor, Taylor, Bedford, & Ebrahim, 2002; Weller & Corey, 1998), which has been estimated to account for up to 82% of women’s energy expenditure (Weller & Corey, 1998).

The practice of excluding non-leisure PA from the assessment of women’s total activity is pervasive (Li & Siegrist, 2012; Oguma et al., 2002). A systematic review of 38 studies examining the association between PA or fitness and all-cause mortality in women found that only 13 studies (34% of those reviewed) assessed women’s total PA (i.e., included leisure, non-leisure, and occupational PA) (Oguma et al., 2002). The authors of the review calculated the median relative risk (comparing the most with the least active women) to estimate an average magnitude of effect of PA on mortality. Interestingly, their findings suggested that non-leisure PA conferred greater reductions in mortality compared to leisure time PA: the relative risk of mortality based on total PA was 0.75 (i.e., 25% reduction in mortality among the most active women), 0.66 for leisure time PA, and 0.54 for occupational or non-leisure PA. Although the authors concluded that similar associations between PA and mortality exist among men, reported data suggest that the health benefit of non-leisure PA is greater among women compared to men: corresponding estimates of relative risk among men were 0.66, 0.70, 0.65, for total, leisure, and occupational/non-leisure PA, respectively. Combined, their findings suggests that, for women, non-leisure PA may be more protective in terms of mortality than leisure-time PA, and that non-leisure PA may confer greater protection for women compared to men.

The type and intensity of PA required to reduce CVD risk among women has not been definitively established. Findings from a number of reviews show that, for middle-age and older women, walking is most likely to reduce CVD risk (Bassuk & Manson, 2010; Oguma & Shinoda-Tagawa, 2004), and that vigorous PA confers little additional benefit beyond moderate intensity PA in terms of CVD risk among women, but not men (Bassuk & Manson, 2010; Zoeller, 2008). For example, Sesso et al. (1999) explored the relationship between PA and CVD risk among middle age and older women by estimating energy expenditure from stair climbing,
walking and sports participation. They observed an inverse dose-response relationship between PA and CVD risk for walking only, such that walking approximately 9.7km/week was associated with a 33% reduction in CVD risk (Sesso et al., 1999). Authors of a meta-analysis have also suggested that as little as one hour of walking per week is associated with significantly reduced CVD risk among women (Oguma & Shinoda-Tagawa, 2004). It is more likely, however, that walking is simply more accurately measured among women (for example, compared to intermittent household tasks) compared to men, who are more likely to engage in vigorous leisure time PA (Sesso et al., 1999; Zoeller, 2008).

Fewer researchers have demonstrated a relationship between PA and mortality among older adults generally (Batty, 2002; Nocon et al., 2008), and among older women specifically (Gregg et al., 2003; Kushi et al., 1997). Authors of one multi-site prospective cohort study involving 9,518 American white women aged 65 years or older at baseline, and followed-up for up to 12.5 years, reported significant reduction in all-cause and CVD mortality among active versus sedentary women, but suggested that this relationship was weaker among women aged 75 years or more, or those reporting poor health status (Gregg et al., 2003). In a more recent Australian prospective cohort study involving 7,080 women aged 70-75 years and 11,668 men aged 65-83 years at baseline, the authors observed an inverse dose-response relationship between PA and all-cause mortality, and noted that risk reductions associated with PA were 30-50% greater in women than in men at all levels of PA (Brown et al., 2012).

**Women and Cardiac Rehabilitation**

A solely biomedical examination of the role of PA in older women’s health as just presented suggests that if older women with CVD simply increase their PA participation, they will improve their physical health and function, and be better able to resume their daily lives. This logic is the rationale for most research examining women’s persistent underrepresentation in CR programs. It is important to recognize, however, that male clinicians and researchers initially developed CR programs for younger male cardiac patients, who were typically planning to return to work after rehabilitation (Kavanagh, Shephard, Doney, & Pandit, 1973; Kavanagh, 1989; Kavanagh et al., 2002). These early CR programs also used a biomedical approach to prescribe structured, repetitive PA (i.e., exercise) that predominantly mirrored the leisure-time PA pursuits of younger males (e.g., jogging, cycling, rowing). Without emphasizing the inherent limitations of simply restructuring current risk-management programs such as CR programs to try to meet the needs of
older women, the following section provides a brief review of the literature on women’s underrepresentation in CR, barriers to accessing CR, and research on ways of either addressing these barriers (i.e., automatic referral systems), or remodelling existing program formats to encourage and support women’s participation (i.e., women-only settings).

A recent Cochrane review (Heran et al., 2011) has demonstrated that CR is highly clinically effective in terms of reducing total and CVD mortality and hospital readmissions, but researchers over the past 15 years have demonstrated that women are significantly underrepresented in existing CR programs: 10-20% of eligible women participate in CR, compared to 25-31% of eligible men¹ (Allen, Scott, Stewart, & Young, 2004; Benz Scott et al., 2002; Blackburn et al., 2000; Brown, Taylor, Noorani, Stone, & Skidmore, 2003; Halm, Penque, Doll, & Beahrs, 1999; Limacher, 1998). The underrepresentation of women in CR is most often attributed to a lack of physician referral of female patients to CR (Allen et al., 2004; Benz Scott et al., 2002; Bittner & Sanderson, 2003; Carhart & Ades, 1998; Daly et al., 2002; Grace et al., 2008; Halm et al., 1999; Heid & Schmelzer, 2004; Jackson et al., 2005; Limacher, 1998; Missik, 2001; Todaro, Shen, Niaura, Tilkemeier, & Roberts, 2004), but the cause of this gender bias at a physician level remains unclear (Benz Scott et al., 2002). Some researchers have suggested that physicians’ attitudes towards CR in general (Grace et al., 2008), and their perception of women’s ability to participate, may be contributing factors (Benz Scott & Allen, 2004). The few women who do attend CR tend to be well-educated, young, and Caucasian, and live with less severe CVD (Grace et al., 2008; Missik, 2001) and few comorbid health conditions (Allen et al., 2004; Benz Scott et al., 2002; Blackburn et al., 2000; Brown et al., 2003; Daly et al., 2002; Halm et al., 1999; Jackson et al., 2005; Limacher, 1998). Compared to their male counterparts, however, women entering CR tend to report a poorer health status (Allen & Szanton, 2005; Barron & Schnautz, 2008; Bittner & Sanderson, 2003; Carhart & Ades, 1998; Grace, Grewal, Arthur, Abramson, & Stewart, 2008; Todaro et al., 2004).

In addition to reporting poorer health status upon CR program entry, women’s psychosocial profile upon CR entry is different from their male counterparts, and this factor may play a role in determining their CR participation. More women than men with CVD experience depressive

¹ Of course, much work needs to be done to increase CR uptake by both men and women, however, the fact that the proportion of eligible women accessing CR is half that reported for eligible men suggests that, although CR is underutilized by eligible patients as a whole, attention to this gender disparity in CR uptake is warranted.
symptoms, anxiety, and a decreased quality of life (Brezinka & Kittel, 1996; Brezinka, Dusseldorp, & Maes, 1998; Carhart & Ades, 1998; Daly et al., 2002; Halm et al., 1999; Jackson et al., 2005; Limacher, 1998; Todaro et al., 2004), and these factors have been shown to predict lower rates of CR enrollment (Grace et al., 2008; Parkosewich, 2008). Women are also more likely to live alone, be unemployed or retired, and experience scheduling-related barriers as a result of their roles as primary caregivers to dependent spouses, parents, children, and/or grandchildren (Emslie, 2005; Heid & Schmelzer, 2004; Jackson et al., 2005). A few researchers have suggested that physicians’ awareness of these issues may influence their decision about whether to refer women to CR given their many demands and responsibilities, and possible barriers to CR attendance (Benz Scott & Allen, 2004; Grace et al., 2008). Additional personal and social factors contributing to women’s under-representation in CR include perceiving exercise as tiring or painful, safety concerns (e.g., when walking in inclement weather or at night), and a lack of social support networks and transportation (Clark, Barbour, White, & MacIntyre, 2004; Dawson, Hillsdon, Boller, & Foster, 2007; Grace et al., 2009; Halm et al., 1999; Jackson et al., 2005; Limacher, 1998; Missik, 2001).

Automatic referral to CR has been recommended as one strategy to address women’s access to and underrepresentation in existing CR programs (Grace et al., 2007; Grace et al., 2011; Grace et al., 2012). Researchers examining CR uptake following automatic referral, however, have shown that almost 50% of participants choose not to enroll in CR, regardless of disease severity, sex and age (Grace et al., 2007). Qualitative studies of women’s experiences in CR (Moore, 1996; Rolfe, Sutton, Landry, Sternberg, & Price, 2010), and research on patient preferences in CR (Bjarnason-Wehrens, Grande, Loewel, Voller, & Mittag, 2007; Filip, McGillen, & Mosca, 1999; Kjaer, Gyrd-Hansen, & Willaing, 2006; Moore & Kramer, 1996; Ruland & Moore, 2001) have also resulted in the recommendation to develop innovative CR programs that are structured to increase women’s enrollment in CR (Bjarnason-Wehrens et al., 2007; Davidson et al., 2003; Halm et al., 1999; Parkosewich, 2008). Women-only programs, for example, offer a ‘female-friendly’ environment in which participants can connect with their peers and exercise in a supportive environment (Davidson et al., 2008; Leung, Brual, Macpherson, & Grace, 2010; Price et al., 2005). Home-based CR and PA programs also hold the promise of being as effective as centre-based programs for older adults living with CVD (Ashworth, Chad, Harrison, Reeder, & Marshall, 2005), and are more likely to address older women’s barriers to CR particularly related to transportation and scheduling challenges. However, gender-based analyses of such programs
are necessary to assess whether this alternate mode of delivering CR actually increases women’s CR participation. Although promising (in terms of high rates of adherence among women in women-only programs) (Price et al., 2005), these modified programs do little to challenge or reconstruct the power dynamic between health care professionals and patients, the types of exercise prescribed, or the ways in which CVD etiology or PA is presented or described.

Despite the important work of these researchers, few changes in rates of women’s participation in CR have been reported over the course of a decade (Audelin, Savage, & Ades, 2008). This limitation may result from the liberal feminist approach (ensuring women’s equal access to CR) taken to date, in order to address the issue of women’s underrepresentation in CR (Campbell & Wasco, 2000). That is, with the exception of a limited number of exploratory and/or qualitative studies (Angus, 2001; Hagberth, Sjöberg, & Ivarsson, 2008; Husser & Roberto, 2009; Kristofferzon, Löfmark, & Carlsson, 2003), the extant research stops short of exploring how women’s social roles and life experiences may contribute both to the development of CVD, and the ways in which they choose to live with CVD as a health condition (i.e., whether they choose to actively ‘manage’ the condition as such, or simply modify their existing routines to accommodate living with certain functional limitations). Representing a radical feminist approach, which takes issue with (and attempts to redress) structures in society that either constrain, or at the very least do not facilitate, older women’s PA participation (Campbell & Wasco, 2000), the following sections will examine the many non-medical health benefits of PA for older women and women living with chronic health conditions, and review the literature on possible alternatives to hospital-based programs such as CR, including community-based PA interventions that have been developed to meet the needs, expressed preferences and priorities of older women.

**Non-Medical Benefits of PA for Older Women**

The literature on the health benefits of PA for women living with chronic health conditions (such as CVD) tends to be dominated by biomedical descriptions of improvements in physical health and functional status (e.g., body composition, blood pressure, pain frequency, etc.) (Laukkonen, Kauppinen, & Heikkinen, 1998; Sawatzky & Naimark, 2002). Whether changes in these physical health measures or PA participation actually contribute to older women’s sense of wellbeing and overall health is seldom addressed in the literature. Population-level data suggests that a relationship between PA and physical function exists in older adults, but the relationship as
experienced at an individual level is more difficult to assess. There is evidence demonstrating that PA participation significantly contributes to older adults’ overall wellbeing (Miller & Iris, 2002; Spirduso & Cronin, 2001; Stathi & Simey, 2007), vitality (Bopp et al., 2007), and sense of personal empowerment (Kluge, 2002; Poole, 2001). Long-term PA is related to independent living in older adults and postponed disability, and among individuals living with chronic disease, participation in PA enhances physical function (Laukkonen et al., 1998; Spirduso & Cronin, 2001). Evidence of a dose-response relationship between exercise intensity and changes in older adults’ sense of wellbeing, however, is elusive (Spirduso & Cronin, 2001).

There is a need for research that can contribute to our understanding of the benefits of PA from the perspective of older women themselves, and a few researchers have begun to explore this issue. Authors of one study have demonstrated that, regardless of actual physical strength, functional status and comorbidity, older women who were more physically active experienced a higher level of self-rated health (Gregg, Kriska, Fox, & Cauley, 1996). Interestingly, the authors of a study involving older women who engaged in PA to achieve measurable changes in physical health exclusively (such as weight loss, for example) reported that these women were actually less successful at sustaining physically active lives compared to older women who sought a general sense of wellbeing and stress reduction through PA (Segar, Eccles, & Richardson, 2008). Similarly, when Stathi and Simey (2007) examined the exercise experiences of mainly female nursing home residents in the UK aged 86-99 years who participated in a 6-month exercise intervention, they found that participants noted improved mobility in addition to feelings of achievement and success. These participants valued the program as an opportunity to do something for themselves, to meet other people, to add something to their weekly routine, and to be more active generally. As Arcury et al. (2001) describe, many older adults conceptualize their participation in exercise as a way of staying limber, rather than as a way of building strength or aerobic capacity. For many older adults, participation in group PA programs also addresses feelings of loneliness (Miller & Iris, 2002), particularly through the much cited and highly valued social support and interaction experienced by participants in group and community-based settings (Hardcastle & Taylor, 2001; Poole, 2001; Stathi & Simey, 2007).

Emphasizing these non-medical benefits for older adults is important, particularly given older adults’ concepts of health that are not synonymous with the biomedical approach to health, despite similarities between some components. Arcury et al. (2001) describe that rural older
adults in North Carolina conceptualize health as being composed of a seamless integration of physical, mental, spiritual, and social aspects. Another study conducted by Miller and Iris (2002) found that older adults viewed being healthy as “an integration of psychological and physical dimensions (i.e., how one feels and what one is able to do),” (p.262). Thus, the biomedical approach, that views health as the absence of disease and implements a risk-management approach to achieve ‘health,’ may be at distinct odds with older women’s concept of health and the ways in which they approach PA (Kluge, 2002). Evidence of the incongruence between the biomedical approach to health and older women’s concept of health is provided by a study in which the reactions of women to a community intervention aimed at reducing CVD risk were examined (Westerstahl, Segesten, & Bjorkelund, 2002). Qualitative interviews with a subgroup of the 10,000 female participants in the intervention revealed that risk-factor-oriented health interventions that focus on disease actually created uncertainty among women about the relationship between the concepts of risk and disease. As a result, the authors of the study advocated for the adoption of an approach that more accurately reflects women’s own concepts of their health, and which aims to identify and develop women’s existing health resources.

Facilitators and Barriers to Older Women’s PA Participation

When PA programs designed to meet the needs of the general population are simply extended to include specific target groups such as older women, limited participation may result if their unique issues and concerns are not considered or addressed (e.g., balancing participation with care-giving responsibilities, and considering how women who live on low income and/or with multiple chronic health conditions will negotiate their participation) (Booth, Bauman, Owen, & Gore, 1997). The following section will review the literature related to barriers and facilitators to older women’s community-based PA participation. Given the extensive body of literature in this area, a few key decisions were made to limit the scope of my review. First, while studies exist that identify predictors or determinants of PA among women (citing non-modifiable factors affecting PA, such as race, past PA experience, or weather) (Eyler et al., 2002), a review of these non-modifiable barriers or facilitators was intentionally avoided since little can be done to effect changes in PA participation when the issue is examined in this way. Second, research that addresses issues related to apparently unrelated sectors (e.g., transportation or supportive social services) was prioritized in the review as programs can potentially be modified to encourage and support women’s participation if inter-sector collaboration occurs to address women’s needs and
concerns. Finally, study findings that result from direct contact from women about the barriers or facilitators that they perceive as affecting their PA participation were prioritized. As such, studies were excluded if they were designed to provide ‘objective environmental assessments,’ (e.g., where the number of community facilities for PA are quantified by researchers). The rationale for this decision was that, regardless of whether facilities exist, if women are unaware of these programs or facilities, or do not perceive them to be accessible or offering programs that meet their needs, then these programs/facilities require further adaptation or restructuring before they can be recommended as a solution to older women’s low rates of PA participation.

There is a growing body of literature that contributes to our understanding of older women’s barriers and facilitators to PA participation. This literature includes many studies that employ self-administered mail surveys (and quantitative analyses) describing women’s barriers to PA. Fortunately, an increasing number of researchers are also using qualitative interviews and focus groups to develop more in-depth understanding about how complex issues such as social support or fatigue actually affect older women’s PA participation. In keeping with the socioenvironmental approach used to examine this issue, it is interesting to note that most of these studies attempt to go beyond mere descriptors of psychological influences (such as motivation and self-efficacy for PA), and describe participants’ concerns related to PA participation. For example, while many women report a sense of ‘inertia’ or lack of motivation to start or to continue exercising (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002; Folta et al., 2008; Gonzales & Keller, 2004; Lees, Clark, Nigg, & Newman, 2005; Plonczynski, 2003), this issue appears confounded by their experience with health concerns or chronic health conditions. As such, poor health or chronic health conditions are commonly cited as a barrier to PA participation, and this barrier affects older women regardless of ethnicity or socioeconomic status (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002; Gonzales & Keller, 2004; Lees et al., 2005; Plonczynski, 2003). Thus, rather than framing this barrier as a ‘lack of motivation,’ the in-depth understanding of women’s concerns related to PA participation in the face of existing health conditions enables recommendations to be made to support their PA participation (i.e., by addressing women’s pain or symptoms related to particular health conditions that may impede their tolerance for PA). Similarly, a fear of falling, injury, or exacerbating a health condition such as heart disease, was reported by a number of older women (Eyler et al., 2002; Lees et al., 2005; Plonczynski, 2003). Programs developed for this population should therefore consider how participant safety can be ensured.
Other contextual issues that pose a barrier to women’s PA participation include time constraints (King, Rejeski, & Buchner, 1998; Lees et al., 2005; Plonczynski, 2003) that may be related to family responsibilities (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002; Gonzales & Keller, 2004). Cultural and social factors such as feeling self-conscious about exercising in public are additional barriers faced by some women (Eyler et al., 2002; Folta et al., 2008; King et al., 1998). Related to broader structural issues are older women’s lack of access to transportation (Eyler et al., 2002; Tannenbaum & Shatenstein, 2007) needed to travel to often distant PA facilities (King et al., 1998; Plonczynski, 2003), and the lack of affordable exercise programs and facilities within women’s communities (Bopp et al., 2007; Eyler et al., 2002; Jilcott et al., 2006; Plonczynski, 2003; Tannenbaum & Shatenstein, 2007). While many women would like to have more information on available programs and information related to PA (Bopp et al., 2007; Jilcott et al., 2006; Tannenbaum & Shatenstein, 2007), others are simply unable to find a companion with whom to exercise (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002).

In addition to these barriers, a number of potential supports exist that can facilitate women’s PA participation. Most often cited is the essential role of social support and interaction needed to encourage women to initiate and maintain a regular practice of PA (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002; Folta et al., 2008; Gonzales & Keller, 2004; Lees et al., 2005; Plonczynski, 2003; Tannenbaum & Shatenstein, 2007). While this is perhaps not entirely unique to older women and has been cited by many adults as a facilitator (Wendel-Vos et al., 2007), specifically physician endorsement for PA appears to significantly affect the participation of older women (Booth et al., 1997; Bopp et al., 2007; Eyler et al., 2002; Gonzales & Keller, 2004; Tannenbaum & Shatenstein, 2007). The need to experience fun and enjoyment while engaged in PA is another facilitator of PA that is more often reported by older women (Bopp et al., 2007; Folta et al., 2008; King et al., 1998; Plonczynski, 2003). Finally, access to opportunities for intergenerational PA or programs related to other aspects of older women’s lives such as church or faith-based practices have been requested by some groups of older women (Bopp et al., 2007).

**Community-Based PA Interventions for Older Women**

Despite an abundance of evidence on the benefits of PA for older women, the majority of Canadian women over the age of 65 remain physically inactive, and less than one-quarter meet recommended levels of PA required to achieve significant health benefit (Statistics Canada, 2005b). Moreover, greater levels of inactivity exist among older women on low income, ethnic
minorities, the very elderly, and women living with disabilities or chronic health conditions (King et al., 1998; Taylor, Baranowski, & Young, 1998; Yancey, Ory, & Davis, 2006). These statistics, combined with the effects of an aging population, a growing number of people living with chronic health conditions, and increasing ethno-racial diversity within Canada’s urban centres, demonstrate the need to develop accessible and relevant community-based PA programs and services for such a diverse population.

We have limited knowledge on how best to proceed with the development of relevant programs however, and this stems from at least four key issues. First, few community-level PA intervention studies have specifically focused on the population of older women and its subgroups (based on income or ethnicity, for example) (Yancey et al., 2006). Therefore, the evidence base for population approaches to PA within the field of public health is primarily based on affluent Caucasian participants (Yancey et al., 2006). In addition, inequities in recreation department budgets often exist that effectively restrict the access and participation of low income women to PA facilities and programs (Frisby & Hoeber, 2002; Sallis, Bauman, & Pratt, 1998). Thus, there is a need to expose inequities in access to public recreation opportunities in order to mobilize advocacy efforts within marginalized communities to challenge existing funding policies (Yancey et al., 2007).

The second issue related to our limited knowledge about how to structure programs for the population of older women with CVD is that most interventions adopt an individual-level approach to encourage PA participation, while failing to address the broader social and environmental factors affecting PA participation (King, Stokols, Talen, Brassington, & Killingsworth, 2002; Sallis et al., 1998). Authors of a systematic review of community interventions found that only one environmental/policy approach was recommended that called for enhanced access to places for PA, combined with informational outreach (Kahn et al., 2002). At least part of this over-emphasis of individual approaches to PA promotion may be attributable to our reliance on physicians to provide prescriptive exercise to their ‘patients.’ Researchers have shown, however, that physicians tend to take a medicalized risk-factor approach to PA promotion, and have antiquated assumptions about individuals’ motivation to engage in PA (Yancey et al., 2007). For example, despite the fact that over 90% of physicians encourage patients to be more physically active, 70% do not assist patients with developing a program, and less than 25% are aware of current exercise prescription guidelines (Williford, Barfield, Lazenby,
Moreover, physicians spend on average less than one minute discussing PA with older patients (Ory, Peck, Browning, & Forjuoh, 2007), and are more likely to have these discussions with older men than with older women (Balde, Figueras, Hawking, & Miller, 2003). The limitations, however, of using individual-level counseling to effect changes in PA at a population level are being made more apparent (Yancey et al., 2007). For example, King (1998) urges:

“The justifications for applying a community approach to PA intervention are many, including the established importance of regular PA for a range of important chronic disease and health areas; the substantial prevalence of physical inactivity across most industrialized nations and among a range of population subgroups, and the constraints of current individual- or small group-oriented intervention approaches (e.g., exercise classes) for being able to adequately reach and serve the large percentage of underactive persons in industrialized societies.” (p. S3)

King (1998) also clearly explains how, aligned with a socioenvironmental approach to health promotion, community approaches to PA promotion include components of individual counseling (typically used with individual-level behavioural approaches), in addition to analyses of environmental, institutional and societal levels of influence on PA. It has also been suggested that interventions and initiatives designed to reverse population-wide inactivity consider both micro- (personal) and macro- (environmental) level perspectives (King et al., 2002).

Recognizing that focusing on all members of a geographical community may not always be feasible, King (1998) suggests that programs can be designed to target specific subgroups for interventions such as people at risk for or living with various health conditions, the elderly, or particular ethnic groups. She argues that despite criticism that these marginalized groups may face more pressing issues related to health, housing or food security, that in fact their receptivity to PA promotion programs is high. For example, researchers involved with programs involving inner-city, low-income populations have found that “this segment of the community is quite interested in positive health promoting behaviours such as PA, over which they can actually exert some control and from which they can become empowered,” (p. S7). While interest among older adults is also high, the focus may need to be on developing opportunities for PA programs that are safe, convenient, enjoyable, and of a more moderate intensity than traditional programs (that focus on PA intensity and duration of participation) (King, 1998).

The third issue concerns the lack of community consultation with respect to developing and implementing PA promotion initiatives. For example, the content and delivery schedules of PA interventions and existing PA programs are typically designed with little consultation with
members of the target population and local community members. King (1998) describes that the biomedical approach is most often adopted such that health professionals develop and deliver programs that are set at a time and location convenient for the professional, with the expectation that participants in these programs will simply seek the services when and where they are offered. Traditional CR programs are an example of this type of programming, such that client needs are not met and low rates of program uptake are common among members of the target population (Benz Scott et al., 2002; Blackburn et al., 2000; Daly et al., 2002; Limacher, 1998).

Another aspect of the issue of lack of community consultation is the fact that very few intervention studies involving women have adapted interventions to address their expressed concerns related to PA participation, such as providing transportation, child care, or holding sessions that are flexible in their timing to accommodate women’s multiple caregiving and work roles (Krummel et al., 2001). For community-dwelling older adults, there is a need for more flexible and alternative PA program formats than the face-to-face recreation facility-based programs that currently exist. Programs that incorporate mail and telephone communication with participants for example, and involve PA that is performed outside of typical community recreation facilities in participants’ homes and other outdoor settings (e.g., local walking groups) may be preferred by older adults (King et al., 1995; King, 1998; Krummel et al., 2001). Since much information on how to initiate and maintain a PA program already exists (often in the form of printed materials), greater input from the community is needed to determine how best to adapt and deliver this information to the intended populations (King, 1998).

Collaboration between traditional PA program providers and other public/private sector organizations can also help to substantially influence PA behaviour among older adults (King et al., 1995). Such collaboration between these sectors is necessary given the impact of non-health sectors (such as transportation) on population PA participation. There may also be a need for professionals within the community to be employed in more than one sector. This may involve the allocation of PA professionals to community agencies and organizations to provide PA programs (where women may seek other programs and services), and at various levels of government to effect policy changes that provide the necessary supports to enable women’s PA participation (e.g., enacting policies to assist with the caregiving of a spouse or grandchildren to allow women the time to engage in PA). Training of existing community workers to implement PA programs and initiatives within their own organizations is also recommended. Only by
involving multiple sectors and community organizations will programs and strategies be effective, sustainable, and potentially more cost-effective, particularly within marginalized communities (Frisby & Hoeber, 2002; King, 1998).

To address this lack of community consultation, King advocates for approaches that seek community input and that utilize formative evaluation tools, such as community-based surveys, feasibility studies, and focus groups to develop appropriate programs, and to “optimize the type, format, location, promotion, and price of the program for the community segment being targeted” (p. S4). Krummel et al. (2001) suggest that further research is needed to determine women’s preferences for PA intervention formats, and what types of activities women can readily incorporate into their lives. It could be argued, however, that rather than conducting additional research on factors related to women’s motivational readiness for PA (Krummel et al., 2001), researchers should aim to understand how social and structural barriers can be addressed in order to increase older women’s PA participation.

The fourth issue limiting the participation of older women is that public policies are rarely implemented that aim to dramatically increase population or community PA participation. This is perhaps due to the relative infancy of PA promotion within health policy development in comparison to other areas such as nutrition or disease screening. Nonetheless, it would be prudent to increase efforts to utilize policy and environmental-level approaches to encourage PA since these are likely to have a greater impact given their influence on entire populations, their relative cost-effectiveness, and potential for sustainability (King et al., 1995).

PA Interventions for Older Adults living with Chronic Health Conditions

There is scant literature available on PA promotion interventions developed specifically for older women with CVD. This may be due to a lack of published research despite the existence of successful community-based initiatives developed without the involvement of researchers who are able to publish the results of these initiatives. Nonetheless, it is useful to review the available literature to identify at least some key issues and considerations that some researchers have presented.

In their review of PA interventions targeting older adults, King et al. (1998) sought research articles that involved community-dwelling older adults in community-based interventions (excluding studies on older adults participating in CR). In 19 of the 26 studies reviewed, the
authors reported exercise participation rates that ranged from 36-98% (with a median of approximately 80%). King et al. (1998) suggest, however, that this rate may be based on younger samples, as it is considerably higher than the cited finding that only about 50% of adults who begin an exercise program will maintain participation in the program beyond three months. Nonetheless, this finding gives some evidence that if programs are developed that are able to successfully engage older women, that their PA participation is likely to be increased and maintained even after completion of the formal intervention. The review by King et al. also reveals that programs implementing either a supervised home-based format, or a combination of group- and home-based formats resulted in comparable or better PA adherence than group-based formats alone. Based on their review of the literature, King et al. (1998) suggest that alternatives to traditional approaches (typically involving group-based programs or PA classes), such as telephone-based strategies either alone or in combination with group approaches, should be considered to engage older adults. The recommendation by King et al. (1998) to include strategies involving home-based programs to encourage greater adherence to PA has also been made by the authors of a more recent Cochrane review that found that among older adults, home-based programs have a significantly higher adherence rate than center-based programs (Ashworth et al., 2005). While their conclusion was based primarily on one high-quality rated study, these authors cited 68% adherence to PA in a home-based program at two-year follow-up compared with 36% adherence among participants in a center-based PA group. In either case, however, authors of another review have noted that there is limited evidence of the long-term effectiveness of either home- or group-based PA programs for older adults (van der Bij, Laurant & Wensing, 2002).

With the exclusion of cardiac populations engaging in PA in health care settings, a number of reviewers (Hudon, Fortin & Soubhi, 2008; King et al., 1998; Taylor et al., 1998), including the Cochrane review by Ashworth et al. (2005), have noted that there are few rigorous PA intervention studies that focus on older persons with chronic health conditions. For example, in their review of PA programs for older adults (aged 50 years or more) living with (or at risk of) CVD, chronic obstructive pulmonary disease or osteoarthritis, Ashworth et al. (2005) identified only six trials involving a total of 372 participants; five studies were of medium quality and one of poor quality. Among studies that involve these populations, outcome measures are variable, and typically involve exercise-training programs that are clinically oriented and focus on exercise capacities and adaptations. Most reviews and studies have examined specific disabilities
rather than applying a cross-disability approach targeted at individuals living within the community. Particularly among persons with multiple chronic health conditions, dropout and nonparticipation in PA interventions is also problematic (King et al., 1998).

Finally, in Yancey et al.’s (2006) limited discussion of dissemination of best practices for promoting PA in older adults and disabled populations, it is suggested that engagement across multiple social sectors and industries (including collaboration between nonprofit and for-profit corporations) may hold the most promise in terms of reducing barriers among seniors and people living with disabilities to engage in PA in the home, community, health care environment, and the workplace.

**Mixed Method Research**

As will be described in the following chapter, a mixed methods approach was used in this study to address the research question of, “What are the PA and health promotion practices, preferences, priorities, supports and desirable contexts of older women living with CVD?”

Provided here is a brief overview of the benefits of mixed methods research, particularly for a study such as this, which holds significant pragmatic potential in terms of developing programs and initiatives to increase the PA participation of older women living with CVD.

Mixed methods research has been defined in the literature as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study,” (Johnson & Onwuegbuzie, 2004, p.17). In the context of this study, a mixed method approach offers the potential to quantitatively describe women’s experiences related to (i) health and CVD, (ii) accessing information and programs related to PA, such as CR, and (iii) current and desired PA and other health promotion practices, preferences and priorities. Findings from such quantitative assessments can be contextually interpreted and generalized to the population of older women living with CVD, suggesting where improvements to existing programs and services can be made to either increase support for, or to decrease barriers to the PA and health promoting activities that older women with CVD prioritize. To further this quantitatively generated knowledge, the rich description of women’s experiences afforded by qualitative inquiry has the potential to provide a deeper understanding of the ways that older women with CVD conceptualize their health, CVD and PA participation. Grounded in women’s experiences, and seeing these issues from their perspective allows for an
inductive process of generating suggestions for the development of novel initiatives or programs that meet the needs of this population.

The study results presented in the chapters that follow will help to generate understanding of what health, CVD and PA mean to older women living with CVD, and the important ways that they engage in various health promoting activities, including PA. Rather than describing inherent deficiencies among women in terms of a lack of self-efficacy, or personal control regarding illness that simply describe differences between active and inactive women, this research is intended to initiate dialogue about the broader social-structural issues affecting older women’s PA participation. Relevant initiatives for this population can then be developed that encourage and support the PA and health promotion activities that older women prioritize and prefer. Such programs may explore ways of liberating more leisure time for older women to engage in PA, or may simply provide older women with detailed information about how they can minimize fatigue while completing household tasks, giving them more energy to engage in the practices that they feel help them to manage their stress, such as spending time with family, friends, and participating in their communities.
Chapter 3
Overview of the Study Design and Use of Mixed Methods

This cross-sectional study involved two phases (a mail survey and individual interviews) in order to generate knowledge about the PA and health promotion practices, preferences, priorities, supports and desirable contexts of older women living with CVD. The descriptive nature of the objectives of this study provided the rationale for implementing a cross-sectional design, as this design is well suited to describe how various predictors (e.g., age, health status and physician referral) are related to the outcomes of PA and CR participation among older women with CVD (Hulley, Cummings, Browner, Grady, & Newman, 2007). The development of two phases of this research study was based on recommendations within the needs assessment literature (Myers, 1999; Neuber, Atkins, Jacobson, & Reuterman, 1980; Posavac & Carey, 2007), and previous community-based research involving needs assessments and initiatives focused on PA program planning within defined communities (Frisby & Hoeber, 2002; Ndirangu et al., 2007). While a full community-based research approach was beyond the scope of this dissertation, a number of key components of community-based research were incorporated into the study design, including its focus on community-relevant issues, the valuing of community member input, and having potential impact at the community level (Green et al., 2003).

The ways in which the quantitative and qualitative components of the study were conducted, sequenced, and prioritized reflects the ‘partially mixed sequential equal status design’ of the mixed methods that were employed in this study (Leech & Onwuegbuzie, 2009). That is, the study involved two phases (mail survey and individual interviews) that occurred sequentially, with the quantitative and qualitative phases having equal weight. Quantitative and qualitative data sets were analyzed separately, and the mixing of these methods occurred at the data interpretation stage (Leech & Onwuegbuzie, 2009). The following description of the methods used in this study will outline the phases of participant recruitment, data collection, management and analysis separately, with the mail survey being described first, followed by details of the qualitative interviews. Similarly, in the results chapters (Chapters 4-7), quantitative and qualitative findings will be reported separately. Integration (or ‘mixing’) of the study findings will be completed in the final chapter (Chapter 8), where findings will be described relative to the extant literature, and discussed as a whole in terms of the theoretical and methodological contributions of the study findings and practical implications.
Study Eligibility Criteria

Older women who live independently in the community with CVD were recruited for participation in this study. As the goal of the research was to learn about the community-based PA practices of older women living with CVD, all participants were required to be at a low to moderate risk stratification for exercise participation according to the American Association of Cardiovascular and Pulmonary Rehabilitation (American College of Sports Medicine, 2006; Williams, 2001). Participants met clinical indications for outpatient CR (American College of Sports Medicine, 2006), and the following inclusion and exclusion criteria.

Inclusion Criteria

Eligible survey respondents and interview participants were:

- Female (based on patient record);
- Aged 65 years or older (based on patient record);
- Able to read and understand written English and/or French (based on self-report);
- A resident of Ontario in the Champlain Local Health Integration Network (LHIN) Region (includes: Lanark, Leeds/Grenville, Ottawa, Prescott, Renfrew and Stormont/Dundas) (based on patient record); and,
- A past patient of the University of Ottawa Heart Institute (UOHI) who received services for CVD in the past 3 years (June 1, 2007- June 30, 2010), as indicated by the following discharge International Statistical Classification of Diseases and Related Health Problems (ICD-10-CA) diagnoses and Canadian Classification of Health Interventions codes (based on patient record): myocardial infarction (I21); stable angina (I20.88); coronary artery bypass graft surgery (1.II.76); percutaneous transluminal coronary angioplasty (PTC) or other transcatheter procedure (1.II.50); pacemaker insertion (1.HZ.53^); ischaemic cardiomyopathy (I25.5).

Exclusion Criteria

Women were excluded from participating in the study if their patient record or self-report indicated that they are/had:

- A resident of Quebec or any Ontario LHIN other than Champlain Region (based on patient record);
- Deceased (based on patient record or report by a family member);
• Been advised by a physician to not engage in exercise or PA because of a health condition (self-report);
• Been transferred to acute inpatient care following discharge from UOHI (based on visual inspection of discharge disposition data in patient record); or,
• A past patient of UOHI who has received services for CVD in the past 3 years (June 1, 2007 - June 30, 2010) as indicated by the following discharge ICD-10-CA diagnoses and Canadian Classification of Health Interventions codes (based on the patient record): history of cardiac arrest or sudden death (I46); complicated/subsequent myocardial infarction (I22, I23); unstable angina (I20.0); postevent/postprocedure ischemia (I97.1); uncontrolled atrial or ventricular dysrhythmias (I48, I49); uncontrolled sinus tachycardia (I47); congestive heart failure due to hypertension/hypertensive heart disease (I50.0 with codes I11 or I13); cardiomyopathy (I42); 3-degree AV block (I44.2); active pericarditis (I30, I31, I32)); myocarditis (I40, I41); recent embolism (I74); thrombophlebitis (I80, I82); vascular dementia (F01.0, F01.1, F01.2, F01.3, F01.8, F01.9); dementia in Alzheimer’s Disease (F00.0 with G30.0, F00.1 with G30.1, F00.2 with G30.8, F00.9 with G30.9).

Sample Size/Study Group

Mail Survey

The available literature was reviewed to determine the smallest sample size required to report on the primary outcomes of interest at a 95% confidence level, including: the proportion of older women with CVD reporting (i) ‘walking for exercise’ in the past 3 months, (ii) no leisure-time PA participation in the past 3 months, (iii) walking six or more hours per week for transportation, (iv) standing, walking, lifting or carrying loads, and/or climbing stairs or hills often as part of their usual daily activities, and (v) participating in a CR program. A summary of the expected proportions in the population and corresponding sample size estimates is provided in Table 2. Rationales and explanations for the inclusion of these different population estimates for sample size determination follows.

The first population estimate used for sample size estimation is the proportion of Ontario women, 65 years of age and older, living with heart disease and reporting ‘walking for exercise’ in the past three months. This population proportion is based on data from the CCHS (Cycle 3.1), and
informs the first component of the primary outcomes of interest, namely the proportion of older women with CVD reporting ‘walking for exercise.’ The population estimate for the proportion of older women with CVD reporting ‘no physical activities’ during their leisure time is also based on CCHS data (Cycle 3.1), and describes the proportion of the population of Ontario women over the age of 65 years reporting ‘no physical activities’ in their leisure time in the previous three months. It must be noted, however, that this is not equivalent to the CCHS classification of ‘inactive’\(^2\). No attempts were made in the study to categorize respondents based on their PA level given the known limitations that exist when trying to quantify (a) older women’s PA participation (Masse et al., 1998; Tudor-Locke et al., 2003), and (b) PA among a sample of older women living with chronic health conditions (Warms, 2006). Thus, specific information about participants’ leisure time PA (e.g., duration, frequency of PA, etc.) that would enable respondents to be classified based on their PA level was not collected, and only the proportion of women reporting ‘no physical activities’ during their leisure time will be reported.

Also informing the sample size estimate is the finding that estimates of PA based solely on leisure-time PA can significantly underestimate the actual level of PA performed by women (Lawlor et al., 2002; Weller & Corey, 1998). Since many women incur the majority of their PA as part of their incidental or non-leisure time daily activities (for example, completing household chores), a population estimate for older women’s PA that includes PA performed as housework was acquired from a national study that surveyed 2341 elderly British women (aged 60-79 years). The purpose of the study was to determine whether older women were achieving recommended PA levels (30 minutes of moderate activity on at least five days a week or 20 minutes of vigorous activity three times a week, including heavy housework) when domestic activities were included in the assessment of PA. Using this broader definition of PA, over two-thirds of the sample was categorized as ‘active at recommended levels’ (66.7%; 95%CI: 64.8%-68.6%). To provide a Canadian context to the estimate of women’s non-leisure time PA (including daily activities performed during household chores), Canadian data obtained from

\(^2\) The CCHS asks respondents about their leisure-time physical activities in the three months prior to survey completion, including type, duration and frequency of physical activities. Using this information, the CCHS categorizes respondents’ according to their leisure-time PA level (inactive, moderately active, and active). Categories are calculated based on average daily energy expenditures that are determined by multiplying the number of times an activity was performed by the average duration of the activity by the energy cost (kilocalories per kilogram of body weight per hour) of the activity.
analysis of CCHS data was also used for estimates of women’s non-leisure time PA, including usual daily activities/work habits and walking for transportation in the previous three months (Statistics Canada, 2006). Finally, a recent study conducted by Grace et al. (2009) was reviewed to ascertain the expected proportion of eligible women in Ontario who attend CR.

Having located the expected proportions for these variables in the literature, the following general formula for a descriptive study of a dichotomous variable was applied to determine the required sample size for the study (Hulley et al., 2007): \[ N = \frac{4(z_{0.05})^2 P(1-P)}{W^2} \] (see Table 2). Using this formula, the largest sample size required is approximately 168 survey respondents, based on a 95% confidence interval \((z_{0.05} = 1.96)\), and a width of 15 percentage points (i.e. \(\pm 7.5\%\); \(W=0.15\)) (see Table 2). We assumed a response rate of approximately 60% to the mail survey using Dillman’s Tailored Design Method (Dillman, 2007), and as such, at least 279 subjects needed to be identified in order to obtain the proposed sample size of \(N=168\).

**Individual Interviews**

Individual interviews were conducted with 15 survey respondents. This interview study group size was based on having achieved qualitative data saturation (i.e. collection of additional data did not present new information that added significantly to the results) (Charmaz, 2006; Cutcliffe, 2000; Glaser & Strauss, 1967; Resnick Mellion & Tovin, 2002; Strauss & Corbin, 1998).

**Data Collection**

**Recruitment**

Prior to application for ethics approval from the UOHI, a “Request for Health Record Services for a Proposed Research Protocol” was submitted to the Health Records Department at the Ottawa Hospital Civic Campus to determine the feasibility of conducting the proposed database search. Upon approval from Health Records, research ethics approval was sought from the human research ethics board at UOHI and the University of Toronto. Upon receipt of both ethics boards’ approval, a health records analyst identified eligible patients by applying study eligibility criteria to a search of the database of past patients of the UOHI. A mailing list of potential participants was generated based on the results of this search, and included 275 unique cases.
with past patients’ full names and addresses. Appendix G provides a flowchart that summarizes all phases involved for recruitment of patients into the study.

Mail Survey

The self-administered mail survey (see Appendix C) was developed based on content and questions in the following sections of Cycle 3.1 of the Canadian Community Health Survey (CCHS), a cross-sectional sample survey that collects information related to health status, health care utilization and health determinants for the Canadian population 12 years of age and older (Statistics Canada, 2005a): general health; volunteer organization participation; changes made to improve health; chronic conditions; health care utilization; patient satisfaction; restriction of activities; physical activities; leisure activities; health utility index (pain and discomfort, getting around); social support availability; social support utilization; access to health care services; socio-demographic characteristics; education; dwelling type; tenure; and, income. Components of the CCHS questionnaire were developed in collaboration with specialists from Statistics Canada, other federal and provincial departments, and/or academic fields (Statistics Canada, 2008). Survey items within the CCHS related to leisure-time PA participation are derived from the Minnesota Leisure Time PA Questionnaire (Bryan & Katzmarzyk, 2009; Taylor et al., 1978).

For this study, some CCHS-based questions and potential responses related to PA practices were modified to reflect recommendations in the literature about how to frame survey questions for samples that include women, particularly those who are older or who represent a diverse ethnic group (Masse et al., 1998; Tortolero, Mâsse, Fulton, Torres, & Kohl III, 1999; Tudor-Locke et al., 2003). For example, since many PA researchers have found that many older women do not consider PA to be a ‘leisure time’ activity (Masse et al., 1998; Tortolero, Mâsse, Fulton, Torres, & Kohl III, 1999; Tudor-Locke et al., 2003), the term ‘leisure time activities’ was modified to read ‘anything you do to be physically active in your own time, by choice’ (see question 3, Appendix C). Potential responses to questions about recent PA practices were also modified to increase the relevance of activities to the practices of older women. For example, vigorous and/or competitive activities such as rollerblading, ice hockey, and basketball were not included among individual responses, but rather, similar activities that older women may engage in (e.g., softball, tennis, golf, bowling) were grouped under the response ‘competitive sports’ (see question 4, Appendix C). Other questions in the survey were drawn from a report by the Health Council of Canada (2007c) that examined the health experiences and outcomes of Canadians with chronic
health conditions. Additional questions related to women’s PA experiences and preferences were developed and informed by the relevant literature on the PA experiences and preferences of older women (Masse et al., 1998; Tudor-Locke et al., 2003).

Prior to administration, the survey was pre-tested with seven women (over the age of 65 years, and living with CVD) attending a CR program at Women’s College Hospital in Toronto, to which I had access as a staff member. The purpose of this pre-testing was to ensure the clarity of questions and to determine the average amount of time required to complete the survey (approximately 25-35 minutes). Minor revisions to the survey were made based on participants’ responses and to reduce redundancy among the survey questions. No identifying information about pre-test survey respondents was collected (completed anonymously), and none of the data collected from these surveys were included in data analysis.

All mailed surveys were assigned a unique identifier code for each respondent for response-tracking purposes only. All potential survey respondents received between one to three contacts by mail from the researcher (depending on responses to the initial mailing). The first mail package included a patient information sheet and consent form (Appendix B) and the survey (Appendix C). One week following the distribution of the first mail package, potential respondents were sent a thank-you/reminder postcard (Appendix D) to prompt additional responses to the survey. If no response had been received within three weeks of the initial distribution of the mail package, a revised cover letter (Appendix E) and replacement survey were mailed. In each of the first and third mailings, women were asked to either (i) complete and return the survey (with completed surveys serving as implied consent), or (ii) return the survey blank to indicate that they were not interested in participating in the study and to be removed from the mailing list.

From the mailing list containing 275 cases, responses included (i) six women that were removed from the sample because they indicated that they had been advised not to exercise by a physician (ineligible) (ii) seven responses indicated that the identified patient had died since hospital discharge (ineligible), (iii) 12 women had moved from the address listed in the health records database (ineligible) (iv) 39 women declined participation, (v) 127 women completed the survey (vision loss in two cases resulted in one survey being conducted by telephone, and one with assistance from a family member). As such, a response rate of 70% (N=191/275) (i.e., patients who completed the survey or who declined participation by returning a blank survey) was
achieved in response to mail packages sent to past patients and this exceeded the expected response rate of 60%. The survey completion rate was 51% (127 completed surveys of 250 eligible cases). Appendix H provides a flowchart detailing the process of survey recruitment.

Survey respondents were asked if they would be willing to be contacted at a later date for an in-person interview, and if so, to provide a telephone number or email address at which they could be reached. Fifty-six survey respondents (44%, N=127) agreed to be contacted for a follow-up interview. Upon completion of the survey data analysis, some of these respondents were contacted to review the purpose of the study, discuss participation in an interview, and (if they still indicated an interest) to schedule a time for an interview.

**Individual Interviews**

Prior to conducting interviews with survey respondents, the interview schedule (see Appendix F) was pilot-tested with two survey respondents to ensure that questions were clearly worded and fully understood by participants. Based on pilot interview participant feedback and recommendations, the interview schedule was modified slightly. Two additional questions were added to the interview guide, including, “What is the most important thing in your life?”; and, “What makes you happy/satisfied in your life?” These questions were added to the interview guide to reflect the tendency of pilot interview participants to reflect on their life and PA throughout their lifespan, and to get a sense of how important participants considered PA as something that makes them happy or satisfied with their life. The other general finding from initial interviews was that participants did not tend to participate in structured PA, but rather, incorporated PA into their daily routines in the form of housework or walking for transportation. The focus of subsequent interviews reflected this general finding.

From the 56 survey respondents who agreed to be contacted, a study group of 20 women was contacted to participate in an interview. Women were contacted such that a balance was sought between participants living in rural (n=9) and urban settings (n=11). Women who were currently attending CR, or who had attended CR within the past year were excluded to get a better sense of how women had adjusted to life following participation in CR. Women who had not attended CR were intentionally oversampled (n=14) compared to women who had attended CR (n=6) in order to better understand the experiences of women who had not attended CR. Participants were also selected based on their age, such that an equal number of women who were 80+ years (n=10), or
<80 years (n=10) were interviewed. Finally, participants were stratified based on their level of PA to create three categories: ‘low active,’ ‘active,’ and ‘high active.’ Stratification was based on their response to the survey questions (1) “In a typical week in the past 3 months, how many hours did you usually spend walking to appointments or to work/volunteer work or while doing errands?”; (2) “Over the past 3 months, which of the following best describes your usual daily activities or work habits?”; and, (3) “What types of activities do you do?” Participants who, in response to these questions, reported (1) walking six or more hours per week, (2) standing or walking quite a lot during the day, usually lifting or carrying light loads/climbing stairs or hills often, doing heavy work or carrying very heavy loads, or (3) walking as a type of activity that they do were given a score of one point for each response. Participants scoring a total of one or less points were categorized as ‘low active’ (n=7); participants were ‘active’ if they scored two points (n=6); participants scoring three points were categorized as ‘high active’ (n=7).

Participants were sampled approximately equally from these categories: ‘low active’ (n=7), ‘active’ (n=6), ‘high active’ (n=7).

Women who met these criteria and who agreed via a telephone conversation to participate in an interview were sent another copy of the study information letter and consent form, and a copy of the interview schedule via regular mail or email prior to the interview. Participants were asked to review these documents, but to wait to sign the informed consent form until they met with me in person to review the consent form and interview schedule. Interviews were scheduled at a time and location that was convenient for the participant. Women who provided informed consent participated in a one-time only, semi-structured, face-to-face, qualitative interview.

Interview participants discussed with the investigator their (i) current health conditions and impact on their daily life, (ii) health promotion priorities and practices, (iii) experiences with CVD and PA, (iv) interactions with physicians related to PA and CR referral, and (v) CR participation (if applicable) (see Appendix F for the complete interview schedule). Given the qualitative, semi-structured nature of the interview, some flexibility within the proposed interview schedule was required as data was simultaneously collected and analyzed in order to direct subsequent data collection for the identification of an emergent theory (i.e., constant comparative methods) (Charmaz, 2006; Resnick Mellion & Tovin, 2002). Thus, in addition to the proposed set of core questions, probes and two additional questions (described previously) were asked depending on participants’ responses to the initial questions, to acquire further detail,
elaboration or clarification of participants’ responses (Patton, 1990). Interviews lasted between 45 and 120 minutes. All interviews were digitally audio-recorded and transcribed verbatim by a professional transcriptionist. I verified all transcripts with the original audio-recordings. Written notes and memos were taken (Charmaz, 2006) and these helped me to return to relevant issues during the interview, ask additional questions pertaining to responses provided by the participants’ during the interview, and to create a paper trail of my decisions and early findings during the interview process. Following qualitative analysis of the interviews, six participants were contacted by mail to determine whether the analysis reflected their intended meanings and experiences (see Appendix J and member checking in Data Analysis, below).

Data Management

Mail Survey Data

Survey participant codes were linked to participants’ personal information (name and address) on an electronic file secured at UOHI. Participants who returned a survey and who did not agree to be contacted for an interview were not identifiable by myself or members of the supervisory committee. Identifier codes were used to track survey responses and to organize and manage the quantitative data. I only viewed individual survey responses during the process of data entry. Once data entry was complete, surveys were stored in a locked file in my supervisor’s university office, for which only my supervisors and I had access. Surveys are scheduled to be shredded 15 years after analysis has been completed (as per UOHI research ethics board policy).

Interview Data

Audio-recordings of participant interviews were transcribed verbatim by a professional transcriber. All identifying information was removed from the transcripts prior to uploading qualitative data to the data-management software used (HyperRESEARCH Version 3.0™ for Macintosh OSX). Digital audio recordings, file-coded transcripts and copies of the transcripts were kept in password protected digital files on a desktop computer in my supervisor’s university office, and only my supervisors and I had access to the data. The digital audio recordings and transcripts will be securely destroyed 15 years after analysis has been completed (as per UOHI research ethics board policy).
Data Analysis

Survey Data

The Statistical Package for the Social Sciences (SPSS Statistics v.17.0 for Macintosh OSX) was used to manage survey data and conduct all statistical analyses. Demographic, socioeconomic, physical and mental health status, and community participation information was collected to generate descriptive statistics and frequency tables about survey respondents regarding their PA participation (i.e., current incidental and leisure-time PA, past PA) and health promotion practices. Descriptive statistics and frequency tables were used to assess and describe respondents’ reasons, priorities and preferences for PA and health promotion practices, and their experiences accessing PA information and programs (including interactions with physicians and participation in CR). Table 3 provides an outline of the framework used for survey data analysis.

Point-biserial correlation coefficients ($r_{pb}$) were used to determine the relationships between respondents’ age (continuous variable) and the following dichotomous variables: (i) receipt of CR referral, (ii) CR attendance, (iii) incidental PA (walking six or more hours/week), and (iv) leisure time PA (walking for exercise).

Two-way contingency table analyses using crosstabs were conducted to identify associations between women’s PA and CR participation and their (i) sociodemographic profile (education, marital status, income), (ii) general physical and mental health status, (iii) social support for PA, (iv) community participation, (v) experiences of personal, environmental, and facility-related PA barriers, (vi) interactions with physicians (i.e., advice and suggestions regarding PA, and referral to CR), and (vii) history of structured PA participation. A two-sided $p$ value of less than .05 was considered statistically significant. For significant relationships between categorical variables with more than two levels, follow-up pairwise comparisons were conducted using the Holm’s sequential Bonferroni method to control for Type I error at the .05 level.

Variables that were shown in these bivariate analyses (point-biserial correlations, crosstabs analyses) to be related to (i.e., statistically significant, or trending toward significance, $p<0.05$ or $p=0.06$, respectively) respondents’ (i) receipt of CR referral, (ii) CR attendance, (iii) incidental PA, or (iv) leisure time PA (i.e., criterion variables) were entered as predictor variables in logistic regression models. The use of logistic regression analyses enabled significant relationships (e.g., between CR attendance and location of residence) to be examined while
holding other, related variables constant (e.g., availability of transportation). Since the survey sample was random and respondents were independent from each other, the binomial assumption was satisfied.

To compare the study sample to the general population of women living in Ontario (aged 65+ years) with CVD, binomial and Chi-squared tests were conducted to compare study survey data regarding CR referral and attendance, and PA participation to data from the CCHS (Statistics Canada, 2006) and other published literature regarding women and CR in Ontario. The primary purpose of these comparisons was to place our survey findings in the context of what is known from population and research data that has been conducted on similar populations. That is, to assess whether our survey sample is a representative sample of the general population of older women in Ontario living with CVD, in terms of demographics and experiences related to PA and CR.

**Interview Data**

Individual interviews were conducted to generate in-depth understanding about women’s experiences regarding health promotion practices and priorities, and their needs and experiences related to accessing PA information and programs. Grounded theory methods were employed to analyze the qualitative data generated during individual interviews with participants (Charmaz, 2006; Corbin & Strauss, 2008). Initial coding involved incident-to-incident coding to identify emergent themes and concepts in the textual data. Codes were constructed and developed into categories “that crystallize participants’ experiences,” (Charmaz, 2006, p.54). For example, initial codes were developed to identify participants’ discussions about the things that they did to maintain or improve their health, including losing weight, practicing food portion control, attending a diet support group, cooking their food from ‘scratch,’ etcetera. The second phase of coding involved focused coding, whereby initial codes were synthesized to explain larger segments of the data, in order to condense the data into manageable groupings. For example, a category termed, “Weight Management” was developed in order to group all the initial codes related to the ways in which participants attempted to manage their body weight as a heart health promotion practice. In this way, focused coding enabled me to move across interviews and compare participants’ “experiences, actions and interpretations,” (Charmaz, 2006, p.59).
Axial coding was conducted to relate categories to subcategories and to specify the properties and dimensions of defined categories. Axial coding enables the sorting, synthesis and organization of large amounts of data, allowing the researcher to reassemble them in new ways that bring the data “back together again in a coherent whole,” (Charmaz, 2006, p.60). This was accomplished by creating broader categories into which particular subcategories could be placed. For example, the categories “Weight Management” and “Nutrition” were grouped within the larger category termed, “Non-PA Health Promotion.” Finally, theoretical coding allowed for the conceptualization of theoretical concepts, involving relationships between the categories developed during focused coding (Charmaz, 2006; Strauss & Corbin, 1998). In this study, this resulted in the development of the theoretical concepts relevant to participants in terms of the ways that they think about health, PA, and actions that they undertake in order to remain healthy, for example. The resulting coding scheme (see Appendix I) was reviewed by my two thesis supervisors and then used to manually code the interview transcripts and these codes were attached to the text using HyperRESEARCH 3.0, a software package that facilitates the management of text-based data (Hesse-Biber, Dupuis, & Kinder, 1991). Finally, if additional codes were identified and defined during the coding of subsequent transcripts, all transcripts that had been previously coded using the former coding schema were then recoded to identify any of the newly defined codes. This process of recoding transcripts as a result of new codes was done twice.

Memo writing was used to document my ongoing thoughts and decision-making throughout the data collection and analysis process (Charmaz, 2006; Resnick Mellion & Tovin, 2002). For example, memo writing (i) assisted with purposive sampling (for example, deciding to interview an equal number of rurally-based women, or women 80 years of age or older, (ii) helped me to plan for further, in-depth discussions with remaining participants about issues or concepts that initial participants described and that required greater exploration, and (iii) facilitated constant comparative analysis to make comparisons between participants about similarities and differences in their experiences and conceptualizations of particular issues (e.g., CVD etiology, the role of incidental PA in their lives).

After completing initial coding and analysis of the interview data, member checking was performed, such that six interview participants were invited by mail to review my analysis of the data and to verify the accuracy of content and intended meanings (Resnick Mellion & Tovin,
This process of verification included mailing a cover letter, a summary of the research including relevant quotations and/or a copy of the extended examples presented in the Interview Findings section, and a brief questionnaire asking participants if their intended meanings are accurately represented within my analysis (see Appendix J). Four participants returned the mailed letter and affirmed that the themes presented related to their experience, and that they believe that the themes presented are also applicable to other older women with CVD.

Trustworthiness (rigour) of the qualitative process and findings (Morrow, 2005) was ensured in this study by employing a number of processes. First, a reflexive process was used to describe my positionality as a researcher relative to the research topic and participants (‘Positionality’ in Chapter 1). Member checking was employed to ensure that the voices of participants were accurately interpreted and presented. Finally, memo writing was used to transparently document how key analytical and interpretive decisions were made in the research process.

Ethical Considerations

Informed Consent Process

Informed consent from survey respondents was implied with the return of a completed survey, since requiring signed consent would have negated the anonymous process of survey completion offered to respondents. All survey respondents were provided with a study information letter and informed consent form (Appendix B), which was mailed with the survey cover letter (Appendix A) and survey (Appendix C), to explain the purpose of the study and their rights and responsibilities as research participants. The survey cover letter also provided contact information for my supervisors, the research ethics officer at the UOHI, and myself, to address any questions they had regarding the study or their participation. Although all survey recipients received a copy of the informed consent form for interview participants, only interview participants were required to review and sign the form. I reviewed the nature of the study and their rights and responsibilities as research participants with all interview participants prior to the conduct of interviews. Participants were ensured that any information that they disclosed would remain confidential, that they were not required to respond to any questions that they did not feel comfortable answering, and that they had the right to withdraw from the study at any time without personal consequence. While quotations from participant interviews were used to inform and illustrate research results, individuals’ identity remains confidential through the use of
pseudonyms. The rights, needs, values, and desires of interview participants were respected at all times.

Confidentiality
As described previously, the identity of survey respondents was protected with the use of unique identifier codes. Respondents were not required to provide identifying information on the survey, with the exception of a telephone number or email address where they could be reached to schedule an interview if willing. This information was removed from the survey upon return and prior to data entry. The confidentiality of interview participants was ensured, as all identifying information contained within interview transcripts was removed prior to presentation in the research results and any subsequent academic publication/presentations.

Potential Risks to Participants
There were no known risks to survey respondents or interview participants given the nature of the information collected (PA and CR participation). Despite the collection of some sensitive data (including health conditions and personal socioeconomic data), participant identity was not linked to this data since unique identifier codes were used and data is presented in aggregate form within research results.

Potential Benefits to Participants
There were no direct benefits to participants as a result of their participation in this research study. However, this research project is intended to create knowledge and greater understanding of the PA and health promotion practices, preferences and priorities of older women living in the community with CVD. As such, participants in this study may benefit indirectly from their involvement in the research process by having their issues, concerns and needs being presented to relevant community and health organizations during dissemination of the research upon study completion.

Participant Costs and Remuneration
No participant remuneration was provided to survey respondents. Survey respondents were provided with a self-addressed, postage-paid envelope to facilitate the return of completed surveys, and to prevent mailing costs from being incurred by participants. Individual interviews were conducted at a time and location convenient for participants. All interviews were conducted
in participants’ homes, which eliminated the need for transportation costs to be incurred by interview participants.
Chapter 4

Introduction

The literature on women and CR has repeatedly provided evidence that older women living with CVD are less likely to be referred to and to participate in hospital-based CR programs (Benz Scott et al., 2002; Parkosewich, 2008), despite their similar clinical profile upon entry, and capacity for improvement in functional capacity following CR participation (Ades et al., 1992). Within a Canadian context, it has been demonstrated that rural dwelling and elderly cardiac patients are at particular risk of CR non-attendance (King, Humen, Smith, Phan, & Teo, 2001). Investigation into the barriers that women in Ontario face with respect to accessing CR has shown that female CR non-attendees face barriers that are significantly different than their male counterparts, including issues related to transportation, family responsibilities, perceiving exercise as tiring or painful, and living with comorbid health conditions (Grace et al., 2009).

While one study has previously examined self-reported barriers to CR among cardiac patients in Ontario (including a gender-based analysis) (Grace et al., 2009), to the best of my knowledge, this study is the first to examine this issue using a socioenvironmental approach to health promotion, a women-only sample comprised exclusively of older women, and in particular, to examine how older women’s PA and health promotion priorities and practices affect their CR participation.

Using a socioenvironmental approach to health promotion, the following chapter will provide a description of the impact of various personal, social and environmental factors on older women’s CR referral and attendance. Presentation of the results of the self-administered mail survey provides, from the perspective of older women with CVD, a description of their experiences and challenges with CR programs, as well as how their health priorities and personal preferences influence their CR participation. In addition to identifying the challenges that this population faces in accessing CR services, older women’s health priorities and preferences related to PA and CR participation will be presented to determine the appropriateness of current CR referral processes and programs for older women living with CVD.

Recognizing the importance and capacity of older women living with CVD to articulate their own experiences (i.e., by using self-report without chart verification), this chapter will first describe survey respondents’ sociodemographic profile (i.e., survey section, ‘About You,’ in
Appendix C), general and mental health status (section, ‘Your General Health,’ Appendix C), experiences with chronic health conditions (section, ‘Long-Term Health Conditions,’ Appendix C), and community participation (section, ‘Your Participation in Your Community,’ Appendix C). The proportion of older women with CVD reporting referral and participation in CR (questions 32 and 33, respectively, Appendix C) will be reported and compared to proportions reported in the literature (using two-tailed, z approximation tests). Finally, the influence of the descriptive variables described above, women’s current and past PA, reasons and preferences for PA participation, challenges to PA participation, and health promotion priorities, will be examined relative to their experiences with CR referral and attendance. As such, this section will address the first primary outcome of interest (the proportion of older women living with CVD and reporting CR attendance), and address the second study objective. That is, to describe the influence of personal-, social-, and environmental-level factors on older women’s CR participation. The secondary outcomes of interest are the relationships between older women’s CR participation and their:

(i) Sociodemographic profile (age, education, marital status, income, location of residence);
(ii) Physical, mental and social health status;
(iii) Receipt of physician referral for CR;
(iv) Preferences and reasons for participation in PA;
(v) Experiences of personal, social, and environmental PA barriers and facilitators; and,
(vi) Their current health promotion practices and priorities.

In the following two chapters, the results of our survey will be reported (referred to herein as the Meeting Women’s Health Needs or MWHN Survey, Appendix C). Results of the survey in terms of survey respondents’ sociodemographic profile, health status, and experiences with health conditions, will be contextualized by presenting results of the MWHN Survey alongside population-level survey findings of the CCHS (Cycle 3.1), specific to women, 65 years of age or older, living in Ontario\(^3\) with CVD.

\(^3\) Ontario was used as the geographic referent variable for population comparisons, since the conduct of Cycle 3.1 of the CCHS (in 2005) preceded the designation of the Champlain Local Health Integration Network in Ontario, which occurred in 2006.
Sociodemographic Profile of Survey Respondents

Survey respondents (N=127) were 66-91 years of age (M=75.8 years; SD=6.3). Non-responders to the survey (N=123) were 65-96 years of age (M=75.4 years; SD=7.7). The majority of respondents were born in Canada (75.6%, N=127; CCHS 65.3%, N=963). Among respondents who immigrated to Canada (20.5%, N=127; CCHS 36.5%, N=996), none were recent immigrants (less than 10 years since immigration) and most (92.3%, N=26; CCHS 95.3%, N=243) had immigrated more than 40 years ago (see Table 4). English is the language most often spoken at home by respondents (87.4%, N=127; CCHS 84.2%, N=995). Few respondents reported speaking French most often at home (2.4%, N=127; CCHS 0.7%, N=995) or being bilingual at home (English and French, or English and another language) (6.3%, N=127; CCHS 9.5%, N=995), and very few women reported speaking another language other than English or French at home (2.4%, N=127; CCHS 5.6%, N=995).

Survey respondents were highly educated, and greatly exceeded the education level of their peers in Ontario. Most respondents graduated from high school (71.8%, N=124; CCHS 17.1%, N=988), and had at least some post-secondary education or training (60.9%, N=110; CCHS 5.7%, N=988).

Most respondents reported being married or in a common law relationship (48.4%, N=126), though many were widowed (32.5%), and others reported being separated or divorced (12.7%), or single/never married (6.3%). Nearly half of all respondents reported that they live alone (40.8%, N=125). A few women (14.3%, N=126) are responsible for the everyday care of an adult (presumably a spouse), and no respondents reported being responsible for the everyday care of a child.

More respondents reside in a city (65.9%, N=126) than in a rural community (34.1%), and most (63.0%, N=127) live within the regional municipality of Ottawa (City of Ottawa). Non-responders were more likely than respondents to reside in a city (73%, N=123) than in a rural community (27%). Respondents most often reported owning (71.3%, N=122) their place of residence and living in either a house or apartment building (84.1%, N=126), though some women live in an institution (typically a retirement residence; 5.6%), condo or townhouse (7.1%), or a mobile home (3.2%).
Table 5 provides details about respondents’ employment/volunteer history and personal income. Given the age of the survey sample, most respondents reported being retired from full-time or part-time paid employment (71.0% and 16.9%, respectively). Very few respondents indicated that they are currently employed, or have never been employed. The majority of respondents reported engagement in volunteer work at some point in their lives, typically on a part-time basis. While the percentage of women reporting retirement from full-time employment may seem high given that many likely engaged in many years of unpaid work in the home raising children, the duration of full-time employment reported by respondents was not assessed. Thus, it is possible that although many women were employed full-time at some point in their lives (e.g., prior to getting married and having children), they may not have transitioned directly from full-time employment to retirement. Given the lack of consensus regarding a definition of retirement (Bowlby, 2007), and little available gender-specific population-level data regarding retirement (other than by assessment of income sources from pensions) (Stone, 2001), it is difficult to determine how our sample compares to the general population of older women in Ontario with respect to employment status/history.

Health Status

General and Mental Health

Participants were asked to respond to questions regarding their general health, mental health, level of stress in their lives and general life satisfaction (see Table 6). Compared to the population of older women in Ontario living with heart disease, a greater percentage of survey respondents reported that their general health is ‘very good’ (16.5% vs. 33.3%, respectively), and that their lives are ‘not very stressful’ (28.9% vs. 38.4%).

Chronic Health Conditions, Pain and Impact on Women’s Lives

All respondents indicated that they live with at least one long-term health condition. Not all respondents indicated that they live with heart disease (84.3%), however, suggesting that they are either unaware of their heart condition (since participants were screened for participation based on a clinical diagnosis of CVD using hospital record codes), or do not feel that they have CVD despite having received services for CVD (i.e., eligibility criteria for study participation). The ten most commonly reported long-term health conditions and their prevalence among respondents are listed in Table 7, with comparable CCHS data regarding the prevalence of these health
conditions in the population of older women living with heart disease in Ontario. Our survey sample reported a lower prevalence than the general population in terms of arthritis, back problems, cancer, urinary incontinence, and asthma. The proportion of women in our sample reporting having diabetes is slightly greater than the general population. Similar proportions of survey respondents reported living with high blood pressure and bowel disorder compared to population data.

In addition to identifying which long-term health conditions they live with, respondents were asked to identify which one health condition most affects their daily life. When asked to select a single response, the conditions that affect their lives the most are heart disease (35.4% of N=113) arthritis (20.4%), back problems (not including fibromyalgia and arthritis) (11.5%) and diabetes (6.2%). Women who reported that heart disease most affects their lives (N=40) were typically recently diagnosed and have lived with the condition for less than three years (76.9%). In comparison, women reporting that arthritis most affects their lives have typically have lived with the condition for ten or more years (see Table 8).

Respondents indicated how frequently long-term health conditions affect their ability to travel in their communities, run errands or get to appointments, and participate in PA (see Table 9). Health conditions did not substantially affect women’s ability to engage in everyday activities such as running errands or getting to appointments, as 74.4% of respondents reported not requiring assistance to complete these tasks. Women’s ability to engage in leisure-time PA, whether at a light-to-moderate or vigorous intensity, however, was affected by the health conditions they experience: 64.6% of respondents indicated that a health condition affects their ability to participate in such activity at least ‘half the time’ to ‘almost always’ (see Table 9).

Sixty-five respondents (51.2%) reported that they experience pain or discomfort, however, 76 respondents completed questions regarding the severity and impact of their pain (despite instructions to skip these questions if they are ‘usually free of pain and discomfort’). These women typically described that they experience ‘mild’ (22.4%, N=76) to ‘moderate’ (61.8%) pain or discomfort, although 15.8% experience ‘severe’ pain or discomfort. Respondents’ feelings about how many activities their pain or discomfort prevents are shown in Table 10.

Though not necessarily related to a long-term health condition, pain or discomfort specifically, various physical or sensory limitations also affect respondents’ ability to navigate in their
environments, communicate with others and perform various physical and intellectual activities. Nearly three-quarters of all respondents indicated that they ‘sometimes’ (47.6%, N=124) or ‘often’ (25.8%) have difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities.

Community Participation, Life Stress and Satisfaction

Survey respondents were also asked to describe their sense of belonging to their local community and involvement in voluntary organizations or associations such as school groups, church social groups, community centres, ethnic associations or social or civic clubs (see Table 11). Respondents’ sense of belonging is weaker than the general population of older women with heart disease in Ontario. A slightly smaller percentage of survey respondents described their sense of belonging as ‘very strong’ compared to the general population (18.9% vs. 25.3%, respectively), and a slightly greater percentage of respondents described their sense of belonging as ‘somewhat weak,’ compared to the population (27.0% vs.16.6%, respectively). The majority of survey respondents (55.7%) reported membership in a voluntary organization or association (see Table 11), with frequent involvement of at least once per week (53.7%), or at least once per month (38.8%).

Compared to the population, a smaller percentage of survey respondents reported that they are ‘very satisfied’ with their life in general (32.6% vs. 20.6%), and that their lives are ‘extremely stressful’ (4.4% vs. 1.6%).

Referral to Cardiac Rehabilitation

More than half of all survey respondents (59.7%, N=119) reported receiving a referral to a hospital-based program that involved PA to manage a health condition. This referral was most often (93.4%) for CR, but also included referrals to physical therapy and diabetes management programs.

We compared the proportion of women reporting having received a referral to CR (0.597) to previous findings in the literature on women’s CR referral in Ontario. Analysis of the available data published from a prospective, controlled study recently conducted in Ontario reports that between 19.4% and 32.7% (depending on referral strategy) of eligible female cardiac patients self-report having received a referral to CR (Grace et al., 2011). Based on a combined automatic
and liaison referral strategy specifically (as is the policy in place at the UOHI), 21.4% of eligible female cardiac patients in Ontario report having received a referral to CR. A two-tailed, z approximation test showed that our sample proportion of 0.597 (95%CI: 0.509-0.685) was significantly greater than the population proportion of 0.214 (two-tailed, p<0.01).

Women’s Sociodemographic Profile and CR Referral

There was no significant relationship between participants’ age and whether they received a referral to CR ($r_{pb}=-0.132$, $p=0.15$, $N=119$). Similarly, respondents’ reported level of income and marital status was not significantly related to their receipt of a referral for CR ($p=0.35$, $p=0.40$, respectively).

Education was significantly related to receipt of referral to CR. The proportion of high school graduates who reported that they received a referral for CR was 0.659: the proportion of women who did not complete high school and received a referral was 0.438. That is, respondents who reported having graduated high school were 1.5 times (0.659/0.438) more likely to report receiving a referral for CR compared to those who had not completed high school, Pearson $\chi^2(1, N=117) = 4.74$, $p=0.03$, Cramér’s $V=0.20$ (see Table 12).

Respondents who live in an urban as opposed to a rural setting, were more likely to report having received a referral to CR, Pearson $\chi^2(1, N=119) = 8.61$, $p<0.01$, Cramér’s $V=0.27$ (see Table 13). The proportions of women living in an urban or rural setting who received a referral to CR were 0.692 and 0.415, respectively. That is, women living in an urban setting were about 1.7 (0.692/0.415) times more likely to receive a referral to CR compared to women living in a rural setting.

Health Status and CR Referral

Respondents’ general and mental health status was not related to whether they received a referral to CR ($p=0.60$, $p=0.15$). Respondents reporting arthritis, back problems, osteoporosis/osteopenia, and/or diabetes were no less likely to receive a referral to CR than their peers ($p=0.71$, $p=0.38$, $p=0.90$, $p=0.83$, respectively). There was also no significant relationship between women’s experience of pain or discomfort and their receipt of referral to CR ($p=0.12$).
Logistic Regression Model for CR Referral

A four-predictor logistic regression model was fitted to the data to test whether age (continuous variable), education (completion of high school), location of residence (urban or rural), or general health status (dichotomized to poor-fair and good-very good-excellent) could predict receipt of CR referral (criterion variable). Despite non-significant bivariate tests between CR referral and age or general health status, these variables were included in the logistic regression model (i.e., to control for differences in age and health) since they have been shown to influence the referral of women to CR (Benz Scott et al., 2002).

A test of the full model against a constant only model (omnibus test of model coefficients) was statistically significant, indicating that the predictors, as a set, reliably distinguished between respondents who did and did not receive a referral to CR ($\chi^2(7, N=112) = 15.01, p<0.01$). The Hosmer and Lemeshow goodness of fit test yielded a $\chi^2(7)$ of 10.24 and was non-significant ($p=0.175$), suggesting that the model was fit to the data well and predicted CR referral better than the chance prediction of 59.8%. According to the model (see Table 14), the odds of a woman receiving a referral to CR was only related to the individual predictor of location of residence ($p<0.01$). The model predicted CR referral 64.1% of the time, or 4.3% better than chance. The odds of an urban woman receiving a referral to CR were 3.4 (95% CI: 1.5-7.8) times greater than her rural peers, holding age, education and self-rated general health status constant.

Cardiac Rehabilitation Attendance

Survey respondents were asked whether they had ever attended a hospital-based program that involved PA to help manage a health condition. More than half of respondents (54.2%, $N=120$) reported that they had attended such a program. Since 95% of these respondents indicated CR as the type of hospital-based program that they attended, the following section will refer to all such hospital-based programs as CR.

At the time of the survey, ten women were participating in CR, 30 women had attended CR in the past one to two years, and 18 women had participated in CR more than two years prior to survey completion. Typically, women who participated in CR completed it (86.2%, $N=65$). I compared the proportion of women attending a hospital-based PA program (typically CR) to previous findings in the literature on women’s CR attendance in Ontario. Previous research indicates that 36.9% of eligible female patients in Ontario participate in CR (Grace et al., 2009).
A two-tailed, z approximation test showed that our sample proportion of 0.542 for CR participation (95% CI: 0.453-0.631) was significantly greater than the population proportion of 0.369 (two-tailed, p<0.01).

**Women’s Sociodemographic Profile and CR Attendance**

The relationship between respondents’ age (measured as a continuous variable) and CR attendance was explored. There was no significant relationship between participants’ age and whether they attended CR ($r_p b=-0.147$, $p=0.11$, $N=120$).

Respondents’ education (graduation from high school), income and marital status were not significantly related to their CR attendance ($p=0.11$, $p=0.22$, $p=0.47$, respectively).

Respondents’ location of residence was significantly related to their CR attendance, Pearson $\chi^2(4, N=120) = 4.048$, $p=0.04$, Cramér’s $V=0.18$ (see Table 15). The proportions of women living in a rural and urban setting who attended CR were 0.415 and 0.608, respectively. Women living in an urban setting were about 1.5 ($0.608/0.415$) times more likely to attend CR compared to women living in a rural setting.

**CR Referral and Attendance**

Women who received a referral to CR were significantly more likely to attend CR compared to women who did not, Pearson $\chi^2 (1, N=117) = 50.78$, $p<0.01$, Cramér’s $V=0.66$ (see Table 16). The proportion of women who received a referral and subsequently attended CR was 0.803, compared to the proportion of women who attended CR having not received a referral (0.130). The probability of a woman attending CR was about 6 times ($0.803/0.130$) more likely if she received a referral for CR.

**Health Status and CR Attendance**

Respondents’ CR attendance was not related to their general health status ($p=0.94$). Respondents reporting arthritis, back problems, osteoporosis/osteopenia, and/or diabetes were no less likely to attend CR than their peers ($p=0.73$, $p=0.33$, $p=0.08$, $p=0.75$, respectively). There was also no significant relationship between women’s experience of pain or discomfort and their attendance at CR ($p=0.82$).
Mental health (collapsed from five to four levels: poor-fair, good, very good, excellent) and CR attendance were found to be significantly related, Pearson $\chi^2(3, N=119) = 8.65$, $p=0.03$, Cramér’s $V=0.27$ (see Table 17). Follow-up pairwise comparisons, however, revealed that this relationship was not significant at any level (see Table 18). This discrepancy likely resulted from the small combined number of respondents reporting ‘poor’ or ‘fair’ mental health status ($N=8$, combined).

**Community Involvement and CR Attendance**

The relationship between women’s CR attendance and their sense of belonging to their local community was assessed. Women’s responses to the question, “how would you describe your sense of belonging to your local community?” were recoded into two categories: ‘weak’ ($N=48$), or ‘strong’ ($N=69$) from the original four categories (very weak, somewhat weak, somewhat strong, or strong). Even after collapsing this variable (to increase sample size for the pairwise comparisons), women’s sense of belonging to their local community was not related to their CR attendance ($p=0.75$). No statistically significant relationship was found between CR attendance and respondents’ membership in voluntary organizations ($p=0.10$).

**Past and Current PA Participation and CR Attendance**

To assess the relationship between CR attendance and respondents’ history of PA, CR attendees and non-attendees were compared based on their report of participation in a structured exercise program at some point in their adult lives. Sixty-one percent of CR attendees and 42% of non-attendees reported a history of participation in a structured exercise program, but cross-tabulation of these variables showed that this difference was not statistically significant ($N=117$, $p=0.06$).

To assess the relationship between CR attendance and current incidental and leisure-time PA, CR attendees and non-attendees were compared based on (i) report of walking six or more hours per week for transportation (e.g., completing errands, to appointments, etc.), (ii) their usual daily activity (i.e., amount of time spent ‘sitting’ compared to ‘standing, climbing stairs, walking or lifting objects’), and (iii) their report of engaging in walking for exercise in the past three months. CR attendees were no more likely than non-attendees to report walking six or more hours per week for transportation ($p=0.35$), or usually being active during the day (i.e., usually standing, walking, climbing stairs or hills, lifting or carrying loads during the day) ($p=0.67$). CR
attendees and non-attendees also did not differ in terms of their reporting of walking for exercise in the past three months ($p=0.61$).

**Social Support for PA and CR Attendance**

I compared whether the amount of emotional, social, and structural support received by respondents differed between CR attendees and non-attendees. No statistically significant differences were found between CR attendees and non-attendees in terms of the availability of support to participate in a PA program ($p=0.20$). No significant differences in CR attendance were found based on the availability of someone to get together with for PA ($p=0.96$), or to help with transportation to a PA program ($p=0.35$).

**Reasons and Preferences for PA Participation and CR Attendance**

No significant differences were found between CR attendees and non-attendees in terms of their reported ‘most important reason for participating in PA’ ($p=0.93$). That is, CR attendees were no more likely than non-attendees to report their most important reason for PA participation to be, ‘to manage or prevent health conditions.’

No differences in women’s preferences for the location of their PA participation were found between CR attendees and non-attendees ($p=0.29$), though all five of the women who reported that they prefer to participate in PA in a hospital or clinic setting had attended CR (see Table 19). Respondents who reported that they prefer to be active with a partner or in a group were no more likely to have attended CR compared to respondents who prefer to be active on their own ($p=0.46$).

**Challenges to PA and CR Attendance**

CR attendees and non-attendees were compared to assess if differences exist between the personal barriers that they report. No significant differences were found between CR attendees and non-attendees in terms of reported personal challenges to PA participation. (i.e., lack of interest, energy, motivation, experience of a health condition, stress or pain, fear of injury, or difficulty communicating). The most frequently cited challenges to PA participation reported by respondents (cited by at least 10% of the sample) were compared between CR attendees/non-attendees (see Table 20). CR non-attendees reported experiencing greater social/environmental and facility-related challenges to their PA participation, namely a lack of transportation and lack
of available programs in their community \((p<0.05\) for both). The frequencies of women reporting these challenges, however, were low \((N=10\) and \(N=7\) for a lack of transportation and lack of available programs, respectively).

**Health Promotion Priorities and CR Attendance**

The most important health promotion activities that all respondents reported currently practicing were ‘exercising or being physically active’ \((33.3\%, N=105)\), ‘taking prescribed medication’ \((25.7\%)\), and ‘eating a balanced diet’ \((20.0\%)\). Sixty-eight percent of CR attendees reported ‘exercising or being physically active’ as their most important health promotion practice, compared to 45% of CR non-attendees, but this difference was not statistically significant \((p=0.08)\). As well, the probability of citing ‘eating a balanced diet’ or ‘taking prescribed medication’ was similar between respondents regardless of CR attendance.

**Logistic Regression Model for CR Attendance**

Based on the preceding bivariate analyses, a six predictor logistic regression model was fitted to the data to test whether location of residence, referral to CR, mental health (transformed to two levels: ‘poor-fair’ and ‘good-very good-excellent’), a lack of transportation, a lack of facilities in the community, or a history of structured PA participation (all dichotomous, categorical predictors) could predict CR attendance (criterion variable). A test of the full model against a constant only model (omnibus test of model coefficients) was statistically significant, indicating that the predictors, as a set, reliably distinguished between respondents who did and did not attend CR \((\chi^2(6, N=113) = 60.33, p<0.01)\). The Hosmer and Lemeshow goodness of fit test yielded a \(\chi^2(5)\) of 1.98 and was non-significant \((p=0.852)\), suggesting that the model was fit to the data well and predicted CR referral better than the chance prediction of 54.0%. According to the model (see Table 21), the odds of a woman attending CR was significantly related to receipt of a referral to CR \((p<0.001)\), lack of transportation \((p=0.032)\), and history of structured PA participation \((p=0.027)\). The model predicted CR referral 81.4% of the time, or 27.4% better than chance. According to the model, the odds of a woman attending CR are about 32 times \((95\% CI: 9.26-111.1)\) greater if she received a referral, 10 times \((95\% CI: 1.22-81.41)\) greater if she has transportation available, and 3.6 times \((95\% CI: 1.16-11.36)\) greater if she has participated in a regular or structured PA program as an adult.
Discussion

The aim of this chapter was to describe survey respondents in terms of their sociodemographic characteristics, health status, community participation and experiences with CR referral and attendance. In addition to reporting the proportion of older women living with CVD reporting having received a referral to and/or attending CR, this chapter presented the results of the study data analyses that showed that location of residence (rural or urban) is the strongest predictor of older women’s receipt of referral to CR, and that older women’s CR attendance is significantly associated with having received a referral, having available transportation, and a history of regular or structured PA participation as an adult.

Referral to Cardiac Rehabilitation

The percentage of women referred to CR in our study (59.7%) was the same as another study involving a women-only sample of comparable size to our study (59%, N=131) (Sanderson, Shewchuk, & Bittner, 2010). The percentage of women referred to CR in our study of 59.7% significantly exceeds the range typically reported for women self-reporting receipt of CR referral at centres utilizing usual (19.4%), liaison (32.7%), automatic (26.3%), or a combined (automatic and liaison) (21.4%) referral strategy (Grace et al., 2011). Usual referral relies on a physician-initiated process of connecting a patient to CR; liaison referral involves a health care provider providing bedside information about CR to eligible patients; and systematic/automatic referral involves the implementation of standing referral orders to CR programs based on eligible diagnoses supported by clinician guidelines (Grace et al., 2011). At the hospital from which respondents in our study were recruited, a combined automatic and liaison referral system for CR was in place for all eligible patients. In addition to an automatic referral order, a bedside nurse (for cardiology patients) or physiotherapist (for cardiac surgery patients) discusses CR and facilitates patients’ entry into the CR program.

Sociodemographic and Health Status Influences on CR Referral and Attendance

The lack of a significant relationship between respondents’ reported income level and receipt of CR referral in our study differs from previous studies involving women-only samples that have found income to be significantly related to CR referral (Allen et al., 2004; Sanderson et al., 2010). Sanderson et al., however, found that this relationship failed to reach significance after adjusting for age and race. Of note, however, is the fact that both of these studies were conducted
in the United States, which does not have a publicly-funded health care system as is in place in Canada. At the hospital site from which respondents were recruited, CR programs are offered at no cost to patients, and this may explain why income was not related to respondents’ CR referral and attendance.

The finding that education (completion of high school) is significantly related to CR referral differs slightly from the findings of a women-only study of comparable size (N=131) that found that education significantly predicted CR attendance (Sanderson, Shewchuk, & Bittner, 2010). While education did not remain a significant predictor of CR referral within our logistic regression model (i.e., after adjusting for location of residence), Sanderson et al. (2010) found that education remained significant in terms of predicting women’s CR attendance even after controlling for sociodemographic and clinical differences among patients. It is possible that the high level of education among respondents to the survey, and resultant low variability in this factor among respondents, may account for the failure to demonstrate a significant relationship between education and CR referral and attendance in our study.

Respondents tended to report a higher general health status compared to the population of older women in Ontario living with CVD. No difference was found between CR attendees and non-attendees in terms of reported levels of incidental and leisure time PA participation. It is possible that a high level of PA participation among survey respondents accounts both for their greater self-reported health status, and our failure to find a difference between CR attendees and non-attendees in terms of incidental and leisure time PA, since health status has been shown to be significantly related to exercise behaviour regardless of CR attendance (Petter, Blanchard, Kemp, Mazoff, & Ferrier, 2009). A higher general health status among respondents may also be related to the lower prevalence of non-cardiac health conditions (arthritis, back problems, cancer, urinary incontinence, and asthma), with the exception of diabetes, reported by survey respondents compared to the general population of older women with CVD. Whether survey respondents indeed report a higher level of PA compared to the general population of older women living with CVD, and whether their health status is related to PA participation, is discussed in the following chapter.
Location of Residence and CR Referral

The finding that location of residence is predictive of CR referral, but not CR attendance, suggests that a lack of referral, rather than patients’ unwillingness or inability to travel to CR, is the primary barrier to CR facing rurally located women. Interestingly, visual inspection of the 2x2 pairwise comparison tables suggests that rurally located women who do receive a referral are very likely to attend. From these tables, it was observed that 17 rural women reported receiving a referral to CR, and 17 rural women reported attending CR: similarly, 24 rural women reported not receiving a referral to CR, which is the same number of rural women reporting not attending CR. Whether there was cross-over in these groups cannot be ascertained based on analysis of the pairwise comparisons alone (i.e., it is possible that some rural women who did not receive a referral actually attended CR, and the same number of women who received a referral did not end up attending CR), but the probabilities remain that 87% of women not receiving a referral will not attend CR, and 80% of women receiving a referral will attend CR.

One potential limitation of our study is that we used self-report regarding respondents’ location of residence (i.e., “In a city,” or “In a rural community,” in response to the question, “Where is your home located?”). This could potentially be verified based on postal code review to determine urban/rural status, however the probability of misclassification as a result of subjective definition of location (i.e., patient-defined) is likely low, and has been shown to not affect the outcomes of similar studies on CR utilization and geography (Leung et al., 2010).

This study is one of very few studies that have reported a significant relationship between referral to CR and location of residence (Brual et al., 2010; Harrison & Wardle, 2005), particularly within a system that involves automatic and liaison referral to CR. A review of geographic issues affecting CR utilization has been conducted, but in examining CR utilization in relation to issues of geography (i.e., location of residence, distance from CR, etc.) the authors did not distinguish between referral, enrollment and attendance (Leung et al., 2010). Only one such study makes this distinction, and was conducted in Ontario, including the Ottawa area (Brual et al., 2010). The authors of the study used geographic information systems to assess drive time to a CR site among 1209 cardiac outpatients, and found that there were significant differences in CR referral and enrollment by drive time, but not degree of participation. This finding suggests that once patients have been referred to and enrolled in CR, that their distance from the CR program does not affect their attendance. Importantly, the authors suggest that
physicians may be taking geography into consideration when referring patients to CR. The fact that our study confirmed this finding, even with an automatic referral system being in place, suggests that this may indeed be the case; that clinicians are referring based on their perception of patients’ ability or willingness to travel to a distant CR site. It is therefore critical at a practice level (or hospital unit policy level if an automatic referral system is in place), that measures are implemented to ensure that referral to CR not be based on (or influenced by) clinicians’ beliefs about the ability or willingness of rural residents to attend CR.

To address the potential for a disparity between urban and rurally-based older women in terms of access to CR, home and community-based programs, involving coordination by regional networks to coordinate services, may be a more feasible and sustainable alternative to either drastically increasing enrollment at existing hospital sites, or attempting to increase the density of CR programs in any given geographic region (Curnier, Savage, & Ades, 2005). Additionally, systematic CR referral strategies where patients are referred to the CR site closest to their home and offered a home-based program when a clinic-based program is not available within an acceptable driving distance for the patient could also increase patient access to CR services (Leung et al., 2010).

**Cardiac Rehabilitation Attendance**

Survey results indicate that women who received a referral to CR were about 32 times more likely to attend CR. This finding reflects the extensive evidence in the literature that has shown that physician referral to (or the strength of a physician’s recommendation to attend) CR is the strongest predictor of CR attendance, particularly among older women (Ades, Waldmann, Polk, & Coflesky, 1992; Grace et al., 2008; Missik, 2001). The finding that 80.3% of respondents who received a referral attended a CR program, is greater than the range of 11-69% reported in the literature (Parkosewich, 2008), but similar to an Ontario-based study that reported that 85.3% of referred patients attended CR (Grace et al., 2008).

CR attendance in this study (54.2%) was greater than has previously been reported among female cardiac patients in Ontario (36.9%) (Grace et al., 2009), and in an American, women-only study of comparable size to our study (34%, N=131) (Sanderson et al., 2010). The high level of CR attendance reported by respondents in our study is likely attributable to the fact that a large percentage of our sample were current or recent CR attendees: 62.5% of respondents reported
attending CR either concurrently with survey completion, or within the past two years prior to survey completion. This response bias by CR attendees may result from these women feeling connected and/or accountable to the hospital where they attended CR, and therefore were more willing to respond to a survey being administered from the same hospital.

**Distance, Location and Transportation and Cardiac Rehabilitation Attendance**

The significant relationship that was found with bivariate analyses between older women’s location of residence and CR attendance did not retain its significance after adjustment for receipt of CR referral. The finding that having transportation available for PA participation increases the odds that a woman will attend CR by about 10 times confirms the results of many other studies on women and CR that report transportation barriers to be a negative predictor of CR attendance. Specifically, Grace et al. (Grace et al., 2008; Grace et al., 2009; Grace, Evindar, Kung, Scholey, & Stewart, 2004) and other reviewers of the literature on women and CR (Benz Scott et al., 2002; Parkosewich, 2008), report that transportation problems, distance to a CR site, and travel time to CR are significant predictors of CR attendance for female cardiac patients.

Notably, it has been reported that, compared to men, women are more likely to participate in suburban community-based CR programs than in hospital-based programs (Benz Scott et al., 2002; Blackburn et al., 2000), and that older patients are more likely to enroll in home-based programs (Filip et al., 1999), suggesting the need for community-based CR programs to encourage older women’s participation. However, our finding that patient preferences related to location of PA (including exercise in a hospital or home setting) and socialization during PA (alone or with others) did not affect CR attendance suggest that simply modifying current hospital- or home-based CR programs may not necessarily lead to greater CR attendance by older women.

**Social Support and Cardiac Rehabilitation Attendance**

Despite the important role that social support has been shown to play in terms of women’s PA participation (Wilcox, Castro, King, Housemann, & Brownson, 2000) and health following a cardiac event (Grace et al., 2002), we found that social support for PA was not related to respondents’ CR attendance. This confirms the findings of a previous Canadian study that found that social support is not associated with CR attendance, either as a factor that predisposes
patients to attend, or one that changes as a result of attendance (Humen, King, Phan, Smith, & Teo, 2001).

An important methodological issue that must be noted in light of the findings related to older women’s CR referral and attendance, is that the self-administered format of the survey meant that I did not verify respondents’ reports of CR referral or attendance using patient charts, and instead relied solely on self-report. Although this can be seen as a methodological limitation of the study, it is my assertion that older women’s perception of CR referral is just as (if not more) important compared to whether there is a documented record of referral, in terms of having an influence on whether she attends CR. That is, given the strength of the relationship between CR referral and attendance demonstrated in this study and others, a woman who does not recall receiving a referral to CR is significantly less likely to enroll in CR, regardless of whether there is a record in her clinical chart of having received a referral. Moreover, an Ontario-based study that assessed the concordance between patient self-report and site-verified CR referral, enrollment and participation reported almost perfect agreement between these two methods of data collection, suggesting that self-report is a highly valid method of data collection among cardiac patients (Kayaniyil, Leung, Suskin, Stewart, & Grace, 2009). Additional research should be conducted to examine whether this high level of agreement remains in a population of older women.

Past Physical Activity and Cardiac Rehabilitation Attendance

Data analyses showed that a history of regular or structured PA, but not current PA, was related to CR attendance among older women with CVD. That is, women who reported participating in a regular or structured program of PA as an adult were 3.6 times more likely to report CR attendance, but CR attendance was not related to their reported current incidental or leisure time PA. This finding is similar to a published review of 121 articles examining correlates of exercise among female and male CVD patients, including CR attendees and non-attendees (Petter et al., 2009). Petter et al. (2009) found that past PA, but not CR attendance, predicted CVD patients’ current PA participation. In the context of this study, my findings suggest that older women who have a history of structured PA participation may be more likely to attend CR (perhaps because of their familiarity with structured exercise), but that CR attendance alone does little to effect long-term change in older women’s total PA levels.
Alternative interpretations of the finding that CR attendees were no more active than non-attendees during daily activities (walking for transportation, climbing stairs or hills, lifting or carrying loads during the day) and walking for exercise in the past three months, include that either (i) older women who choose to not attend CR do so because they are already sufficiently active, or (ii) that CR participation does little to change PA participation in the long term. Similarly, the finding that CR attendees were no more likely than non-attendees to report their most important reason for PA participation to be, ‘to manage or prevent health conditions,’ could be interpreted such that regardless of CR attendance, older women may not conceptualize their PA participation as a CVD ‘risk-management’ practice. Although these alternate interpretations are highly speculative and based solely on the results of the survey findings, the postulate that older women living with CVD may not readily or completely adopt the risk management approach underlying CR is a concept that has been previously proposed within the qualitative literature on cardiac patients (Angus, 2008), and will be explored further in the following chapters.
Chapter 5

Introduction

Older Canadian women’s PA participation is significantly lower than their male peers (Milan, 2011; Rochon et al., 2011). This disparity may be attributable to a number of factors: women’s historical exclusion in physically active pursuits such as sport (Theberge, 2000), a higher prevalence of disability and chronic health conditions such as CVD among older women (Bierman et al., 2009; Statistics Canada, 2002) that may impede their ability to engage in moderate to vigorous leisure time PA (Lawlor et al., 2002), and/or measurement issues such that tools typically used to assess PA prioritize exercise and sport-related leisure time PA rather than the incidental PA in which older women typically engage (Plonczynski, 2003; Redeker & Musanti, 2002). For example, a major limitation of the CCHS (Statistics Canada, 2005a) that has been used at a population level to identify older women’s lower level of PA participation compared to men, is that it may underestimate older women’s actual PA level because its survey responses prioritize leisure time and sport-related activities rather than incidental PA incurred as active transportation or through the completion of household tasks. One Canadian study has estimated that non-leisure time PA, including household chores, represents an average of 82% of women’s total energy expending activity (Weller & Corey, 1998). Similarly, when household activities were included in a UK study of PA among older women (aged 60-79 years), over two thirds of women were assessed as meeting recommended guidelines for PA, compared to only 21% when household activities were excluded (Lawlor et al., 2002).

The objective of this study is not to measure the PA level of older women living with CVD per se, but rather to generally describe the types of PA and health promotion activities in which this population engages and prioritizes. The results of this study are intended to generate a better understanding of what older women living with CVD do and value in terms of PA (among other health promotion activities), and the ways that they access related information and programs. As such, this study can inform the development of appropriate and relevant programs and/or initiatives to address the fact that the majority of older women living with CVD either do not (or choose not) to access existing CR programs involving structured PA participation.

The following chapter will describe the PA participation of survey respondents, and the influence of sociodemographic and health-related factors on both their incidental and leisure time PA
This chapter will also describe respondents’ location and socialization preferences for PA, health promotion practices and priorities, and PA information seeking experiences. As such, study objectives 1(ii–v), 3 and 4 will be addressed, which are:

1. To describe the PA participation (including PA history, current leisure time participation, incidental activity, types of PA, frequency of participation, location of participation, motivation to participate, and desired PA level) of older women living with CVD. The primary outcomes of interest include the proportion of older women with CVD reporting:
   (i) Walking six or more hours per week for transportation;
   (ii) Standing, walking, lifting or carrying loads, and/or climbing stairs or hills often, as part of their usual daily activities;
   (iv) No leisure-time PA participation; and,
   (v) Walking for exercise.

3. To describe the PA and health promotion practices and priorities of older women living with CVD.

4. To explore the priorities, preferences and experiences of older women living with CVD regarding PA and health promotion activities, including accessing PA and other health promotion information and programs.

Results of bivariate and logistic regression analyses assessing factors influencing respondents’ PA participation use ‘walking six or more hours per week for transportation,’ and ‘walking for exercise in the past three months’ as proxies for incidental PA, and leisure time PA, respectively. The use of ‘walking six or more hours per week for transportation’ as a proxy for being incidentally physically active was decided based on a report from Statistics Canada (Gilmour, 2007), in which the author suggests that individuals who report this level of incidental PA may be acquiring sufficient PA to experience health benefits despite low or no participation in leisure-time PA. ‘Walking for exercise in the past three months’ was used as a proxy for leisure-time PA since this form of PA is most common among older women in Canada, and has been reported to account for up to 100% of older Canadian women’s leisure-time PA energy expenditure (Bryan & Katzmarzyk, 2009). Results related to survey respondents’ incidental and leisure-time PA participation are presented alongside and/or compared to population estimates of these variables (Statistics Canada, 2006) to determine whether our sample is comparable to the population of older women with CVD living in Ontario.
Incidental PA Participation

Respondents reported being active throughout the day as part of their usual activities while traveling to appointments, running errands and/or engaging in paid or volunteer work. When asked about their incidental activity, including walking for transportation, respondents are active, such that in a typical week, 72.4% (N=123) of women reported walking one or more hours per week in the past three months to appointments, work/volunteer work, or while doing errands (see Table 22).

The proportion of women reporting walking six or more hours per week for transportation in the past three months was 0.35 (95% CI: 0.27-0.43), and this was significantly greater than the general population of older women living in Ontario with heart disease (0.15, two-tailed, p<0.01) (Statistics Canada, 2006).

A large proportion of survey respondents reported frequent performance of daily physical tasks, such as standing, walking, lifting, climbing stairs, or hills throughout the day (P=0.84; 95%CI: 0.78-0.90). The survey sample is significantly more active during daily physical tasks (including standing or walking quite a lot, climbing stairs or hills often, and/or carrying some loads as part of their usual daily activities) than the general population of older women in Ontario living with heart disease (P=0.65, p< 0.01) (Statistics Canada, 2006) (see Table 23).

Respondents’ Sociodemographic Profile and Incidental PA

There was no significant relationship between participants’ age and their incidental PA participation (rpb = -0.045, p=0.63, N=122). Women’s education, income and marital status were not significantly related to their incidental PA participation (p=0.36, p=0.78, p=0.49, respectively). Women’s location of residence (urban or rural settings) was also not significantly related to their incidental PA participation (p=0.83).

Health Status and Incidental PA

Respondents’ general and mental health status (three levels: poor-fair, good, very good-excellent) was not significantly related to their incidental PA participation (p=0.06, p=0.78, respectively). Living with arthritis, back problems, osteoporosis/osteopenia and/or diabetes was not significantly related to respondents’ reports of incidental PA (p=0.33, p=0.29, p=0.06, p=0.72, respectively, N=123). Similarly, respondents reporting that they are usually free of pain
or discomfort were no more incidentally active than their peers reporting experiencing pain \( (p=0.96, N=119) \).

**Leisure Time PA Participation**

Nine respondents (7.1% of \( N=127 \); 95%CI: 2.6%-11.6%) indicated that they performed no leisure time PA (in the past three months, which is significantly lower than the population percentage of 24.3% (95% CI: 21.7%-27.0%) \( (p<0.01) \) (Statistics Canada, 2006). Twenty-two respondents (17.3%, of \( N=127 \)), however, identified reasons why they did not participate in PA (see Table 24).

Most women reported that among other activities, they most often walked (76.4%, \( N=127 \)), did garden or yard work (44.1%), or engaged in home exercises (35.4%) during their leisure time (see Table 25). Data from the CCHS indicates that 57.1% (95% CI: 54.0%-60.1%) of older Ontario females living with heart disease report walking for exercise in the previous three months (Statistics Canada, 2006). A two-tailed, \( z \) approximation test showed that, compared to the general population of older Ontario females living with heart disease, a significantly higher proportion of our sample walked for exercise in the past three months \( (P=0.76; 95\% \text{ CI}: 0.69-0.84) \) (two tailed, \( p<0.01) \). When asked how frequently they participated in PA during their leisure time: 29.7% (\( N=92 \)) of women participated once or twice per week; 27.5% participated 3-4 times per week; and 37.4% participated 5-7 times per week.

**Respondents’ Sociodemographic Profile and Leisure Time PA**

There was no significant relationship between participants’ age (measured as a continuous variable) and their leisure-time PA participation \( (r_{pb}=-0.122, \ p=0.17, \ N=126) \). Women’s education, income and marital status were not significantly related to their leisure PA participation \( (p=0.37, \ p=0.29, \ p=0.55, \ \text{respectively}) \). Women’s location of residence (urban or rural setting) was also not significantly related to their leisure time PA participation \( (p=0.10) \).

**Health Status and Leisure Time PA**

Respondents’ general and mental health status (three levels: poor-fair, good, very good-excellent) was not significantly related to their leisure time PA participation \( (p=0.50, \ p=0.92, \ \text{respectively}) \). Living with arthritis, back problems, osteoporosis/osteopenia and/or diabetes was not significantly related to respondents’ reports of leisure time PA \( (p=0.53, \ p=0.65, \ p=0.29, \ \text{respectively}) \).
Similarly, respondents reporting that they are usually free of pain or discomfort were no more active during their leisure time than their peers reporting experiencing pain ($p=0.13$, $N=122$).

**Past PA Participation**

Survey respondents reported a history of leisure time PA, with more than two-thirds of the sample (66.7%, $N=123$) reporting participation in a structured exercise program as an adult, involving participation one or more times per week, for three months or longer. This past PA participation, however, was not related to respondents’ reported current incidental or leisure time PA participation ($p=0.97$, $p=0.66$, respectively).

**Satisfaction with PA Level and Influence of Community Belonging**

To understand how respondents feel about their current level of PA, they were asked to assess (1) how their current level of PA compares to their desired level of PA, and (2) how their PA participation compares to their peers. Nearly all women indicated that they would like to be as active (39.8%, $N=123$) or more active (58.5%) than they currently are, and most respondents (64.3%, $N=123$) feel that they are as physically active as their peers.

When asked about their current level of involvement in PA programs in their community, 50.9% ($N=108$) indicated satisfaction with their involvement and would like it to remain the same, while 48.1% would like their community PA involvement to be higher.

Women’s reported sense of belonging within their community (transformed to two levels: ‘weak’ or ‘strong’) was significantly related to their incidental PA, Pearson $\chi^2(1, N=118) = 5.032$, $p=0.03$, Cramér’s $V=0.21$, but not to their leisure time PA ($p=0.11$, $N=122$). Women were about 1.9 times (0.425/0.222) more likely to report walking six or more hours per week for transportation if they reported a strong sense of belonging within their community.

**Reasons and Preferences for PA Participation**

Respondents were asked to report their reasons for being physically active, whether they are satisfied with their current level of activity and community PA participation, and how they feel their PA level compares to their peers’. Respondents were first asked to identify all of the reasons for their participation in PA, and then to specify the single most important reason they
participate in PA (see questions 11-12, Appendix C). The top three reasons that women report participating in PA are to improve their overall health and wellbeing (85.6%, N=104), to manage or prevent health conditions (63.5%), and to feel happy or well (57.7%). Overwhelmingly, the single most important reason for their PA participation selected by respondents was to improve their overall health and wellbeing (68.0%, N=103) (see Table 26).

**PA Program Location: Experiences and preferences**

Women who reported being recently physically active were asked to describe their experiences and preferences regarding the location of PA, method(s) of transportation, and whether they prefer to be active on their own, with a partner, or with others (questions 7-10, Appendix C).

Most women indicated that they typically participated in PA in their home or residence (71.8%, N=103), in a public park or space in their community (41.7%), or at a community recreation/leisure centre (20.0%) (see Table 27). Pairwise comparisons highlighted discrepancies between women’s current and preferred location of PA participation. More than 75% (13/17) of women participating at a community recreation centre prefer this location. Approximately 70% (38/55) of women that currently participate in PA participation in their home prefer this location, whereas 22% (12/55) would prefer to engage in PA in either a public park, community recreation centre, or hospital setting. Although 45% (13/29) of women that currently participate in a public park or space in their community prefer this location, nearly 40% (11/29) would rather be active at home. Of the ten respondents who reported that they currently participate in PA in a mall, only one woman preferred this location. Finally, five women reported current participation in a hospital/medical clinic; two preferred this location, while two would prefer to be either at home or a community recreation centre setting.

When women participate in PA outside of their home, they reported a number of methods of transportation to PA programs or facilities in their community. Women most frequently reported driving themselves (43.0%, N=100), walking (18.0%), taking public transit (11.0%) or being driven by someone else (11.0%).

**Socialization Preferences for PA Participation**

Given the choice of exercising on their own, with a partner or in a group setting, women were almost equally divided in terms of their preference to be active on their own (51.6%, N=93), or
with others (48.4%). Among the women that reported preferring to exercise with others, 21.5% prefer to participate with a partner, and 26.9% prefer a group setting.

**PA Participation: Challenges and Supports**

Most respondents (70.3%, \(N=111\)) reported that they are able to find appropriate PA programs within their communities, though a number of women report being unable to find programs or facilities in which they can walk \((n=17)\), swim \((n=11)\) and/or stretch \((n=8)\).

Women’s PA participation in their communities is potentially affected by various personal challenges (e.g., lack of interest, energy, motivation, or experience of a health condition, stress or pain), environmental challenges (e.g., lack of time, transportation or a partner for PA, safety concerns, caregiving responsibilities, etc.), and facility-related challenges (e.g., lack of facilities, inaccessible, costly or inappropriate programs/facilities, etc.). Table 28 presents the personal, environmental and facility-related challenges respondents’ reported as affecting their PA participation in their community.

Respondents who indicated that they did not face any personal, environmental or facility-related challenges to their PA participation reported significantly greater incidental PA participation \((p<0.01, p=0.04, p=0.03, \text{ respectively}, N=123)\) (see Table 29). Specifically, lower incidental PA participation was reported by respondents who indicated that they faced personal challenges to PA, such as having ‘no interest,’ ‘a general lack of energy,’ and/or ‘low motivation’ \((p=0.03, p<0.01, p=0.04, \text{ respectively}, N=123)\). A ‘lack of a partner for PA’ was the only environmental challenge that was significantly related to incidental PA \((p=0.03)\). No specific facility-related challenges were related to respondents’ incidental PA participation. Women’s leisure time PA was not affected by any personal, environmental or facility-related challenges (see Table 30).

In addition to assessing whether our sample of women faces the environmental challenge of ‘a lack of a partner PA,’ respondents were asked how often someone is available, when they need it, to get together for PA, and/or to take/help them get to a PA program or facility. Respondents were also asked how often they receive support from someone to participate in a PA program. Table 31 provides details about women’s responses regarding the frequency of social support that they receive to participate in PA. In contrast to the significant relationship between incidental PA and the environmental challenge of lacking a partner for PA, the availability of a partner for PA (i.e., how frequently someone is available for PA with the respondent) was not
related to respondents’ incidental ($p=0.35$, $N=92$) or leisure time PA participation ($p=0.64$, $N=95$). How frequently someone is available to provide transportation to a PA program or facility was also not related to respondents’ incidental ($p=0.52$, $N=86$) or leisure time PA ($p=0.43$, $N=89$). Finally, how frequently general support is available from someone to participate in a PA program was not significantly related to women’s incidental ($p=0.59$, $N=89$) or leisure time PA participation ($p=0.07$, $N=91$).

Logistic Regression Model for Incidental PA Participation

Based on the preceding bivariate analyses, a four predictor logistic regression model was fitted to the data to test whether women’s sense of community belonging, energy, motivation and a partner for PA (all dichotomous, categorical predictors) could predict the criterion variable of incidental PA (walking six or more hours per week for transportation). Pairwise comparisons that showed that experiencing no personal, environmental or facility-related challenges to PA participation was significantly related to respondents incidental PA were omitted from the model, since selection of this response was not independent of (i.e. co-varied with) women’s responses to particular personal, environmental or facility-related challenges. That is, if a woman indicated that she faced the personal challenge of ‘a lack of energy for PA,’ she would not have selected the multiple choice option of ‘none’ in response to the question, “Which personal challenges affect your ability to exercise or be physically active?” (question 23, Appendix C). As well, ‘lack of interest in PA’ as a personal challenge to PA was excluded from the model, because one cell in the 2x2 table of incidental PA and ‘lack of interest in PA’ had a value of ‘0’; specifically, there were no women reporting walking six or more hours per week for transportation who also selected a ‘lack of interest in PA.’ As a result, the maximum likelihood estimate for this variable could not be ascertained due to quasi-complete separation of the data (SAS Institute Inc., 2008).

A test of the full model against a constant only model (omnibus test of model coefficients) was statistically significant, indicating that the predictors, as a set, reliably distinguished between respondents who reported walking six or more hours per week for transportation ($\chi^2(4, N=118) = 18.65$, $p<0.01$). The Hosmer and Lemeshow goodness of fit test yielded a $\chi^2(5)$ of 2.30 and was insignificant ($p=0.81$), suggesting that the model (see Table 32) was fit to the data well and predicted incidental PA better than the chance prediction of 65.3%. According to the model, the odds of a woman reporting walking six or more hours per week for transportation was related to the predictors, ‘sense of community belonging’ ($p<0.05$) and ‘energy for PA’ ($p<0.05$). The
model predicted incidental PA 67.8% of the time, or 2.5% better than chance. A woman who did not report a general lack of energy as a challenge to PA participation was 5.8 (95% CI: 1.21-27.92) times more likely to engage in walking six or more hours per week for transportation, compared to a woman who reported a general lack of energy as a challenge to PA participation, holding sense of community belonging, motivation for PA, and availability of a partner for PA constant. A woman who reported a strong sense of belonging to her community was 2.6 (95% CI: 1.1-6.3) times more likely to engage in walking six or more hours per week for transportation, compared to a woman who reported a weak sense of belonging to her community, holding energy for PA, motivation for PA, and availability of a partner for PA constant.

### Accessing PA Information

In the year prior to survey completion, 41.2% (N=119) of respondents had sought information or advice on PA. No significant relationships were found between respondents’ age, education, income or marital status and whether they had sought information on PA/exercise in the past year (p=0.50, p=0.25, p=0.54, p=0.12, respectively). Significantly more urban- than rural-based women reported seeking PA information or advice, Pearson $\chi^2(1, N=119) = 4.44, p=0.04$, Cramér’s $V=0.19$, such that urban respondents were about 1.75 times (0.476/0.270) more likely than rural respondents to have sought PA information.

Most often, women sought this information from a doctor, recreation centre, or book/pamphlet (see Table 33). Interestingly, women were more likely to seek information on exercise from a friend than a physical therapist, and were just as likely to seek advice from a family member as an exercise specialist.

Most women (86.3%, N=51) received the information or advice that they were looking for, and 80% (N=50) were either ‘somewhat satisfied’ or ‘very satisfied’ with the way the information or advice was provided. Despite the difference in information seeking between urban and rural respondents, there was no difference in the proportions of urban and rural women reporting that they received the information that they sought (p=0.61, N=51). Ratings of the quality of information or advice available or provided were typically ‘excellent’ (32.0%, N=50) or ‘good’ (48.0%).
Physician Interactions Regarding PA

The survey section entitled, “Your Experiences with Your Doctor(s)” asked respondents about the support that they received from their physicians regarding PA. Specifically, respondents were asked how often, in the past 12 months, their doctor(s) talked to them about their level of PA and specific things they could do to increase it (described herein as ‘general support’). Respondents were also asked about the frequency of support received in terms of actually helping them to increase their PA level, by providing them with written information about PA, helping them to set specific activity goals, and/or referring them to a specific PA program to help them manage their health and health condition(s) (‘instrumental support’).

All respondents reported visiting their family doctor or a specialist in the past year. Respondents more often received general rather than instrumental support for their PA participation. In the year prior to survey completion, 62% of respondents (N=113) reported that their physician always, usually or sometimes talked to them about their level of PA, or specific things they could do to increase their PA participation. Despite these relatively frequent conversations, only 38.7% of respondents (N=111) reported that their physician always, usually or sometimes helped them to increase their level of PA, for example, by providing written information about PA, helping them to set activity goals, or referring them to a PA program (see Table 34). Very few respondents (12.9% of N=116) received a referral to a community-based PA program to help them manage a health condition.

Physician support for PA, in terms of discussing women’s current PA level and things they could do to increase it, was not significantly related to respondents’ incidental (p=0.86, N=107) or leisure time PA participation (p=0.09, N=113). Receiving instrumental support from their physician to increase their PA level (e.g., providing an exercise prescription, helping to set PA goals, and/or referral to community PA programs), was also not significantly related to respondents’ reported incidental (p=0.44, N=110) or leisure time PA participation (p=0.98, N=111).

Health Promotion Priorities, Practices and Challenges

Nearly all respondents (96.8%, N=125) reported engaging in at least one health promotion practice in the past year. To better understand women’s current health promotion practices and priorities, respondents were asked to identify, among a list of health promotion practices, which
practices (i) they currently do, and (ii) are most important to them (see Table 35). Respondents indicated that their most important health promotion practices were ‘exercising or being physically active’ (33.3%, N=105), ‘taking prescribed medication’ (25.7%), and ‘eating a balanced diet’ (20.0%). All other health promotion practices other than these three top practices were considered ‘most important’ by less than 4% of respondents. A number of respondents did not select ‘avoid smoking’ or ‘drink a limited amount of alcohol,’ but indicated in writing on the survey that they ‘never smoked’ or ‘don’t drink any alcohol.’ When respondents provided this qualitative, written response regarding smoking or alcohol consumption, it was quantified during data entry as having been selected as current health promotion practices. It is possible, however, that other respondents who do not smoke or drink alcohol did not indicate these practices either quantitatively or qualitatively (i.e., missing data for this multiple response question), and as a result, the actual prevalence of these health promotion behaviours may higher than reported here.

Respondents were asked whether they had done anything in the past year specifically to improve their health. Two-thirds of women (65.8%, N=117) reported doing something in the past year to improve their health. The most important changes women made to improve their health included ‘increasing exercise or PA’ (25.7%, N=70), ‘changing diet or improving eating habits’ (25.7%), ‘losing weight’ (17.1%), or ‘receiving medical treatment’ (17.7%). More than two-thirds of respondents (67.7%, N=109) also indicated that they have health promotion intentions that they plan to enact in the next year. The three most frequently reported health promotion practice intentions reported by women were to ‘start or increase exercise or PA’ (64.8%, N=91), ‘lose weight’ (50.5%), and ‘change diet or improve eating habits’ (24.2%).

Nearly three-quarters of respondents (71.8%, N=117) felt that there were specific things that they should do to improve their physical health (28.2% of women felt there was nothing more that they should do beyond current health promotion practices). Most women felt that they should ‘start or increase exercise or PA’ (52.6%, N=78) or ‘lose weight’ (26.9%). About 40% (34/84) of women who feel that they should do more to improve their health, but reported challenges to adopting or maintaining various health promotion practices (see Table 36).

Discussion

This chapter described the incidental and leisure time PA participation of survey respondents, as well as the influence of sociodemographic and health-related factors on their PA participation.
Survey respondents reported significantly lower levels of leisure time physical inactivity, and higher levels of incidental (walking for transportation and usual daily activities) and leisure time PA (walking for exercise) than the population of older women living with heart disease in Ontario. The most frequently reported types of PA in which respondents engaged were walking, gardening and home exercises.

**Determinants of PA Participation**

No relationship was found between respondents’ sociodemographic or health status profile (including experiences with chronic health conditions and pain) and their incidental or leisure time PA participation, despite evidence of a relationship between these variables within the literature (Plonczynski, 2003). The finding that respondents’ past PA participation (i.e., history of structured exercise as an adult) was not related to their current PA participation also does not reflect the extant literature that a history of PA participation is a reliable predictor of current PA participation (Petter et al., 2009; Sherwood & Jeffery, 2000).

Bivariate analyses demonstrated that sense of community belonging, a ‘lack of interest in PA,’ ‘lack of energy for PA,’ ‘low motivation for PA,’ and a ‘lack of a partner for PA,’ were significantly related to respondents’ incidental PA participation (walking for transportation), but logistic regression analysis revealed that respondents’ sense of community belonging and ‘a lack of energy for PA’ were the only reliable predictors of respondents’ incidental PA participation. The finding that a ‘lack of energy for PA’ was predictive of incidental PA in our logistic regression model reflects that of a previous study involving 2,912 women aged 40 years or older that found that ‘lacking energy to exercise’ was ranked among the top four most frequently reported barriers to PA (King et al., 2000). As such, efforts are needed to better understand and address why older women feel a lack of energy for PA, and whether this results from problems with sleep, physical symptoms related to CVD, or other reasons. This should be investigated clinically, but would also be usefully informed by a qualitative investigation of women reporting a lack of energy for PA (this issue did not emerge during my qualitative interviews with participants).

The findings that (a) older women in this study are actively engaged in their communities in terms of membership in voluntary organizations, and (b) that a strong sense of community belonging predicts older women’s incidental PA participation, may be explained in part by the
results of a recent study that assessed Canadian adults’ level of ‘active engagement in life’ between their sixth and eight decades. After developing a composite measure of ‘active engagement in life,’ comprised of three CCHS variables: reported number of weekly hours of sedentary leisure time activity, sense of belonging to local community, and involvement in voluntary organizations, the authors concluded that the majority of older Canadians (69.1% of \( N=14,749 \)) are sedentary less than 35 hours per week, feel a strong sense of belonging with their community, or are active in voluntary organizations, with little variation with increasing age (Weir et al., 2010). That is, regardless of age, older adults who are actively engaged with their community and/or voluntary organizations are less likely to be sedentary. This finding, in addition to our finding suggests that, rather than promoting leisure time PA among older women living with CVD, supporting and facilitating older women’s participation in their community may contribute to increased incidental PA. Promotion of community engagement among older women in order to increase their incidental PA (that is, walking for transportation or engagement in physical activities involved with everyday life), however, may necessitate the involvement of other social sectors beyond primary health care. For example, improving the walkability of communities in which older women reside may require collaborative effort among city planners, transportation service providers and health professionals.

**Support for Walking as Older Women’s Preferred Mode of Activity**

Survey analysis demonstrated that respondents most often engage in walking, gardening and home exercises as their preferred modes of PA, which reflects the findings of a qualitative analysis of a self-report survey representing a cohort of 509 Australian women between the ages of 75 and 81 years (Adamson & Parker, 2006). The authors reported that the most common types of physical activities in which respondents engaged were walking, gardening, swimming and home exercises (Adamson & Parker, 2006). Although respondents in this study did not rate swimming participation as highly as in the Australian study by Adamson and Parker (2006), this discrepancy is likely attributable to the greater availability of outdoor pools and open water swimming available in combination with Australia’s year-round warmer climate compared to Canada.

The priority that respondents to the survey place on walking, both as a form of incidental and leisure time PA, reflects the quantitative literature about PA among older adults (Bryan & Katzmarzyk, 2009; McPhillips, Pellettera, Barrett-Connor, Wingard, & Criqui, 1989). Walking
holds great potential as an accessible, feasible and efficient form of transport and PA for older women living with CVD, provided that structural supports (such as neighbourhood walkability) exist to support older women’s walking (Davis et al., 2011; Stathi et al., 2012). Additionally, the finding that walking approximately 9.7 kilometres per week (equivalent to 1.4 kilometres per day) is associated with a 33% reduction in CVD risk (Sesso et al., 1999), and that as little as one hour per week of walking is associated with significantly reduced CVD risk among women (Oguma & Shinoda-Tagawa, 2004) provides compelling evidence to support the development of recommendations, programs and/or community-based interventions to encourage and support older women with CVD to adopt a program of walking for PA.

Physician Support for Older Women’s PA Participation

Many respondents reported that they rely on family members and friends for information about PA, but most women reported seeking PA information from their physician. Nearly two-thirds of respondents to our study (62%) reported that they received general support for PA from their physician (e.g., talking to them about their level of PA or specific things they could do to increase their PA level). Far fewer respondents (38.7%), however, received instrumental support for PA from their physician (e.g., providing written information about PA, helping them to set activity goals, or referring them to a PA program), and only 12.9% of respondents received a referral from their physician to a community-based PA program. These findings are comparable to those of a recent report on the primary health care experiences of Canadians living with chronic illness that found, among older adults (aged 65 years or more, both sexes), 67% reported that their primary care provider asked them about their goals in caring for their chronic health condition (general support), 27% were given a written list of things to do to improve their health (instrumental support), and 11-15% report that they were encouraged by their physician to attend a group, class, or community program (such as a support group or exercise class) to help them cope with their chronic health condition(s) (Health Council of Canada, 2010).

Compared to their counterparts in the United States, our respondents received considerably greater support for PA from their physicians. Authors of a Centers for Disease Control (CDC) report based on population-level data from the National Health Interview Survey (NHIS) reported that less than half (48.9%) of American women aged 50 years or older were asked about their PA by their health care provider during routine patient check-ups, and women were less likely than men to be asked about their PA (OR=0.8; 95%CI:0.7-0.9) (Centers for Disease
Control, 2002). Analysis of the same NHIS survey with a sample of older women showed even lower levels of physician support for PA, reporting that 31.4% of women aged 50 to 64, 29.2% of women aged 65 to 74, 21.6% of women aged 75 to 84, and 14.4% of women aged 85 and older had a clinician recommend that they begin or continue to perform any type of exercise or PA during the previous year (Schonberg, Marcantonio, & Wee, 2006). The CDC report also demonstrated that individuals with a higher level of education were more likely to be asked about their PA (Centers for Disease Control, 2002). If these same relationships hold true in Canada, the high level of education in our sample may account for the greater proportion of our respondents who were asked about their PA level.

The results of the CDC report do lead one to consider whether simply asking women about their PA levels may encourage them to increase their level of PA. While no causal relationship can be inferred from their correlational findings, it is interesting that the CDC report authors found a relationship between whether women were asked about their PA level and the proportion of women who reported being physically active at recommended levels. The prevalence of women (aged 65-79 years) who were active at recommended levels was higher among women who were asked about their PA (28.2%), than among those who were not asked (18.2%) (Centers for Disease Control, 2002). Similarly, the prevalence of older women (aged 80 years or older) meeting recommended levels of PA was higher among older women who were asked about their PA (21.9%), than among older women who were not asked (8.3%) (Centers for Disease Control, 2002).

Despite the strong relationship between physician referral and CR attendance discussed in the previous chapter, I found no association between respondents’ receipt of general or instrumental support for PA from their physician and their incidental or leisure time PA. Based on these findings, it is unlikely that being asked about PA by their physician will alone lead to greater PA participation among older women. The available literature on physician counseling for PA is both sparse and not promising in terms of increasing PA among individuals. The authors of a systematic review of the literature on physician counseling for PA found that, of the only three studies that employed a randomized controlled trial or controlled quasi-experimental design, only one reported a short-term positive effect on patient PA levels (Hudon et al., 2008).
Limitations of Survey Results

The preceding two chapters provide a broad overview of the experiences of older women living with CVD in terms of their PA and CR participation. Analyses of the survey data identified and assessed the influence of particular personal, social and environmental factors on older women’s participation in CR, PA and other health promoting activities. Respondents’ PA and health promotion practices and preferences were described in order to assess whether currently structured CDM programs (such as CR) reflect their needs and priorities related to PA and health promotion activities.

Despite the contribution of this survey results to a further understanding of the PA and health promotion priorities, practices and preferences among older women living with CVD, I do acknowledge a number of limitations to my findings. The survey was pre-tested but not validated for use with the intended population of older women living with CVD, despite many questions being replicated from the CCHS (Cycle 3.1) and a national report on Canadians with chronic illness (Health Council of Canada, 2007a; Statistics Canada, 2005a). The survey results are also subject to response bias from active older women living with CVD, given the social desirability of the variable in question (i.e., PA) (Dillman, 2007). As with most research studies, respondents to the survey were most often Caucasian, non-immigrants who are highly educated and report a yearly household income of more than $20,000. Recruitment from a large, urban hospital specializing in cardiac care, and a large proportion of respondents who reported attending CR also suggests that survey respondents may not face the same barriers to accessing health care services as non-respondents, as well as the general population of older women in Ontario living with CVD. A lack of chart-based verification of respondents’ self-report of CR referral and attendance may also limit the validity of our results, although it was my intention to assess women’s experiences from their own perspective. Finally, the format of the survey that relied on respondents’ self-report of PA participation may have resulted in respondents over-reporting their actual level of PA compared to more objective assessments of PA involving activity diaries, pedometers and accelerometers, for example (Colley et al., 2011).

What remains unanswered from these survey findings is how older women living with CVD conceptualize their health in the context of living with CVD, and whether the risk-management approach of CDM programs (such as CR) are aligned with women’s notion of CVD etiology, PA participation and other health promotion practices. The priority that older women place on
walking and gardening for activity, and the role that incidental versus leisure time PA participation plays in the lives of older women living with CVD also remains unexplored.

The following two chapters will build upon survey findings by presenting the findings of qualitative interviews conducted with 15 survey respondents. The meaning and importance of health and PA in the lives of older women living with CVD will be presented, with rich description of how older women living prioritize and engage in PA within the context of living with CVD. In particular, in Chapter 6, I will describe how participants conceptualize their health, understand CVD etiology, and engage in health promoting activities following the experience of a cardiac event. I will then describe in Chapter 7, participants’ engagement in leisure time (or ‘planned’) PA, the instrumental role that ‘incidental’ PA plays in their lives, and their ability to effectively balance PA with periods of rest in order to accomplish various daily tasks. Finally, to provide greater understanding of the context in which older women make decisions about their PA and health promotion priorities and practice, I present two extended examples that illustrate how rural participants negotiate their PA within the context of living with CVD.
Chapter 6

Introduction

The preceding chapters provide an overview of the experiences of a sample of older women with respect to accessing CR programs and PA information, and engaging in PA and other health promoting behaviours in the context of living with CVD. Analysis of survey data demonstrated that older women face challenges related to accessing existing CR programs (lack of referral to CR, most often among rurally located women), and receiving general and instrumental support for PA from their physicians. Despite these challenges, respondents reported that they highly value and regularly engage in PA as a health promoting practice. The type of PA prioritized by respondents was walking (for both transportation and exercise), with an expressed preference for PA opportunities either in their home or community. The amount of walking for transportation that older women engage in is related to their sense of belonging in their community, and having energy for PA.

While the survey results effectively describe (i) what respondents value and do in terms of PA and other health promoting activities, and (ii) the personal, social and environmental challenges that influence these practices, these descriptive findings alone do little to further our understanding of why respondents engage (choose not to, or are unable to engage) in these practices. A mixed method design, involving qualitative interviews, was employed to facilitate such understanding, by explaining older women’s PA and health promotion practices, preferences and priorities, from their perspective.

In the following two chapters I will present accounts from, and my qualitative analysis of participant interviews, in order to expand upon the survey findings. In these chapters I will address study objective four, which is “to explore the priorities, preferences and experiences of older women living with CVD regarding PA and health promotion activities, including accessing PA, CR and other health promotion information and programs.” In this chapter specifically, I will provide a rich description of how participants conceptualize notions of health, CVD etiology, and engage in PA and other health promotion practices (including CR) within the context of aging and living with CVD. Using information gleaned from interviews with participants, I present and explain how the provision of community meals may serve as a
possible point of entry for PA and health promotion programs targeted and relevant to older women living with CVD.

Much of the extant literature on CVD prevention and rehabilitation focuses on the education of patients about the medical etiology of CVD and various ‘lifestyle behaviours’ in which they can engage to reduce their risk of CVD morbidity and mortality, and to effectively ‘manage’ their health condition on a day-to-day basis (Hackam et al., 2010; Mosca et al., 2011). For example, patient education about healthy eating, cardiac medication, stress management, and prescribed, structured and supervised exercise constitutes the majority of existing CR programs (Stone, Arthur, & Suskin, 2009). Few programs, however, are tailored to meet the needs of women in general (Davidson et al., 2008; Grace, Racco, Chessex, Rivera, & Oh, 2010; Price et al., 2005), and older women in particular. What has seldom been explored in the literature are the ways in which older women with CVD think about their health, CVD etiology, and what (if anything) they can (and want to) do within the context of living with CVD in order to maintain or improve their health. In the following chapter I will describe these issues from participants’ perspectives, considering as well their personal, social and environmental contexts. In so doing, in this chapter I will extend the results of the survey analysis, in particular, by explaining in detail participants’ experiences with CR and other health promoting activities following a cardiac event. Having gleaned such information, more relevant support can be offered to older women living with CVD, as programs (such as CR) can be (re)structured from the perspective of older women living with CVD, rather than from that of health care professionals.

**Interview Participants**

I interviewed sixteen survey respondents in order to follow-up and expand upon the findings from the survey. One interview participant, however, was excluded from the qualitative analysis because, despite my best efforts, I was unable to keep her discussion focused on the interview topic. Tangential conversations dominated our interview so much so that questions posed from the interview schedule, or modified by me in order to elicit a pertinent response, were never addressed. No obvious evidence of cognitive impairment was observed, and was unlikely given that this was an exclusion criterion of the study. Since no substantial new issues relevant to the research project arose during this interview, it was decided, after consultation with my thesis supervisors, that this interview would be omitted from the qualitative analysis.
Among the fifteen women interviewed and included in the following qualitative analysis, participants ranged in age from 72-93 years (\(M_{\text{age}}=79.6\) years) (see Table 37). All interview participants were Caucasian, which is generally representative of the population of older women in Ontario living with heart disease; 91.5% of CCHS respondents within this population identified as ‘white’ in reference to their cultural or racial origin (\(N=995\)) (Statistics Canada, 2006). Seven participants reside in rural communities, and eight participants live in urban communities (within and outside of the City of Ottawa). Four women reported participation in CR. At the time of the interview, nine participants were married, four were widowed (of which, three lived alone), and two women were divorced and lived alone. While nearly all participants who were married reported that their spouse lived with at least one chronic health condition (e.g., diabetes or heart disease), four women described how their spouse’s health condition(s) substantially affected the way that they lived their lives. None of these women, however, felt that they served as a caregiver for their spouse.

It has been argued by others that, in addition to living with CVD, women’s social roles can result in considerable constraints on “the amount of time available for rest, leisure, attention to personal health, and pursuit of information about healthful activities” (Angus, 2001, p.39). As such, in addition to these general descriptions of interview participants, it is also important to preface the interview findings by providing a brief overview of the social context in which participants in this study live. Interview participants’ in this study shared a similar social location, in that all participants were female, in their eighth to tenth decade of their life, Caucasian, currently or previously involved in a heterosexual relationship, have adult children and (in most cases) grandchildren. The socioeconomic status of participants varied little, with most being middle to upper-middle class. Only one participant seemed to live an upper-class lifestyle (based upon her description of her recreational activities and prior affiliations), and I feel that this strained the interview somewhat since there was an obvious disparity between me as the interviewer (middle-class), and her as the interviewee. The interview was also brief (the participant was adamant, upon agreeing to the interview, that it not exceed 45 minutes), and in general, lacked the richness of description that other interviewees provided. For example, this participant did not want to discuss her family in detail, her personal feelings related to statements that she made, and throughout the interview, maintained a very professional demeanor. It is possible that her approach to the interview is reflective of her previous role as a policy consultant for the government.
In terms of participants’ social history and relationships, most participants described having worked prior to getting married, taking time out of the paid workforce to raise their children, and then returning to work outside their home at some point afterwards. Only a few women reported not working outside of the home after raising children. Interestingly, four participants were married to men in the military.

A detailed discussion of the particular political and lived history of participants and the impact that this history had on the PA participation of interview participants is beyond the scope and purpose of this study. Nevertheless, it is acknowledged that the history of women in Canada between 1920-1970 (when most participants would have married and been raising their families), including living through the Great Depression and the Second World War (Strong-Boag, 1994), likely played a significant role in shaping the physical activities and health promotion practices that participants described during their interviews. Interview questions were not structured to address the influence of participants’ social history on their current PA or health promotion practices, but two brief quotations are provided here in order to illustrate how this social context may have influenced the lived experiences and PA participation described by study participants in the following two chapters.

**MWHN069TP (78 years old, rural resident):** [In this rural town, my children] could watch lambs [being] born because we did get involved in farming, which was kind of a bizarre experience. But living here, one farmer became a mentor and said, “You can’t waste nine acres of land, you have to put something on it.” And [so] we raised sheep…

I would say - [my husband] might not appreciate this - that I did most of the child raising because he traveled a lot. He had a ... very exciting and interesting career, and it meant [I had to be] a stay-at-home mom who ... could do almost anything, because if something needed fixing, or the pump needed priming, because here we are living on well and septic [water and waste systems]. You know I had to ... It’s my nature too, but I had to get involved. I had to be able to do those things or we wouldn’t survive… My husband’s] absence out of the home with his career, which of course kept us all going and…living very comfortably, meant I had to undertake more things than I would EVER have done in the .... city. You know. I delivered a lamb! ...I wouldn’t do it again if I didn’t have to. You know, and ... lots of things. I can prime a pump. And I can drive a hammer with the best of them. (laughing) I can fix a fence. But, I’m sure there a lot of women who would have never experienced anything like that.

**MWHN018LL (93 years old, rural resident):** [I grew up on] a small 50-acre farm. [We farmed] cows and horses. A team of horses and cows and ... We had pigs and hens... But ... it’s a lot different now than it was then. ...Now the farms are all big and they have so much machinery to run things. Before everything was pretty well done by hand. The corn was cut by hand; stooped by hand. The grain was stooped by hand. Now it’s all thrashed in the field…Like hay was cut; it wasn’t baled. Handled loose. And went up in the barn with a hay fork… I worked out on the farm. I worked inside and outside…gardening. A lot. I worked in the hay or stooping grain, or whatever. Whatever there was to do… We grew everything. Beans and peas and ... The dried beans too. We’d grow them and then ... dry up a little bit. We’d pull them and let them dry and then ... The white beans…And we did the same way with the peas too… We had all kinds of vegetables. And we had our own meat and
everything… So the Depression in the ‘30s when I was young, it didn’t really affect us too much because ... we had our own vegetables. We had our own apples… We made all our own bread… When I was young they took the wheat. Grew wheat and took it down and had it ground, and …oats into oatmeal.

In addition to the first participant’s discussion about how her life experience in a rural town may have differed from that of other women her age, the second quotation illustrates how the strenuous physical requirements of farm life in Canada must also be considered as relevant background context (representing how participants’ personal and social history influence their PA participation) when describing the physical activities that participants in this study report.

Finally, since many participants got married and raised their families prior to, or during the early years of Second Wave Feminism, most did not feel the need to balance a professional career with their life at home in the way that many women do today. Perhaps as a result of this social context, many participants described significant past and current involvement in household tasks that constitute substantial PA on a daily basis that may not be practiced by many younger women today (e.g., growing, harvesting and preparing food ‘from scratch’, engaging in heavy household cleaning such as scrubbing floors by hand, hand-washing, wringing and/or hanging laundry on a clothesline, etc.), while also providing fulltime care to multiple children, and being involved in local or community groups and events. A number of participants also described building their own houses. While a full life-course qualitative analysis (O'Brien Cousins & Vertinsky, 1995) has not been conducted for this study, this brief introduction is intended to provide a general overview of the social context of the participants in this study.

Health in the Context of Living with CVD

The word ‘health’ or ‘healthy’ was used frequently during my interviews with participants, as they described their everyday lives and activities following their experience of a cardiac event. In order to understand how participants conceptualized the notion of ‘health,’ or the state of being ‘healthy,’ I explicitly asked what these terms mean to them. Participants’ definitions reflected the broad concept of health defined by the World Health Organization, because the mere absence of disease did not constitute health for these women, although some participants juxtaposed their concept of health with recent experiences of illness.

4 “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity,” (Official Records of the World Health Organization, no. 2, p. 100).
More often, participants described being ‘healthy’ as a resource that enables them to do the things that they want to do, and to live an active life.

Participants’ descriptions of being ‘healthy,’ which includes among other things, the capacity to lead an active life, to get enough rest, and to avoid illness, is sometimes confounded by their own (or other’s) notion of what is considered part of the ‘normal’ aging process which they perceive to be associated with a general ‘slowing down’ of the pace of their lives and how much energy they have on a daily basis. The finding that age, in and of itself, may contribute to the slowing pace of one’s life has been previously reported in the literature on older women with CVD (Husser & Roberto, 2009) and multiple chronic health conditions (Roberto et al., 2005).

Participants in this study described particular incidents and experiences when they did not feel ‘healthy,’ but were unsure about whether these feelings should be attributed to the fact they are aging rather than to being in suboptimal health.
MWHN126MP: Well the only thing that I ... don’t do that I know I should do [to be healthy], and I don’t know whether it’s my age, is get enough sleep. I go to bed ... anytime between 11 and 11:30[pm], but I’ll wake up at 4:30, 5:30[am]. And I might doze off but I don’t have a good sleep… I never used to be tired, but I find sometimes I’m tired now.

A lack of social comparators (e.g., being able to compare their experience with health as they age to other friends’ experiences) makes it even more difficult for participants to know what is expected in terms of health at a particular age. One participant described that she did not know what healthy aging should entail.

MWHN061AD: You have to work harder at staying healthy. And then you’ve got an age factor here. I don’t know what you’re supposed to be like at 82 [years of age]… I don’t have a friend that’s in the[ir] eighties; they’ve died off.

For another participant, her experience with health professionals not attending to her concerns about her health suggested to her that they were unwilling to address her concerns since they figured they were a natural correlate of aging (for example, developing osteoporosis, arthritis or CVD).

MWHN010MD: I find that [the issue of age] constantly comes up...I’m being told [by health professionals] that it’s because of my age [that I’m experiencing issues with my health], so I should just accept that fact... I don’t [accept that]. And if that’s what they are suggesting, I don’t feel that’s fair... If we’re going to live longer, then they should strive to help us live [a] healthier and ... a more satisfying, mobile ... life. [They should] not say, “...it’s your age.”

Not all participants viewed this attitude among health professionals to be negative, however, as the following participant described with pride a conversation that she and her husband had with their family physician.

MWHN095ME: [My husband and I were visiting our family doctor and] were having our chat. [My husband] says, “Do you think we’re very healthy?” She says, “You better believe it!” She says, “At your age, you’re healthy.”

Nonetheless, the notion that one is ‘healthy for one’s age’ seems to imply that there are (or should be) different expectations for one’s sense of ‘health’ depending one’s age. Not all participants were comfortable with this approach to defining health in the context of one’s age, however, as opposed to considering health a universal state or feeling of wellness that all individuals should experience regardless of age. The focus of health professionals and others on women’s age, rather than on the chronic health conditions (including CVD) with which they live, has been noted by other researchers as a common experience of older women with chronic health conditions. Roy and Giddings (2012) conducted focus groups with nine women aged 65-74 years living with a long-term health condition (MS, arthritis, diabetes, CVD, or asthma), who described how other individuals, including health professionals, often assumed their symptoms
and physical limitations were attributable to their age rather than their health condition. They identified this common experience and overarching theme as, “living with a long-term condition in the shadow of ageing,” (Roy & Giddings, 2012, p.184).

Just as a lack of disease did not play a central role in women’s concept of health, the ways in which they described their cardiac event(s) reflects the notion that participants did not perceive themselves to be ‘at risk’ of developing CVD, and the words that they used to describe their heart attack or cardiac event (as an incident, or ‘glitch’) seemed to minimize its importance in their lives. In contrast to the notion of CDM, which suggests that CVD management should enter and affect all facets of one’s life, participants’ description of their cardiac events seemed to contradict the common notion that they now live with a chronic disease, and that it should influence how they live their daily lives and engage in activities.

MWHN064PG: [In] 2007 I had my last ... glitch. [I: What do you mean by that?] Well it’s my heart attack, I suppose. [I: So you had one heart attack?] Three… My first one was in ... ’95… and ... they did an angioplasty but they didn’t put a stent in. Then my next one was in 2005, and then I had ... one stent. (pause) Did I have one stent? Anyway... and then I had another one in 2007 and they put ... I can’t remember whether they put two or three [stents] in. Anyway, I’ve got a few [stents] in [my heart]. …It NEVER even occurred to me that I would probably have another heart attack. So maybe I’m stupid, but ... (laughing) ...I just go on as usual... It doesn’t ... make any difference to me, at all… I think I was very fortunate ... that ... my ... my glitches, as I call them, were caught very quickly. I mean I ... I phoned the ... the ambulance myself and they were here in about ten minutes.

MWHN126MP: I was trying to think the other day. It was December ’08 that I had my scare, and it was- so it was early 2009 that I went in [hospital]… I think it was February, I had two stents put in. And I didn’t even ... I didn’t even feel scared about that. [I: Why didn’t you feel scared?] I think because I was under doctors’ care. Cause I ... I ... I was shocked when I first found out that it was something that ... something wrong with my heart. Cause I never thought I would have a heart condition, because I’d always been busy. I’d always been active. I was ALWAYS active. So I- and I always felt good. So I NEVER, never thought I would have a heart condition… But I wasn’t scared. And I don’t know whether it was the [heart hospital] people made you feel that way [not scared].

The lack of centrality of CVD in women’s lives, despite the acknowledgement by participants that they had experienced a cardiac event, reflects the findings of previous qualitative studies that suggest that older women with multiple chronic health conditions have a holistic concept of their health, and do not consider the individual effects of each health condition on their health (Husser & Roberto, 2009; Roberto et al., 2005). Another explanation for participants’ consideration of a cardiac event as a “glitch” may be that participants are ‘contesting their coronary candidacy’ (Angus, 2008). That is, given a lack of physical symptoms and/or functional impairment associated with a diagnosis of CVD, individuals may refuse to accept their ‘candidacy’ as a ‘coronary patient’. Angus argues that another issue contributing to this ‘contesting of coronary
candidacy,’ is the obligation to modify one’s CVD risk through lifestyle changes that are often abandoned in the long term, given the many potential personal and social contextual challenges and constraints that may affect the maintenance of these lifestyle changes (Angus, 2008; Angus et al., 2009).

It must be also considered that these participants appear to have had access to timely, effective and high-quality care at the time of their heart attack, and this may explain their feelings that it was not a major event that significantly affects their daily lives. The following participant’s emotional account of her heart surgery also suggests that when she considers the alternative (that is, not having access to timely and effective care), that her life may have changed forever following her heart attack.

MWHN114JT: It just I think ... I think ... I don’t know why I wasn’t nervous about getting it done. I went there and they just put me out, you know, almost out. Because you can ... I couldn’t see anything, but I could hear them, you know, and we’re only going to give you enough to make you ... just go under like, you know, and I could hear them talking and all that stuff. I was not nervous one minute. Now you tell me why?... I don’t know why... I wasn’t nervous... I felt confident that nothing was going to happen to me. Now is that silly? I don’t know...I think maybe ... I’m going to cry… Turn that [tape recorder] off…[Participant takes time to gather herself after becoming emotionally upset. Recording resumes with permission]… I wasn’t nervous. I was not anything. I don’t know why. I have no idea. I mean cause I know very well going into the heart, anything can happen... But I was really confident and I ... came out and I stayed in overnight and [my husband] picked me up the next morning...

During the interviews, I gained further information about the non-CVD health conditions that participants live with, mainly through their descriptions of their health practices (e.g., taking prescription medication, monitoring their blood sugar or blood pressure, etc.), since they did not explicitly identify these conditions. When I asked them directly whether they live with any long-term health conditions other than CVD, most responded by saying, ‘No.’ When participants did refer to having other health conditions, they often used modifiers in their descriptions of these health conditions, saying for example, that they have ‘borderline diabetes,’ ‘a bit of arthritis,’ or that they ‘had’ high blood pressure or high cholesterol levels, but now that they are on medication, that these conditions are ‘okay,’ and do not affect their daily lives.

MWHN203MR: [I: Do you live with any other health conditions?] Oh I have a few creaky joints. (laughing) [I: Nothing clinical like arthritis or-?] Well I have- oh, I have arthritis in my fingers and hands and ... Nothing that’s really debilitating. [I: How does it affect your everyday life having the arthritis in your hands?] Not really that much. I have a little trouble opening jars, but I have a really nice gadget in my- under my counter, you know… No, I’m adapting to that quite well… And sometimes it’s fine.

MWHN126MP: [I: So what other health conditions do you live with other than your heart condition?] I’ve got a bit of ... arthritis. And I’ve had it for a long time. I’ve had it since I was probably ... my
early forties. Maybe even thirties. But it doesn’t- that doesn’t bother me too much. I mean my feet and my hands are sore, but they’re not ... consistently. Just when damp weather comes. And I have a thyroid problem, but it’s not a bad one. It’s controlled with medication. [I: So the arthritis and the thyroid issue, how do they affect your day-to-day life, if at all?] They don’t really...The arthritis, I might get up and my feet are sore; or my hands are sore. But then once I get moving around they’re ... they’re ok. And ... the thyroid, no, it’s under control with the ... with the medication. And the only other- well I’m on high blood pressure, but that’s connected with my heart, so ... And I’ve been on it quite a long time. But ... it’s controlled with the medication.

In the case of arthritis, however, the acute flares and periods of remission may account for some participants’ ambivalence in labeling arthritis a ‘chronic’ health condition: this was different among participants who experienced severe and chronic pain as a result of arthritis. The following participant described not only how arthritis affects her daily life, but also how a recent diagnosis of osteoporosis was unexpected and upsetting since she felt that she was doing everything possible that would otherwise prevent such a diagnosis (i.e., exercise, eating healthfully, keeping busy).

MWHN010MD: I have arthritis, which I have had also since about the [1970s]. And ... [it is] quite bad in my hands and my feet, and in my spine. And then [as of a few weeks ago] I’ve recently been diagnosed as [having] osteoporosis. Which has upset me somewhat...because I felt I was doing all the right things. I was exercising. I was watching my diet, etc. I was keeping busy and ... therefore shouldn’t have this... [I: With the ... with the arthritis, you say that it’s quite bad. Can you describe how it affects you sort of on a day-to-day basis?] Well it ... it varies. I don’t know if this is how most people feel about their arthritis, but it seems to go in and out of remission. Sometimes my hands are so bad that I can’t do anything. I can remember driving with the palms of my hands cause I couldn’t ... grip with my fingers. And ... so it ...[the pain and impact on my life] varies a great deal.

Discussions with interview participants led me to the overall finding that being healthy was important to them, and that they viewed health, not merely as an absence of disease, but as a resource that enables them to participate in the activities that they want to do. Participants practice health-promoting behaviours that they feel contributes to keeping them healthy, but do not engage in these activities with the attitude or assumption that they are trying to prevent chronic health conditions or manage CVD per se.

The experience of a heart attack or significant cardiac event came as a surprise to many participants, but after receiving appropriate and timely health care, the notion that they now live with a chronic health condition (CVD) does not appear to play a central role in the conduct of their daily lives. Other chronic health conditions, such as diabetes and arthritis, were rarely described as affecting the lives of participants (with the exception of two women who reported severe pain from arthritis). Most participants reported that these conditions are not part of their daily consciousness, and their medical management (with the exception of taking prescribed
medication as appropriate) is not incorporated into their daily lives. This finding can perhaps be understood within the context of the findings of a previous qualitative study of women living with chronic illness. Although participants in a study by Kralik (2002) were typically younger women (aged 30-50 years), she described participants’ desire to reconstruct one’s ‘ordinary’ life, but now including living with a chronic illness. Women in her study also challenged the information, knowledge, and behaviours that were prescribed for them by health professionals, and determined for themselves what was acceptable to them within the context of their lives. At the risk of being labeled ‘noncompliant,’ these women reported regaining a sense of balance, control and empowerment in their lives (Kralik, 2002). Kralik and others (Kralik, Koch, Price, & Howard, 2004) have described this appraisal of information and subsequent decision-making regarding one’s actions within the context of living with a chronic illness as an alternative description of ‘self-management’. It is possible, however, that participants’ lack of focus on CVD and other health conditions on a daily basis results from the fact that these participants represent a healthy segment of the population of women who live with CVD, and having few other health conditions, are able to maintain an active and healthy lifestyle with few limitations imposed by their health conditions.

Women’s Perspectives on CVD Etiology

Health-promoting activities, such as being active and eating a sensible diet (alluded to by some participants in the previous sections), may have been adopted by participants in response to common messages and statements from public health agencies and health care professionals that engagement in these activities can promote one’s health. The implicit message of these statements is that the onus is on individuals to take control of, and to maintain their own health. An interesting finding that emerged from discussions with study participants, however, was that despite the fact that many women acknowledged the role of PA and diet in the prevention and management of CVD (suggesting that they are cognizant of common health promotion messages in the public domain), they often attributed their cardiac event to either a genetic predisposition to CVD (i.e., a family history of CVD), or having experienced a significant stressful life event (e.g., the premature death of a child).

MWHN069TP: [My husband and I] lost our youngest child to breast cancer at age 39. That was a very difficult ten-year period. It was after that ten-year period that I had the problem with my heart… I went to see [my family doctor] and I said, “I don’t know what’s wrong.” …I just wasn’t feeling good. [I] didn’t have any energy… She says, “It’s not like you.” And her comment at that time was, “You know [participant name], you’ve been through … over eight years of stress.” …She used this analogy
of Humpty Dumpty that had sat on the wall and has fallen off. Your whole life, normal lifestyle and you’re a busy, busy person… was interrupted. …And she said, “I just think you’re coming apart from stress. I think it’s more stress than anything else.” …[A little while later]… I had this [heart] incident… So I attribute [the heart attack] to stress.

**MWHN121CM:** After my daughter passed away [from cancer]… my son … was the guardian for my grandson. And … [he] and his wife lived [in another city]. He took it to heart so much… he thought he had to move back to [the city with us]. So … [my son and daughter-in-law] gave up their job[s]… [and] moved [here], bought a house and I moved in with [my grandson and] them. And it didn’t work out. It was very stressful… When I had my heart attack, my son said, “I guess the stress doesn’t do you [any good]…” [I: Why do you think you had a heart attack?] I don’t know. Stress I think… from living with my son and his wife. Well both my parents had heart problems, so … My dad died of angina. And my mother had a couple of heart attacks and then… a pacemaker… It’s stressful to lose a child. Because you never think you’re going to survive your children.

**MWHN283IB:** The doctor said I shouldn’t have had a heart attack. I personally think, with me… it is personal stress [that caused the heart attack]… I’ve always actually lived very healthy, but I ate too much fat because of my husband, because when he cooked his sauces they had to have cream… I think that’s what did it for me, plus the stress… The stress was the number one for me… My marriage … My disappointments… That’s my big problem. More so than the food… I’m sure even [if]… my veins would have been half blocked. If I [didn’t have] this … mental stress I wouldn’t have had the heart attack. I’m ABSOLUTELY sure of that.

**MWHN064PG:** [I: So what do you attribute your heart attacks to?] Well apparently it’s a buildup of plaque, but I’ve never had high blood pressure, and I’ve never had … high cholesterol. …[When I was in hospital, the physician] was bringing around interns and … and I asked him, I said, you know “Why is it that I don’t have high blood pressure, and I don’t have high cholesterol, and yet… I get heart attacks?” And he said, “Well we don’t know because it’s something in your genes that does that to you.”

Given the consistent view among so many participants that their cardiac event was triggered by genetics and/or stress more than lifestyle behaviours, it is likely that this perspective is one that they have developed based on their own experiences and beliefs. It is also possible that statements made by health care professionals, either contributed to the development of this perspective, or confirmed what participants already believed about the role of genetics and stress in CVD etiology.

**Experiences with Cardiac Rehabilitation**

Based on an analysis of interviews with participants, it is unclear whether health care professionals’ statements directly contributed to participants views about the etiology of CVD. What has been established by the extant literature on CR, however, is the important role of physician referral on patient uptake of CR (Ades et al., 1992; Grace et al., 2008; Missik, 2001), which I also found to be true based on my analysis of the survey data. This relationship was confirmed among interview participants: the five interview participants who reported
participation in CR (at the heart hospital, local hospital, or at home with telephone follow-up) had all received a referral from a physician or other health care professional to attend CR.

**MWHN061AD (retired nurse, attended CR at the heart hospital once, rural resident):** [I: How did you learn about [the CR program]? Did the nurses tell you about that?] Yes. They set you up before you [were discharged from the hospital]… When they gave me this [information binder on heart health], I filled in this form [to attend CR].

Interestingly, among the four women who reported participating in CR at the heart hospital, two are retired nurses and one is a volunteer at the heart hospital, suggesting that familiarity with a hospital setting may have supported their participation in hospital-based CR.

Some participants reported receiving a referral (or discussing the option of attending CR), but chose to not attend because they felt that they could engage in PA on their own, or in community-based settings. Issues related to transportation and parking costs also explain, in part, why some participants expressed a preference for community or home-based PA rather than attending CR.

**MWHN095ME:** [I: Did anyone talk to you about exercise or PA while you were in the hospital?] Uuum ... not while I was there. But I ... I could have gone back to physio after… [I spoke with a physiotherapist at the hospital about the CR program], but when she learned about my day she said, “Make up your own mind [about whether you want to attend], but…you have a pretty busy day.” …She said “Keep up what you’re doing, and keep on doing your walking.” She spent a whole hour with me, I told her my day…and she was satisfied… I really haven’t got time to, you know ... If she recommended [that I] go [to CR]… I would have gone to the clinic… I figure it’s better for me to walk outside in the fresh air.  You know I would have gone if I had to. [I: So you never had a recommendation to go to cardiac rehabilitation?] No.

**MWHN200MK:** [The health care professionals at the hospital] tell you that you can come down there and use their walking track and that kind of thing, but it’s a long [drive] in [to the city], and the parking down there will kill you, if nothing else. So…I elected not to [attend CR], because I didn’t figure I needed the track [to walk on] at that time.

At least four participants did not recall receiving a referral to CR. Their statements suggest that, in addition to a lack of referral, other issues contribute to their non-attendance at CR, including misconceptions about CR and who is eligible to participate, and health care professionals’ assumptions about their ability to participate (for example, as a result of living in a rural area and being unable to commute on a regular basis).

**MWHN007NG (rural resident):** [I: So you don’t recall anyone mentioning cardiac rehab?] No… Well I guess they mentioned something, but the thing is they figured the distance of having to go into [the city], which is an hours drive from here…would be a little bit much. [I: Did you think it would have been too much for you as well, or did you want to go?] Well ... I think with [having to do the] driving myself, I think it was a bit much too…

**MWHN121CM (urban resident):** [I: Did anyone at the hospital ever talk to you about cardiac rehabilitation?] No. [I: Did they talk to you about PA or exercise or anything?] No, I don’t think so…
[I was] never asked to go to rehab. I guess it’s more for people that have strokes or something and, you know, are paralyzed and ... Cause it wasn’t really that big a heart attack, but it was a heart attack, you know what I mean… [I: Did they give you any information when you leaving the hospital regarding, you know, either healthy activity or food?] I can’t remember. I don’t think so… When I went back to the cardiologist maybe a month after I was home, he seemed to be happy with me and said, “Well I won’t see you unless you have another heart attack.”

Most participants did not seem bothered by the fact that they did not receive a referral to CR, but one participant described that she was distressed when she learned that a program of rehabilitation existed for people with cardiac conditions, but to which she was not referred. This lack of referral made her question whether systemic discrimination based on her gender or age occurred in the referral process. Not knowing whom to contact to request participation in the program meant that, despite a desire to participate in a program of exercise following her cardiac event, she never enrolled in a CR program.

**MWHN010MD (urban resident, 81 years old):** [I: When you were in hospital did anyone talk to you about cardiac rehabilitation?] No…which is something that has ... sort of concerned me. Because I know other people who went in at about the same time for heart attacks and they were put through a ... rehabilitation program. I sort of wondered, “Well why wasn’t that offered to me? Is it because I’m female? Because I’m old? Or ... because they don’t think I needed rehabilitation?” And I never got an answer to that question. I actually haven’t had an opportunity to ask the question…. So I don’t know. Is it a ... question of space that they offer rehabilitation to some people and not to others? ...And I didn’t know WHO to phone. I assumed that the ... the cardiologist would pass on the names to the rehab people, but I assumed it was up to the rehab people [to contact me].

This participant did acknowledge that some consideration was made by the health care team of the types of physical activities that she was already doing: she is an active woman who engages in a structured program of activity on her own, in her home and by walking in her community. Her dissatisfaction was mostly attributed to the fact that she was not supervised during exercise, or given specific advice, or feedback about the type, intensity and frequency of activity that she should do following the cardiac event and surgery.

**MWHN010MD:** I was told that I should be able to do everything that I had ... was doing before my heart attack, but that I should work up to things slowly. So I wasn’t just left to my own devices. [The doctors and the team] had asked me what I was doing and I had explained… But ... I was sort of surprised that they didn’t ... sort of give me some kind of- I mean nobody looked at my exercises. Nobody said, “Come and do them and let us see what it is you’re doing.” They just sort of took my word for what I was doing and said, “Oh, that sounds ok.” ... And that has always surprised me…

Confirming what has been previously shown in both the quantitative and qualitative literature (Brual et al., 2010; Harrison & Wardle, 2005; Leung et al., 2010; Rolfe et al., 2010), of the ten participants who chose to not attend hospital-based CR programs, most did so because the programs were located too far from their home, involved gas and parking expenditures, or parking frustrations, and had restrictive class schedules.
MWHN2831B (rural resident): I thought what would have helped me tremendously, living so far out in the country, and living on a small income, I couldn’t afford to go to an exercise centre. I would have LOVED [to have gone to CR]... I saw the [program] in [the city] at the [heart hospital]. Oh, my tongue was hanging to the floor [with desire to attend]. (laughs)... I would have loved to go, but ... I couldn’t afford to go- [having to] drive to [the city] every two days...[a week].

Some participants did not attend CR because they felt that they could get the necessary exercise on their own at home, or in their community.

MWHN203MR (urban resident): [I: Was there a reason that you didn’t go to the hospital cardiac rehab?] Yes, because it’s a pain in the neck getting parking. And even getting in the parking lot at the [heart hospital], my, you know, you’re fighting to get in there...And I thought to heck with that. That’s why I wanted to go back to [municipal recreation centre name], that’s free parking, and it’s easy... I had my choice [about when to go]... And then I’d go and do my grocery shopping on my way home.

MWHN282JW (rural resident): [I: So when you were in hospital before you came home from having the stents put in, did anyone talk to you about cardiac rehabilitation?] Yeah, they said that I could come back there for classes... But ... I didn’t…I don’t know why. I guess, just the distance, probably. …[My husband and I] don’t go to [the city] any [more often] than we have to now… I felt I had enough here... I could tire myself out enough here. (laughing)... Between home and the activities around, you know, [in] the area… So ... I didn’t feel any need... to go.

Engagement in Health Promoting Activities Following a Cardiac Event

Whether or not participants reported completing a CR program either in hospital or at home, most women reported engaging in other health promoting activities following their experience with a cardiac event. Similar to the findings of other studies involving older women (Adamson & Parker, 2006; Pullen, Walker, & Fiandt, 2001), many participants reported following health professionals’ recommendations to follow a ‘heart-healthy’ diet, take prescription medication regularly, and monitor their blood pressure and/or blood sugar levels either on their own at home, or at a physician’s office.

During interviews with participants, their efforts to follow a ‘heart-healthy’ diet (low in sodium, sugar and saturated fat) were apparent. Women were eager to share and discuss the many changes that they made to their diets following a cardiac event. Given women’s traditional role in providing meals for their families over the years, and as a result, their familiarity with food preparation, most participants described their readiness to adopt heart-healthy dietary recommendations. If their spouse or other family members also lived with diabetes or CVD, this provided additional incentive for participants to implement changes to their diet.

MWHN069TP (married): I cook all our meals. We go out more frequently than we ever did in our lives, but...I prefer to eat-in because I can choose... how my food is prepared. I have to watch salt and fat and all those things… But treats are going out for dinner. And they’re more frequent than they
used to be… Because we can afford it. HOCKEY nights we have a pizza sometimes… [The grocery store does] an in-store [pizza]… that has a [nutrition information label] on [it], which is good, ‘cause I’m a real label reader… I look at the salt and I look at the fat, the saturated fat, and I think “Oooh, I love pizza, but, [I] gotta watch [how much I eat of] this.” I ALWAYS have been [a label reader]… because I’m a home cooker, I’m always [careful] of what I’m buying… and I look at salt, sodium, and I look at sugar… I didn’t look at those things so much… before I had my heart incident… But I always used to look to see how much fat… I never thought about sodium. I looked a lot at sugar, because my mother-in-law was diabetic, and she lived with us for a while, and I became very much aware of the diabetic diet and how healthy it was. So in cooking for her, I became aware of sugar and… fruits and vegetables, and how important they were.

MWHN095ME (married): I went to the [diabetes] clinic [at the hospital] when…[my husband] first found out [he had diabetes]… I went and sat with him for an hour and a half and this dietician would go through everything. And you pick up a lot of [information]…to help him…as well as myself… And a lot of things I’ve changed over to make the things [we eat] more healthy. The recipes that I got from the Diabetic Society, they don’t call for margarine or… or any oil. I use vanilla yogurt in the muffins. So you see that’s [one] way that I can get it into my husband, ’cause he wouldn’t eat yogurt plain… I just felt that it’s just better for everyone all the way around to have a healthy… diet.

How seriously the recommendation to follow a heart-healthy diet was taken varied among participants. One participant described how, after strictly adhering to the recommended diet, she lost a lot of weight and experienced significant muscle atrophy. Her physician had to recommend that she not follow the diet as strictly as she was.

MWHN283IB: I was almost anorexic. That’s because immediately after the heart attack they told me no fat and no salt. I was allowed to have two tablespoons, of vegetable oil, or olive oil, and two teaspoons, 2000 milligrams of salt. Well I stuck to it so exact that I... I weighted 102 pounds… And my doctor said… said “[participant name] it’s best you just forget that diet for awhile. Because it’s best that you LIVE, and have a little bit more fat. You’re listening to the doctors TOO strict.” You know, and it’s true. And my husband kept “You need more salt. You need some fat.” ... I lost all my strength in my muscles.

It has been previously reported that widowhood can improve the eating behaviours of older women (allowing women to focus on their own dietary needs), but for some older women who are widowed, living alone has a negative impact on their dietary practices (Payette & Shatenstein, 2005; Quandt, McDonald, Arcury, Bell, & Vitolins, 2000). We found the latter case to be true among our interview participants. That is, although participants who were widowed or divorced made an effort to follow dietary recommendations for heart health, they described the challenge that they face in cooking healthy meals to only serve to themselves. Some compared their current situation and poorer eating habits to when they were responsible for providing a family meal, and were better able to prepare a well-balanced meal.

MWHN010MD (lives alone, divorced): I’m on a gluten-free diet so I sort of cook most of my own cooking from scratch. Which means if you’re picking up fresh produce you have to shop more often, so I usually shop for groceries twice a week… [I] try to watch my diet. That’s the hardest problem… Because… when you live alone you get lazy and … it’s easier to make a sandwich, but it’s not healthier to make a sandwich… so it requires a bit of discipline.
**MWHN007NG (lives alone, widowed):** I try to eat properly… I try to…not eat fried food, although I do once in awhile… I try not to fry meat, or that. I try to boil it or something like that. Or…boil it, broil it or roast it… I like fruit, so I, you know, I try to eat quite a bit of fruit… They told us we should have flax… I think there was something in one of the papers I got from the [heart hospital]…about having flax, and you’re supposed to have some flax. Flax is good for you, for your heart. I’ve tried to buy the healthy breakfasts [cereals]. Now…you watch what you buy. These are $3.99, [and] they’re 700 grams… Some of those other [cereals] are only 400 grams and they’re $5-$6… I try…to get the heaviest packet for the least amount of money. Sometimes I know…my diet isn’t balanced enough. My dinner last night probably didn’t meet up with the health rules, because what I did was I had a nice dish of… fresh yellow beans out of the garden my friend had given me, and…a cucumber. But I did put a little bit of dressing on it, that fresh cucumber. And that…was my dinner…

It is possible that living on a lower income is partly responsible for the challenge of following a heart-healthy diet, however, the cost of purchasing healthy food was identified as an issue for some married participants as well.

**MWHN084RB (married):** I try to … to look for the healthier things, and you know you feel a lot better. I think we’re doing a good job of [following a healthy diet]… But we have to buy things that are on special… Cause the things are so expensive, the healthy things… [The message is to], “buy local and buy this and buy that.” Well give people a decent price on things… [When things are too expensive], that’s when… you throw caution to the wind and you just say, “Oh well, I’m not eating that way anymore.”

Other health-promoting activities described by women included taking prescribed medication(s), and regularly monitoring their blood pressure or blood sugar levels at home, or at their physician’s office.

**MWHN069TP:** But I take my [prescription medication for my heart] … I’m really conscientious …It’s become such a routine to take my pills I don’t even think about it. I get irritated because… I have little weekly [pill dispensers]: one for morning and for night… And they empty so rapidly that I realize how quickly my life is going by… It’s a marker of time, and… I really resent that. There was never anything in my life that…marked the days off like that. I feel like I’m a prisoner who is scratching [lines in] the wall… I get so mad and when I have to fill [the pillbox] again.

**MWHN095ME:** [My husband and I] went to our GP yesterday and I had a long chat with her. We just don’t go there for three…or four minutes, I think we were in there for 20 minutes. The only thing she had to do was take our blood pressure… But I always look forward to…seeing her… She gives us our list of pills and … gives me a [requisition] to get my blood work done… We ALWAYS keep those appointments because it’s so important for our health.

The instrumental role of confidantes (family members, friends) that has been described by previous qualitative researchers (Moremen, 2008), in terms of supporting women’s health behaviours and decisions, was confirmed by participants in our study. That is, having discussed their concerns regarding their medications (type or dosage) with their friends or family members, a number of participants felt compelled to contact their physician, for which suitable changes were made to their prescription to prevent further discomfort or concern.

**MWHN203MR:** I was having some crummy symptoms… Actually I went to the doctor finally, [and] I said… “You know, something is screwy here. I can’t tolerate all [these medications].” …And then
she cut back on some of the [medications]... I was having leg cramps and so I went to the drugstore and I asked the pharmacist is there anything I could take that wouldn’t conflict with all this other medication, and...she looked at it all [and] she said, “Well it’s the [drug name] which is probably giving you the leg cramps.” So that’s when I called my brother [who had a similar heart condition] to...see how much he was taking. So...I did get that [prescription] changed. So then the doctor said, “Well ok. We’ll try you on [drug name].” Well I took that for about a week [and] oh, man! It was awful, so I [said]. “Forget it. I already suffer with the leg cramps...And I felt nausea and diarrhea and bloating and gas, you name it... You have to be aware. I mean I don’t just follow the [rules]. I mean I don’t just say... “Oh, gosh, this is what they’re giving me and I’m going to take it.” If I’m having strange reactions [to a medication] I think, “This is ridiculous,” [and ask for it to be changed].

Despite the fact that many participants felt able to contact health professionals such as pharmacists, cardiologists and other physicians for advice, or to make changes to their prescription medication, only a few women in this study reported that they would (or would like to be able to) contact a health professional for advice regarding safe or appropriate PA participation.

MWHN010MD: [I: So where would you like to receive…information regarding exercise?] (pause) Well that’s a hard question, ‘cause I would be inclined to say through the Internet, but then you get so much there, you have to sort through it all and find out what’s valid and what’s really useful for you, so that...becomes very time consuming... I also think there could be more information in a doctor’s office and... I wish doctors were more interested in diet and exercise... They don’t tend to recommend exercise as a treatment. Now they have done that with my latest diagnosis of osteoporosis, but prior to that- and I have asked doctors in the past, “well, what about my diet?” or, “what about my exercise? How is this contributing to the problem?” and they would just sort of... [shrug] it off, you know. [They were] more inclined to give you a pill.... I haven’t found that doctors were a very good source for ... information concerning exercise. Physiotherapists are [a] better [source for this information].

Even though these participants felt that they should be able to receive information or advice regarding PA from health professionals, none of the participants reported ever asking health professionals for this type of advice.

It is likely that participants’ hesitation to ask their physician for advice about PA results from their impression that physicians are time-pressed, and are unable to spend time discussing health-promoting activities beyond monitoring blood pressure or sugar, and managing their medications. The following quotations provide evidence that this may be the case.

MWHN018LL: [I: Do you ever talk to your physician, whether that’s a GP, or a cardiologist about your activity?] No... Beause they don’t have time: they give you 15 minutes... I went in... last week one day, cause I hadn’t been in [for a while], and I take ... a quarter of a pill for my blood pressure. [The doctor] said, “Your blood pressure is up,” he said, “Maybe I better increase [the dosage of your medication].” So that’s all he did was take my blood pressure, and ask me a few questions; how I was feeling, and that. That was it.

MWHN061AD: They put me on [cholesterol-lowering drug name], 80 milligrams. It’s high: it’s the maximum dose. I was on it for three years, and now I’m trying to get off it... because I’ve got a [drug name] cough. It affects your muscles, my legs get sore, and it also affects your level of activity. I get fatigued when I don’t think I should... I talked [my physician] into ... cutting [the dosage] in half, to
40 milligrams... I go this month and get another blood work done for cholesterol, and see... if it’s stayed the same, then I’m going to see if I can [reduce my dosage further].... [My doctor] seemed very hesitant to go against the ... the [heart hospital’s prescription], and I didn’t want to phone [the heart hospital team], because ... [my family physician is] supposed to deal with me now. And I really didn’t feel that I SHOULD take up [their] time doing that… (sigh) Just ... because. When I came out [of the heart hospital] and [the] doctor said, “Well, you know, I’m your cardiologist. I’ll always be your cardiologist, but I don’t want to see you again,” ...it put me off… [So I thought], I won’t bother him. I’ll go to my doctor, she’s very nice...But 80 milligrams is a maximum dose! …[I: I: Have you asked your doctor about [PA or exercise] ever?] No… Because they have no time, and if I went and said, “What do you think I should do for exercise?” …I could just see [them saying]... “Look, go and ask your...” somebody else.

Whether or not time restrictions during physician appointments actually account for participants’ lack of discussions about PA or diet as health promoting activities, it appears that some participants compartmentalize health-promoting activities into those that require medical-management (i.e., prescription medication, blood pressure and blood sugar monitoring) and those that can be self-managed (i.e., PA and diet).

MWHN203MR: [I: Where would you go for information regarding what activity you should be doing?] I did speak with my family doctor, and she would say “You could do this, or that.” …She’s great… Actually... I guess we didn’t discuss anything specific... I always felt free to ask her questions about anything that was bothering me, and if I had anything strange going on I would always call her. And yet I don’t run in and out of her office at all. [I: So she never gave you specific exercise instructions?] Oh no, no, no. [I: Or activity instructions?] No…I guess it wasn’t too organized. I was sort of on my own. I mean, I’m sure I could have inquired and done more, but ... it made sense. As long as you’re moving [that’s good], and if it hurts, then quit. (laughing)...That’s your body telling you that...either you’ve hurt something, or you’re overdoing it.

MWHN126MP: [I: If you wanted information on PA, where would you go for that?] There’s so many ... [places to go for exercise] out there now. I think you just have to research them and ... decide which ones you wanted to [go to].

Interview participants’ experiences of receiving very little advice or specific instructions on how to engage in PA or exercise while living with CVD reflect not only our survey results, but the findings of a recently published Canadian report (Canadian Institute for Health Information, 2012) in which women with CVD were more likely than their male peers to report ‘generally not,’ or ‘almost never’ being asked to talk about their goals in caring for their condition, or receiving help from their primary health care provider to make a treatment plan, receiving a written list of things to do to improve their health or being shown ways to take care of themselves.

Whether participants simply did not seek, or sought but did not receive information related to PA (aside from general advice to gradually resume their previous level of activity), they were forced to use their own judgment regarding activity or exercise following a cardiac event. Some
participants described the process that they went through to slowly reestablish their previous activity level following a heart incident.

**MWHN010MD:** [I: Were there any changes [to your exercise program] that you made after having the heart attack?] I don’t think there were any major changes. It took a while before I got back up to [the level of exercise] I was [at] before [the heart attack]… [I: At what point [after the heart attack] did you resume your exercise program?] After six weeks… [During that time] I started relatively quickly to sort of taking short walks… That’s when I started walking in the park… There’s lots of trails all around here. [Before the heart attack], I would go a different one…every time. [I switched to walking in the park], initially because it was sort of closer to home. And since I was supposed to be gradually working up, it took a while before I was back up to where it was a brisk walk [like I would take before the heart attack]… I was told to be cautious. I was told that I should be able to do everything that I had … [been] doing before my heart attack, but that I should work up to things slowly.

**MWHN018LL:** [I: The exercise that you do every day now, were you doing that before you had the heart attack?] Yeah. [I: Did it change when you came home from the hospital in terms of what you did?] Well no… [The team at the heart hospital] said …”be quiet for a week.”…I didn’t stay in bed, I was up, but I didn’t do anything…like I didn’t scrub the floor or anything… [I: How long before you got back into your normal routine of [exercise]?] About a month.

Two participants expressed how their motivation to regain and maintain their prior PA level or routine following their heart incident increased, mainly out of a desire to prevent another heart attack.

**MWHN061AD:** It’s quite a thing, you know, to suddenly not feel whole. [When] you feel whole, your body is whole; your heart, everything is good. …Now my heart is not whole anymore. And so … it is something that makes you feel...[like] parts of you are not good anymore. I feel as if I have to be careful with my heart. I have to eat healthy. I have to exercise. Before [my heart attack], I never did that. [For someone who hasn’t had a heart attack]…it’s not imperative that you do [these things]. [I do them now] because I don’t want these stents to block up again… I have to [exercise and eat healthy].

**MWHN010MD:** I just became a little more conscientious about doing [my exercise program]. I wasn’t as inclined to say, “Oh, I don’t feel like it.” If the weather was good I was going out for my walk, because I didn’t want to have another heart attack. And so … so I guess I became a little more serious about it [exercise program]. Whereas before it was just something that … you should do. But … if you missed [it], it didn’t matter.

For other participants, their experience of a cardiac event compelled them to adopt a more rigorous PA routine, and in one case, to quit smoking. However, not all of these health-promoting activities were maintained over time, suggesting that participants’ motivation to become more active was generated in part by fear of another cardiac event, and the desire to follow their physician’s advice during the recovery period following a heart attack.

**MWHN069TP:** [After the heart incident] I followed my booklets [from the heart hospital about diet and exercise]. I still have them, [but] I haven’t looked at them for months. [My husband and I] bought a treadmill… and … that was my walking. [I: When you think about your life before your heart incident, and after, did you do anything different? Did you change anything?] Well, for a while I was afraid to do things. I knew I had to get exercise. I knew I had to walk. And then when winter came [my family doctor] said, “I don’t want you walking out in the streets in the ice.” Because I was walking locally. She said, “No, it’s too dangerous…You get a treadmill and you walk in your house.” And I
said, “All right. Yes, [doctor]. I want you to take care of me.” (laughing) But ... I was ... I was nervous about myself. I’d walk up the stairs very carefully, and I [would] think, “Do I feel anything different?” But I soon got out of that and just started to pick up and ... have a normal life.

**MWHN200MK**: [My husband and I] just decide we’ll go for a walk, so... we do three and a half miles up around the back and out the houses, and everything... I did a lot more of three and half mile [walks] after I had my heart attack. Now I only do about two [miles].

Thus, despite being motivated to adopt and engage in a structured program of exercise following a cardiac event, the likelihood of participants sustaining this PA appeared to be largely determined by their previous PA level. This finding contradicts our survey results, but does reflect the published quantitative and qualitative literature (O'Brien Cousins & Vertinsky, 1995; Petter et al., 2009; Sherwood & Jeffery, 2000). That is, by and large, participants who were active and engaged in a structured program of PA or exercise prior to experiencing a cardiac event were able to gradually return to their previous activity level without much guidance from health professionals.

A few participants reported that experiencing a cardiac event did little to change their engagement in health-promoting activities, and others still, felt it necessary to reduce their level of PA following their cardiac event or surgery.

**MWHN282JW**: [I: After you had your heart attack did you find that you did different things differently afterwards compared to before?] I would say so: I did more activities before. Like bowling and…’d shovel snow or that, but I don’t do it now… I’m scared… I just don’t want to end up in a pile… I don’t need to shovel snow… I miss [bowling] - I miss the girls. I miss the girls more than the bowling, but ... anyway I ... decided it’s best [to] not [do these activities]… [There’s] no need to drive up there [to the bowling alley]… and then start throwing these balls and ... tire myself out.

**MWHN114JT**: [I: Did you do anything different after you found out about- or after you had the stent put in?] I don’t think it held me back on doing anything. [I: Did it make you do anything more of anything, or make any changes in your lifestyle?] No I don’t think so. I don’t think I made any changes.

**MWHN007NG**: Well I used to go out [cycling]…at 7:00 in the morning… I’d be gone…nearly two hours... cause it’s five kilometres, but I’d go over there and then I’d bike and I’d have a break… and then I’d come back again…I used to do [that] practically every day… but then ... I stopped… I think after I had my stent in for a while, I didn’t do that exerting [type of] exercise... I think I’ve slowed down, and I’ve had a hard time getting back up into gear... I just didn’t have the energy [after the heart incident].

A reduction in older women’s recreational PA following a cardiac event has been previously presented in the literature (Husser & Roberto, 2009). What is worth noting from the previous participant discussions, however, is that three participants discussed having less energy for PA. This finding confirms our survey result that a lack of energy for PA is a predictor of current PA participation.
In summary, women who attempted to initiate a program of activity following a cardiac event that exceeded the activity that they typically performed prior to the event seldom maintained this increased activity for more than a year following the event (most participants were interviewed at least one year post-event). Statements made by women indicating that the cardiac event did not lead to any changes in their activity level, or led to a reduction in their level of activity, suggest that for these women in particular, receipt of instrumental support from health professionals may be critical in encouraging them to safely engage in PA following a cardiac event. Since many of the participants in this study did not attend CR and (based on qualitative analysis of interviews) may not conceptualize exercise and diet as health promoting activities requiring medical guidance, there is a pressing need to develop alternative methods of providing support for these activities within women’s communities. The following brief section proposes one such way to provide this necessary outreach to older women living with CVD in both urban and rural communities.

**Community Meals as a Possible Entry Point for Health Promotion Programs for Older Women**

In this chapter I have presented a range of participants’ perspectives on health, health-promoting activities, and their experiences with CVD and CR. My analysis of in-depth interviews with women revealed that women consider their health to be (i) important, (ii) not entirely defined based on the presence or absence of health conditions such as CVD or diabetes, and (iii) a resource that provides them with the energy and stamina to lead a full and active life. Participants’ experiences and view that genetics and stress are major factors in the development of CVD may help to explain why some older women with CVD do not adopt (or maintain in the long term) a structured exercise program as a health-promoting behaviour. A propensity to take up dietary recommendations as a health promoting practice was noted among participants. This inclination towards dietary modification may result from women’s social role of provisioning for others, for example by cultivating and preparing food for family members, or ensuring that their spouse’s health conditions are managed by particular dietary practices (e.g., eliminating sugar, salt or fat for a spouse with diabetes or CVD) (Sidenvall, Nydahl, & Fjellström, 2001). The following section will explore how the sharing of food and meals is a major driver of women’s community engagement, and how consideration of this key element of women’s lives can be
used as a means to provide older women with CVD information about, and opportunities to engage in other health-promoting activities such as exercise.

Many participant interviews involved lengthy discussions about food, dietary changes following a cardiac event, eating and sharing food with family and friends. Based on quotations from women in the previous sections, I also suggest that, more so than the adoption of new exercise practices, women readily take up and incorporate the messages that they receive about following a heart-healthy diet after experiencing a cardiac event. The centrality of food preparation, sharing, and cultivation (particularly among rural residents) in women’s lives emerged during the conduct and my analysis of interviews, despite few prompts from me as an interviewer.

**MWHN282JW (rural resident):** We used to grow our garden...[with] enough vegetables for the winter as well as the summer. And but ... I had to give that up. Like I did that a few years ago... My health was deteriorating probably. But ... no, I just found it wasn’t worthwhile. That I was getting lots of ... given to me from the other- the children have gardens, and they were bringing me baskets of things. And I hated to give it up. In fact I still have six tomato plants planted behind the house in the flowerbed... I get enough tomatoes for the summer and the winter... I freeze them for the winter. But I get enough out of those six tomato plants... I just cut them up... Then I put them in the freezer. They’re great for soup in the winter, or ... for spaghetti sauce, or for, you know. But I use them up that way. If I get too many for the summer I just freeze them. (I used to grow) a little bit of everything... Things that my children weren't growing [in their gardens]... [My children would tell me,]...“Don’t put in [this vegetable in your garden], because I’m going to have too many,” ...[like] tomatoes, cucumbers, butterbeans, and...carrots... We don’t bother [planting] potatoes cause [my children] grow them by the bagful.

**MWHN061AD (rural resident):** I've a lways [cooked] all our own food [and] use vegetables from the garden all summer. I plant a vegetable garden. I really like doing that... Somebody said to me, “Why have you got so many tomato plants?” I said, “Because one day a lady [from the garden club that I belong to] came up here... and said, “Can I have some of your tomatoes?” ... So we got three ... bags and put these tomatoes in, because I have more than I can use... She said, “I’m going to take them to the soup kitchen...I have a friend there that makes sandwiches.” So I said, “…Feel free. Come ‘til frost comes; you can have all the tomatoes you want here...cucumbers and whatever is there, you’re welcome to it.” So the garden is big, but it’s mostly given away.

The following quotations suggest that if a meal or food is offered at a community event or informal gathering of friends, participants are more likely to attend. Impetus for their attendance may stem from participants’ desire to be freed from having to cook a meal, be able to contribute to a meal that would serve others, to access a low-cost meal, or to just try new foods.

**MWHN007NG (age 81, lives alone, rural resident):** I go up here to the seniors [support centre] in the village... They have a seniors dinner once a month and ... Actually [a physician from the heart hospital]... came down...one time and talked to the people...[about his] research... Three times a week, Monday, Wednesday and Friday you can go there for dinner. I think it’s $6 and you get a nice dinner... For six bucks I’d rather go there than cook a meal.

**MWHN203MR (age 84 years, lives alone, urban resident):** I’ve been going to an exercise class with a couple of my neighbours. It’s something that has just started... It’s promoted or subsidized, I
Based on information generated from interviews with study participants, I would suggest that programs or centres that offer women and their spouses a low- or no-cost meal are more likely to be attended by older women. Such a venue offers the potential to provide older women living with CVD information about health-promoting activities (e.g., diet, exercise) that they may not otherwise receive through traditional physician visits where time pressures, or other barriers may impede the receipt of this information.

In addition to getting information to women about how they may improve or maintain their health while living with CVD, this approach may also address key social issues that can impact women’s health, such as loneliness among women who live alone, and access to healthy foods for women on a low or fixed income (Payette & Shatenstein, 2005; Quandt et al., 2000). This approach may also enable the provision of supervised exercise classes, and/or opportunities to teach women how to choose and prepare heart-healthy foods and meals. Given older women’s conceptualization of PA and diet as being health-promoting activities not requiring medical management, and preference for services offered in their communities, it is possible that greater participation of older women living with CVD may occur in such settings compared to their low participation in current hospital-based CR programs (Benz Scott et al., 2002; Parkosewich, 2008).

Discussion

In my analysis of interview data I suggest that participants’ definitions of health reflect a broad concept of health beyond the mere absence of disease, and that, for these women, health is a resource that enables them to do the things that they want to do, and to lead an active life. This finding confirms the qualitative work of Conn (1998), who found that among older women health was conceived of as “a resource that enabled them to be physically active [rather] than as a benefit of physical activity,” (p.376). As suggested by the survey results, interview participants prioritize and engage in a number of health promotion practices, including taking enough activity
and rest, eating healthfully, avoiding stress, and engaging in positive social interactions. This perspective, and the health practices described by participants in this study reflect the findings of other qualitative researchers on the health promoting behaviours of older adults (Adamson & Parker, 2006; Arcury et al., 2001). Arcury et al. (2001), for example, found that older adults define health holistically and embedded in their everyday lives, involving physical, mental, spiritual, and social aspects. In light of their findings, the authors concluded that health care providers should not assume that older adults necessarily share their interpretation of general health promotion advice (Arcury et al., 2001).

My analysis of the interviews revealed that participants acknowledge their personal agency in maintaining their health through health promoting practices, but primarily attribute their experience of a cardiac event to genetics and/or a stressful life event. Other qualitative researchers have also found that older women attribute their experience of a heart attack to stress, and importantly, that their participation in CR is influenced by their beliefs about CVD etiology (MacInnes, 2005). This finding is important, as a systematic review with meta-analysis of the quantitative research on illness perceptions among cardiac patients has confirmed this theory, by documenting a positive correlation between patients’ perception of control over CVD and their CR attendance (French, Cooper, & Weinman, 2006). Further evidence of the importance of understanding older women’s beliefs and needs related to the management of CVD, can be found in the results of a recent and novel study that reported, that within the area of rehabilitation involving individuals living with chronic illness, there is frequently a lack of congruence between health care professionals’ treatment goals and patients’ preferences for self-management (Nagl & Farin, 2012). As Conn (1998) suggests, health promotion initiatives could be made more relevant to older women by recognizing the difference between their traditional approach (attempting to attract individual women based on reported health benefits of PA), and the ways in which older women actually conceive of their health and PA. Incorporating older women’s concept of PA as a resource that enables their social engagement may result in a more effective and relevant placement of PA and health promotion programs within women’s natural social groups, such as volunteer organizations, and church groups (Conn, 1998).

I found qualitative evidence of the survey finding that women’s CR attendance was related to their receipt of a referral, and that factors related to health care providers’ perceptions about participants’ ability to travel for CR influence the provision of a referral for CR in spite of an
automatic referral strategy being in place. Many participants seemed to be unclear about the reasons why they were not referred to, or why they did not attend CR, suggesting further that receipt of a referral to CR does not appear to be indeed ‘automatic,’ particularly for eligible older women.

When faced with health challenges (such as pain or fatigue), participants were confused by whether these problems were a result of aging, or an actual deterioration in their level of health. When health professionals attributed their health concerns to the fact that they were aging, some women felt that they received suboptimal care. This qualitative finding, in addition to participants’ reported experiences of having a restricted amount of time to discuss their health concerns with their physicians, confirms the survey results (a lack of support from physicians for PA), the findings of a recent Canadian report (Canadian Institute for Health Information, 2012) on the experiences of Canadians with chronic health conditions, and a qualitative study on the experiences of older women living with a chronic health condition (Roy & Giddings, 2012).

The solution to the issue of physicians providing insufficient support for older women’s PA is complex, since physicians are unlikely to be able to increase their appointment times, and more importantly, may not have the expertise in exercise prescription necessary for this population. Since survey respondents and interview participants reported that their physician was their primary resource for PA information, greater effort needs to be invested in either situating exercise specialists (physical therapists and/or kinesiologists) within existing family practice units (where women visit their physicians), or within the community in such a way that older women with CVD receive guidance on PA without the need for physician referral. Given that most women in this population are not likely to seek this specific support on their own, the suggestion to incorporate such information and programs within a community-based program involving a low/no-cost meal for seniors may be a viable venue for PA support provision. Some examples of organizations that could offer such a program within Canada include the Active Living Coalition for Older Adults (http://www.alcoa.ca), the Canadian Centre for Activity and Aging (http://www.uwo.ca/actage/), and the Canadian Association for the Advancement of Women and Sport and Physical Activity (http://www.caaws.ca). As one Swedish study on a support group for older women with CVD has suggested, for such programs to be successful there is a need for a shift away from a (traditional) model of knowledge transfer of information from health care professionals to older women, to one in which knowledge exchange is
prioritized in order to understand and provide the information and support needs of older women (Hagberth et al., 2008).
Chapter 7

Introduction

With the knowledge that most women do not attend existing CR programs (Benz Scott et al., 2002; Parkosewich, 2008), and that non-leisure time PA is rarely included in studies of women’s PA participation (Oguma et al., 2002), the aim of this chapter is to explore what older women with CVD do in terms of PA, either as planned and structured (i.e., exercise) or incidental (i.e., part of everyday life) activity. In my qualitative analysis of participants’ interviews I offer a rich description of the activities in which older women engage and prioritize, and in so doing, extends our understanding of how incidental PA is fitted into their lives in a meaningful way of maintaining their health.

I will begin this chapter by presenting the notion that, regardless of their objective level of PA participation, most participants described themselves as being busy and active, and that they are satisfied with their current balance of PA and planned periods of rest. Importantly, for this group of older women, these planned periods of rest serve to pace them through their daily activities. Following this, I will describe in detail the planned and structured activities that many women described that could be defined as exercise; that is, planned, structured, repetitive activities performed with the goal of improving one’s overall health and level of fitness (Caspersen, Powell, & Christensen, 1985). In order to better understand the desirable contexts of women’s participation in planned PA, I will briefly describe where and with whom participants prefer to participate in their activity regimens. Detailed description of participants’ activities related to walking for transportation, gardening, snow clearing, and completion of housekeeping tasks will be provided to demonstrate how these ‘incidental’ activities are engaged in by participants with purpose, and with the intention of maintaining their health and fitness. Finally, to develop a holistic representation of how participants incorporate periods of rest with periods of activity, I will present two extended examples to describe how the everyday lives of participants are organized around both planned and incidental activities.
Busy, Active Lives and the Need for a Balance Between Activity and Rest

Whether they engaged in planned or incidental activity, many participants made reference (without a specific interview question or prompt) to the fact that they consider their lives to be “busy” and physically active.

**MWHN069TP (78 years old):** [I] just [have] a very busy life… So I’m a very fortunate person and I’ve kept busy, and I feel good for it… My life has been… an active one and there’s no question about it.

**MWHN126MP (78 years old):** [I: What’s the most important thing in your life?] …That we keep active…with our friends and...[being] able to do things from day-to-day.

**MWHN282JW (80 years old):** I’ve had an active life, but a great one… I have a lot of friends. …I like to work in the community. And …I just take care of my bungalow. …But it’s been a busy life. [With] a 100 acre farm…there’s … always been something going on.

Implicit in these quotations, is the notion that many participants are as ‘busy’ as they want to be. It is also interesting to note that, based on women’s discussions, being ‘busy’ is equated with being physically active. This equating of busyness with being active may result from the PA involved with participating in social activities or engaging in other leisure-time or occupational pursuits, for example, attending community functions, going out with friends, playing golf or working on a farm.

When asked explicitly whether they were satisfied with their level of PA in their lives, most women agreed that they were. The following discussion illustrates one participant’s satisfaction with her current activity level and highlights that, for many participants, more PA is neither desired nor feasible within the context of their daily lives.

**MWHN283IB (72 years old):** [I: So would you say you’re satisfied with your level of activity right now?] Yes, right now, yes definitely. Because, I’m telling you, I’m not sitting down more than for lunch.

Some participants also articulated their need to take a planned period of rest in between their daily activities, both for the enjoyment of this rest time, but also in order to appropriately pace themselves to complete necessary tasks such as gardening or household chores.

**MWHN095ME (81 years old):** Our days are filled… I don’t think I’m doing too much. …I mean if I’m tired … Like…I vacuumed the house yesterday; [then] maybe I wouldn’t [vacuum] today.

**MWHN061AD (82 years old):** [I: Are you happy with your level of activity; PA?] Yes, because I can [increase] it, or I can [decrease] it ... any time I want to. …I have a lot of energy...when I’ve had a…few restful days; [for example] if it rains for a few days, [and] I don’t go out [to work in the garden] for some reason.
In particular, the previous two quotations illustrate how participants consider temporal spacing of activities (for example, taking a day off from gardening, or intentionally not vacuuming two days in a row) as taking a rest. While taking a break from repeating the same task everyday, however, participants described remaining active during these periods of ‘rest’ by completing other tasks (e.g., cleaning in the house during a rest day from gardening). These planned periods of rest also exemplify how participants are able to create an effective plan that enables them to remain physically active each day, and to live a fulfilling life in the context of living with a chronic health condition. It has been argued in the qualitative literature on chronic illness (specifically in the context of living with arthritis), that this practice of pacing serves as evidence of individuals’ ability to self-manage (Kralik et al., 2004). Importantly, the authors of that study note that this conceptualization of self-management (that is grounded also in individuals’ social context) differs from the traditional, medical approach to self-management, which typically focuses on the education of individual patients about their health condition(s) (Kralik et al., 2004).

In contrast to the many participants who expressed their satisfaction with their current level of PA, a few participants described a dissonance between attributing their lack of activity to “laziness” or a lack of motivation, and their expressed satisfaction with their current balance of activity and rest.

**MWHN200MK (76 years old):** I would like to do more exercise. Basically, I’m lazy, I guess. And I [have] just got so many things to do.

**MWHN203MR (84 years old):** [[I: Are you satisfied with your level of activity?] On [the] whole, yes…I’m not motivated, I guess, to be any more active than I am.

Other participants described how limitations imposed by living with certain health conditions that can be exacerbated by strenuous or prolonged PA (such as bronchitis, arthritis, or back pain) required them to limit or pace their PA.

**MWHN084RB (73 years old):** [I: Do you feel that you live an active life?] No. Not right now. [I: Why is that?] Well because of my arthritis…I can only be so active.

**MWHN121CM (79 years old):** [I] try to do a little bit of housework, but I get winded. So like, I do my dishes, I get a sore back. I have to…do a bit, go back, sit down. …It’s arthritis… I noticed lately my knees are sore…and then I get winded… This morning I just swept the floor… One day…I thought, “I’m going to do it from upstairs to downstairs. Well it took me three days because I…would sit in between and [rest]…

These discussions suggest that, for these participants, balancing periods of activity with planned periods of rest is perhaps as purposeful and intentional as their planned PA participation. That is, they take adequate rest in order to limit pain associated with their health conditions, and to
ensure that they have sufficient energy to engage in the physical activities that they want or need to do.

Planned PA Participation

Many of the participants reported engaging in planned physical activities such as walking, cycling, calisthenics, and structured group exercise classes. Reflective of the results of previous research (Adamson & Parker, 2006) and the survey findings, participants prioritized walking as their preferred type of PA.

**MWHN114JT (75 years old, urban resident):** What do I like about walking? My body is moving… I feel refreshed. I feel... revitalized... I think that’s... what it is that I like about walking so much.

**MWHN126MP (78 year old, urban resident):** I always feel good when I go out and walk for half an hour, or an hour... I think [I like walking because]... you go out and you think. You just think of what you have to do today, or what you did yesterday, or what you’re going to do... I just feel better when I walk... I feel happier.

This preference for walking is likely attributable to the accessibility and suitability of this activity for older women, but analyses of interviews with participants provided additional explanation for their preference for walking. That is, women described the many adjunct physical and mental health benefits experienced from either the opportunity to be outdoors, and to socialize with their spouse and/or other people in their community.

**MWHN010MD (81 years old, urban resident):** I just feel good [when I’m active], otherwise I find I tend to be bored, and I tend to be sleepy... I do like the outdoors... I just feel it’s better for my health to keep physically active; to try and get at least three walks in a week.

**MWHN095ME (81 years old, urban resident):** [My husband, his friend and I] walked over to the farm [in the city], and that was a good...three blocks there, four blocks back. That’s about 12 or 16 [city] blocks, all the way around the [farm]. It’s such a nice spot. ...The cows are out...and they have gardens there too; a rose garden. It’s just a beautiful spot to walk.

While participants’ preference for walking is motivated by their desire to give themselves physical and mental space (to think about and enjoy life, experience the outdoors), and to spend time with a significant other (such as a spouse or friend), other social factors were described by participants as constraints regarding when and how often they walk. A few women described that informal arrangements to walk with friends or participation in organized walking programs have at times deterred them from walking with others, despite their desire for company.

**MWHN121CM (79 years old):** I had joined a walking club at the mall... Then I found it too early in the morning, [be]cause some of the ladies are there at 7:00[am]. [That’s] too early for me... So I used to walk by myself, [but] that’s the only problem - I don’t have anybody to walk with...

**MWHN126MP (78 years old):** I’m not one to join a [walking] group because... I like to go out real early in the morning, and most people...want to get up and maybe go out around 8:00[am]... So I’ve
never joined a group that walks… [My] close friend doesn’t walk, so… I’ve never really had a chance to join a friend. Because I like to be able to go out when I… am able to go out. I don’t like to have to wait on somebody, or… maybe hurry-up, because they’re going out at a certain time. So that’s why I’ve always walked on my own.

Participants also described how their ability to walk regularly as a form of planned activity is complicated by living with health conditions such as arthritis, that result in acute episodes of pain and can be exacerbated by hot, humid weather and walking on hard surfaces.

**MWHN018LL (93 years old, lives with arthritis):** If I’m sitting all the time, like [on] a day that I want to get a quilt done and I … neglect exercising, my bones get stiff… The doctor told me … [because] I have osteoporosis… he said [to] keep knitting and doing things with my fingers before they would all get crippled up… [This summer] it was hot and muggy. And oh, I was aching; [my] bones were aching all over… I was trying to quilt this quilt here and I’d just do a little bit and I’d have to get up and walk around. It goes away when you move, so that’s why it’s really important that… I move… It keeps the pain away.

**MWHN084RB (73 years old, lives with severe arthritis):** The [community walking program]… [it was in a] school [for an hour on Tuesday and Thursday evenings]… [and] they had … easy, medium and intense [levels]… I could only walk… from one end of the school to the other, sort of… It wasn’t good for me… I’ve stopped because … the floors are too hard.

As described by authors of other studies (Plonczynski, 2003), participants cited icy winter weather conditions as an impediment to their walking, because of their fear of falling. This fear, although common among most people, is significant among participants in this study because of older women’s increased risk of falls and possible bone fracture, with significant implications for their health (Scheffer, Schuurmans, van Dijk, van, & de Rooij, 2008).

**MWHN200MK (76 years old):** [My husband and I] just decide we’ll go for a walk… we do three and a half miles up around the back and out the houses, and everything… I was afraid of falling once it got snowy and icy, and I didn’t like that… [so] I walked up and down around here in the [apartment] building.

The determination of participants to engage in regular activity is apparent, however, both by their attempts to modify their activities in response to pain or other barriers to participation, and to use PA as a way of managing or coping with pain or stiffness.

Many urban and rural participants reported engaging in planned, structured and repetitive forms of activity other than walking, including aerobic, strength and stretching exercise regimens done at home, participating in group exercise classes, social dance, or group and individual sports such as golf, swimming, cross-country skiing, bicycling, bowling, or shuffle board.

**MWHN064PG (81 years old, urban resident):** I just bought myself a Wii program… I usually do it first thing in the morning and do half an hour to three-quarters of an hour on the aerobic program on that. It’s … a step program… I’ve been doing it every other day… I ride [horses]… twice a week… [on] weekends… It’s a lot of work… I do train him and work him and exercise him.
MWHN203MR (84 years old, urban resident): I’ve been going to an exercise class with a couple of my neighbours… They’re about four of us that go… And the exercises are all very mild, but actually they’re very good. And most of them we’re sitting. But you know a lot of women can’t even get out of a chair… I mean, I’m 84 and everybody is in the same age-well some of them aren’t that old, but I mean there are various stages of decrepitude. (laughing) But it’s good… We have music to it too. So it’s good. And it’s about three-quarters of an hour.

These quotations illustrate a number of reasons as to why women engage in the planned activities that they do: for improved strength and flexibility, the opportunity to socialize with others, and for fun. In addition, participants expressed the “love” that they have for particular activities that they do, such as horse riding, golf and bicycling.

Where women participate in planned physical activities

Analyses of my discussions with participants about their participation in planned physical activities revealed that it was rare for them to attend PA programs at private fitness centres or even at community centres. As I described in the previous sections, participants prefer to participate in physical activities that are informally organized (often involving friends or their spouse), are not strictly scheduled (they can participate at times that are convenient for them), and that are located close to, or in their place of residence. The following section describes that, in addition to these key elements, participants prefer opportunities to engage in physical activities and/or programs that (1) allow them to participate at their own pace, (2) involve similar age peers, and (3) are of little or no financial cost to them. Most often, women who engaged in planned activity described doing so on their own at home, informally with other female peers, and sometimes in seniors’ groups or residences.

MWHN010MD (81 years old, divorced): When I was younger I was more inclined to go to gyms... Then as I got older I found the easiest thing was to do [my exercises] at home, first thing in the morning. …I feel the program is tailor-made for me because (laughs) … I devised it… I have found that in gyms ... the program tends to be gauged towards younger women… I just don’t feel it’s appropriate for me... I’m not going to go running in place. I’m not going to do jumping jacks. I’m not going to heave heavy weights… I …find that the programs do tend to be more gauged to ... not just 20 year olds, but even 40 year olds; they’re not really gauged to 70 and 80 year olds.

MWHN084RB (73 years old, married): There’s a girl [who lives in our seniors mobile home community] that’s qualified to give classes [involving] …exercises and weight lifting. I did that for three years and [the instructor] never charged anything. Then we started giving her [two dollars] every time we went; …or buying her something… We went Monday, Wednesday and Friday, EVERY week, and I…never missed a day… There was just about six of us that did it… She was EXCELLENT.

While these preferences did not appear to differ based on whether women were living alone (divorced or widowed) or not (married), two participants explained that their preference to not go
outside of their home to be active was to prevent leaving their husbands home on their own. One of these women also suggested that she might be more inclined to seek activities outside of her home if she lived alone.

**MWHN126MP (78 years old, married):** I think, if I was alone... I would probably... be more apt to go [to the private fitness centre], because...when you live alone you...wouldn’t want to stay home all the time. You want to get out. So I’d probably use it more. [Right now] I hate to be away too much when [my husband] is sitting at home here alone, especially now that he’s got Parkinson’s.

In the absence of these factors (opportunities for socialization among similar age peers, informal or flexible schedule, self-paced, close to home and low cost), some women reported that they ceased participation in planned, physical activities that involved others or that required them to travel away from their home.

**MWHN064PG (81 years old):** I don’t like joining clubs... I just don’t like it. ...It’s not me. I’d much rather have the Wii program and get up in the morning... and do that...rather than getting myself all geared up and going out to a club... I’ve been there... When I was a sports consultant I was at clubs all the time...They’re cliquish... Maybe it was the clubs I went to. (laughing)... I went to squash clubs and they tend to be a bit cliquish... And, you know, if you’re a new person on the block it’s hard to break through those barriers.

**MWHN126MP (78 years old):** I used to go to [a private gym]... I enjoyed it, but if you wanted individual attention it could get kind of expensive. I enjoyed it, but I found some weeks I didn’t use...it was a little bit expensive just to... have it there when I... wanted to go...

**Purposeful Incidental PA Participation**

PA participation as part of everyday life, such as walking during errands, gardening, and completing housekeeping tasks, is typically described in the exercise literature as ‘incidental PA,’ or ‘lifestyle-embedded activity,’ (Tremblay, Esliger, Tremblay, & Colley, 2007). In the following section I will provide evidence that, for participants in this study, these “incidental” activities are considered just as purposeful and important to them and to the maintenance of their physical health as the structured and planned forms of activity that participants engaged in as “exercise.” Since participants described that they complete these activities out of necessity and with the intention of accumulating daily PA, I present this section as participants’ ‘purposeful incidental PA.’

**Walking for errands**

Walking as a mode of transportation contributes to a number of participants’ daily PA. In some ways, this type of PA can be seen as “incidental,” as many participants do not consider or assess the duration or distance that they walk in order to buy their groceries, run errands such as filling
prescriptions, or to travel to volunteer activities. The following discussions, however, illustrate that these women make a conscious decision to walk for errands, despite having more sedentary and easier options available to them (for example, driving or requesting delivery of groceries or prescriptions) to complete the same tasks.

**MWHN114JT (75 years old, urban resident):** I really like to walk… Mostly I go over to the mall… I don’t know how many miles, or whatever, it would be, but it’s a good walk…it’s only 20 minutes to go over to the mall over there, so [I walk]… And I’m walking all around there. So it’s about 40 minutes I suppose [to get there and back]. [I: Then you walk when you’re in the mall as well?] Yeah. [I’m out of the house for] probably three hours. (laughing) Well I look, and I go in the stores and [I] don’t buy anything, but [I] look. And [I] go in the grocery store and … [I: Do you sit much when you’re in the mall or stores?] No… [I do that] a couple times a week… If I need to get groceries, I walk over [there] and get them… I have a little buggy that carries everything… And I have another little one that I’ll pull behind me.

**MWHN203MR (84 years old, urban resident):** If the weather is ok, and I don’t have too much to carry, I’ll walk over to the shopping centre, which is quite close. It’s a little difficult in the winter, because there are no sidewalks, so you’re walking on the road, which seems to get narrower and narrower as the winter goes by. (laughing) … I always go over on Saturday and buy a newspaper - I don’t have it delivered. … It’s about…a kilometer [to get there]. I don’t know exactly. [It takes me] about ten minutes [to get there and back]. …If I have a prescription or something, I’ll just walk over [to the pharmacy to get it]; I seem to be over at the drugstore all the time…picking up prescriptions.

The following quotation provides evidence that many participants readily adopt and intentionally engage in the common public health promotion recommendation of parking further away from one’s destination in order to encourage incidental walking (Heart and Stroke Foundation of Canada, 2012).

**MWHN095ME (81 years old, urban resident):** If I [go] to the … vegetable store…I park at the back of the parking lot [and] walk maybe a block back up through the parking lot…to the shop, and then to the bank…and then] walk another half block back to the car... They… always [say, “park”] the farthest away from the store as you can.” My neighbour told me that… She always says, “Park the farthest away and walk.”

Much as it does for women engaging in walking for exercise, living with a health condition such as arthritis poses a challenge for women who walk for transportation. A 93-year-old participant described the pain she felt while walking to her volunteer job at a local nursing home (during which she accumulated up to 90 minutes of walking per day), and how it eventually forced her to stop volunteering.

**MWHN018LL (93 years old, rural resident):** [I volunteered at the nursing home until] about six years ago… [I stopped volunteering because] I found it a bit much walking down there. I have….arthritis in my feet. …So my feet were sore and I thought, “Aagh, I can’t do that every day; walk all the way,” because it’s down at the other end [of town]… So it was quite a walk… Before my toes got too bad I could walk … [it in] 10, 15 [minutes] … I don’t know. I never timed myself. (laughing) I’d come back and have lunch and then go back…If there was nothing to do at night in the summertime, I’d go back at night. [I: You did that until you were 87?] I liked doing it… I got to know all the people, and it was interesting.
Living in a rural community is another challenge that impedes women’s ability to walk for transportation or for errands, because of a lack of paved pedestrian walkways to get to stores and other destinations, such as the pharmacy, coffee shops, or clothing stores (Plonczynski, 2003). When these deterrents are rectified either by seasonal travel or relocation, participants reported enjoying walking for errands, or just for something to do during the day.

**MWHN069TP (78 years old, rural resident):** Unless I have somewhere to go, I don’t like just to walk. When we lived in the city I walked a lot… I love to walk in the city… There’s so much to see and look at, and the buildings and the noise and…you’re walking on pavement. You’re not on lumpy grass and I don’t like walking on the highway [in my town] because of the gravel that the trucks kick up. But I love to walk in the city. …I miss it in some ways… We have a daughter in [the city], so when we go there… I walk. I’ll walk the [grand]kids to school and come back with them just for the pleasure of doing that kind of walking. But I don’t walk in the country very much… I walk incidentally to do things; I’m up and down those stairs in this little house a hundred times a day, and I don’t have a problem with that.

**MWHN200MK (76 years old, previously rural, now urban resident):** [The mobile home park that I used to live in], you could walk around [there], but the roads weren’t paved. We used to walk on [the road] and we’d go up and in through the housing units that are up there, but it got too busy [with traffic]… So we didn’t walk there as much… [I: Do you find that your lifestyle changed quite a bit, or not so much, when you moved to [this city]…?] Oh yes, because we can go out and have a cup of coffee… There, you couldn’t do any of that; you had to drive everywhere. Of course, down here, there are all kinds of activities and different things [to do]. I mean you can go by [and] look in the stores.

### Gardening & snow clearing

Given the long winter and summer seasons in Canada, other ‘incidental’ activities that many participants reported engaging in were gardening and snow clearing. Gardening has been previously reported in the literature as the most popular activity among older Australian women (Adamson & Parker, 2006). Participants in this study who live in houses described their activities related to gardening and snow clearing, illustrating their active and regular (albeit seasonal) involvement in these outdoor property maintenance activities. Implicit in these discussions is their choice to complete these tasks with little assistance from automated machines that could complete the same task in less time and with far less physical effort (e.g., snow blowers, and electric or gas lawn mowers). Their determination to engage in these very physical activities is also apparent, as they continue these activities despite their spouse’s or family members’ opposition.

**MWHN069TP (78 years old, rural resident, married):** I keep the garden ... badly, because I really don’t like pulling weeds and that, but I do enough that I’m not too ashamed of it. I cut the grass… [using] a push mower with a wheel that helps it go… [My husband] is 82… He gets mad if I cut it, because he thinks I shouldn’t, so when he’s not here I’ll sometimes do it.

**MWHN203MR (84 years old, rural resident, widow):** I used to shovel the walk[way], but my son … said, “Mom, you can’t shovel snow anymore.” [I said,] (mocking, compliant voice) “Ok.” (laughs)
Sometimes I do, actually; just the walk[way]. I mean it’s not that far, just...15 feet or something… I don’t shovel if it’s six feet deep. If… somebody is coming I’ll go out and scrape it off a little bit, but … I don’t heave it all over the place.

Rather than ceasing snow shoveling and gardening activities in response to their family’s suggestions, a finding that has been previously reported in the literature on women with chronic illness (Roberto et al., 2005), participants recognized their physical limitations and modified their activities to suit their individual abilities. For some participants this involved reducing the intensity of the activity (for example, not shoveling a lot of, or heavy snow), pacing their work, or downsizing their garden.

**Housekeeping Tasks**

Housekeeping tasks are another form of “incidental activity” that interview participants reported regularly engaging in, and that require substantial physical energy expenditure, not only to complete the actual tasks (for example, doing laundry), but also through the concomitant physical activities required to complete the task (e.g., carrying a laundry basket, climbing up or down several flights of stairs, hanging laundry on a clothesline, folding clothes). Similar to the results of another qualitative study on the PA of women after a heart attack (Traywick & Schoenberg, 2008), participants discussed that, not only are they aware of the physical demands of these tasks, but that they consider some elements of these tasks (such as stair climbing) as constituting “exercise.”

**MWHN007NG (81 years old):** I [tell] myself… “Well, you’ve got all those stairs. You’re doing your [exercise]; you’re doing your up and down.” …I go up or down [the stairs] about six or eight times [a day]… I mean if I’m doing laundry…I go down to put [a load of laundry] in, come back up again, and then I go down to take it out. If [the load] goes in the dryer, then I have to go down again and get it out of the dryer. So that’s three trips… up and down [the stairs].

**MWHN018LL (93 years old):** [Cleaning the bathroom] is a bit harder. I have to get in the bathtub, because I can’t reach to [scrub] the back wall, so I generally take off my shoes and socks and get into the bathtub to wash it… I started getting some help, but I thought, “Well as long as I can do it, and at least it’s exercise, and it’s not hurting me.”

Notably, this 93-year-old participant and many other participants, made explicit statements during their interview that, “I do all my own housework.” This statement seems to indicate that some women choose not to receive any outside help with housekeeping tasks, because they see these tasks as an important component of their daily physical activities. In their study of older Australian women, the same pride in maintaining one’s own property was described by women who maintained a garden without outside help (Adamson & Parker, 2006).
Whether due to increasing age or physically limiting health conditions, a number of women described how they must now pace themselves, sometimes over several days, to get the same number of housekeeping tasks done that they could once do in a single day.

**MWHN114JT (75 years old):** This week I...washed [clothes] on Monday; I did three loads...and I ironed that day, and I folded that day. I changed the beds; so I had a really full day as far as housework goes... I started at 8:00[am]...and I probably got finished at ...2[pm], by the time I had it all folded and put away, and the bed made, etcetera... I can still do that, but I can’t do [those tasks] and clean the house and all that. [I: So on a day where you do clean the house, what does that look like?] ...I clean the bathroom (we have two bathrooms); I clean the bathroom, and vacuum the whole [apartment], which doesn’t take very long anyway, just a couple hours. ...I used to be able to do that all in one day and it’s finished, but...I can’t do that [anymore].

**MWHN010MD (81 years old):** You’ll notice the vacuum cleaner is lying over there because I didn’t get finished, but I won’t put it away until I get finished... I used to be able to do the whole house in...maybe a half hour, tops; but I can’t anymore. It bothers my back too much, so... I do it in sections now. I can only vacuum for about 15 minutes...and then my back begins to... object strenuously. So I stop and just leave the vacuum cleaner where I finished and... pick it up and do another 15 minutes, and ...eventually get the whole place done... Maybe it’ll take me...about four days to get it all done... by pacing it out like that.

This pacing of tasks described by these participants, as well as in other studies (Husser & Roberto, 2009), exemplifies that they are not only able to recognize and work safely within their physical capacity, but that they choose to continue these activities despite the considerable amount of energy and time they consume. It can also be inferred that these physical activities are important to participants, and their engagement in them is evidence of their capacity for self-management of their health condition(s) without the advice of health professionals.

While many participants attributed this change in the pace of their daily activities (i.e., taking longer to complete household tasks) to not having to care for young children any longer, this reduction in daily energy expenditure on household chores may also reflect generational changes in societal expectations of household tasks for women. That is, adult women today, may not be expected to complete household tasks as vigorously as in years past, for example scrubbing floors by hand (illustrated in the following quotation), or as another participant described, ironing the entire family’s clothes.

**MWHN203MR (84 years old, widowed):** I’m usually up fairly early... I tidy up, make the bed and all that sort of thing... I hang my laundry out if it’s nice weather. And I do my own laundry. I do my own housekeeping... I vacuum. Periodically. (laughs)...Not every room. I mean, I’ve got four bedrooms, so what’s the point? ...It’s not exactly a mess. ...I’m more or less picking up clutter... [I] wash the floor occasionally... I just do it with a mop. I don’t get down on my hands and knees anymore... I used to scrub it.
Modern implements and the introduction of automated machines into the home have also had the potential to dramatically change the intensity of many household tasks that women perform (such as floor cleaning, washing and drying clothes and dishes). In some cases, participants reported that modern implements have changed the way that they complete household tasks, and as a result, reduced the intensity of these tasks. For example, one participant discussed how washing her floors now (with a flat mop and floor duster) requires less physical exertion than it did in the past (using a pail of water and a scrub brush).

MWHN018LL (93 years old): I [clean] my floor… I go over the floors, but I scrub them about…once a month… I have a mop… Not ones of those big ones that [you] wring…not those big rag mops; it’s just a flat mop… The tile is a little bit harder to do. Sometimes I do it on my knees…but that’s only maybe once every three months. [I: You sweep the floors every day?] Oh yeah, and I have a [floor duster].

Notably, a number of participants recognized this change in the demands of their daily housekeeping tasks (stating that they use an “automatic washing machine”), and in some cases described their objection to using these appliances, choosing instead to wash their dishes or clothes by hand or hang their laundry on a line to dry, both for the economic and environmental advantages (i.e., of not running a dishwasher or clothes dryer), but also because they do not see these small bouts of PA as too onerous to complete on their own.

MWHN069TP (78 years old, rural resident): I ... have tidied up this morning, ran the vacuum…I did a load of [laundry] this morning, but you know, [with] an automatic washing machine. When you go, I’ll hang it on the line, because I did put a small line out because I think it’s more sensible to use the dryer as little as possible...

MWHN114JT (75 years old, urban resident): I make supper… always. [I: What about cleaning up after supper, and the dishes that need to be done?] That’s my job, I guess… I have a dishwasher but I don’t use it. I wash my dishes… [I: Why don’t you use the dishwasher?] I don’t want to. I don’t know why… It doesn’t take that much water to wash a few dishes.

Given the major role that housekeeping tasks have played in women’s lives and everyday physical activities, an interesting situation was presented by one participant who was advised by her physician to modify how she did her housekeeping tasks in order to address her report of pain in her chest while doing such tasks.

MWHN282JW: [I: How do you do your laundry?] I have the automatic [laundry machines]… My doctor a few years back, just three or four years ago, he said, “What’s in your basement?” and I said, “My washer and my dryer, and my deep-freezer” …And he said, “Uh huh. And you have a nice big bungalow with three bedrooms, right?” And I said, “Yeah.” And he says, “Well now I don’t want anything in that basement. Just the furnace will be enough.” He says, “You bring [the laundry machines and freezer] right up; put them on the main floor… so that you won’t be running up and down those stairs.” …That night my three sons were at my door. “Well Mom, where do you want your washer and dryer? Where do you want your deep-freezer?” They moved my deep freezer right to the sun porch; it’s so handy for me, [you] come in with your groceries, you can put all the frozen food...
in. It’s right beside the kitchen there. … The washer and dryer we put [them] in one of the biggest cupboards in the spare room, and I can sit on the bed and fold my laundry… [It was] a whole lot easier… I should have [done] it 20 years sooner… but … I didn’t see any need to. I thought, “Well you only use it once a week… you go down there for an hour or two.”

While this environmental modification made certain household tasks of laundry and putting away groceries easier for this participant (a change that she also seems to appreciate), it also substantially reduced the volume and intensity of PA that she once maintained, and could potentially compromise the cardio-protective benefits of housekeeping-related physical activities that appear so critical to this study’s participants and many other women’s lives (Lawlor et al., 2002; Weller & Corey, 1998).

**Active Aging in Practice**

In order to develop a holistic picture of the daily activities of participants, in the following section I present two participants’ descriptions of how they engage in both planned exercise and purposeful incidental activities, in the context of their regular daily routines. These participants were selected because of the rich description that they both provided during the interview about a typical active day for them (at the time of the interview, which was late spring/early summer).

Both participants reside in a rural setting, and were chosen in order to contribute to the scarce literature on the physical activities of rural-based older women.

**MWHN061AD**

MWHN061AD is an 82-year-old, retired obstetrical nurse who has lived in a rural township just outside of Ottawa, with her husband, for the past 40 years. She and her husband built their house, which is surrounded by farmland and a main highway that serves many large tractor-trailers. The following vignette contains excerpts from her interview, describing how she manages to keep very active through both planned exercise and purposeful incidental activities of gardening and completing housekeeping tasks.

This participant describes how, despite the fact that she has long since retired, she wakes at daylight and “works” all day completing housekeeping tasks, preparing meals for her and her husband, and maintaining her extensive garden. Similar to many other participants and described in the previous section, she discussed how, as an 82 year old woman, she does her own housekeeping because she enjoys this activity and is not yet ready to give up this activity.
I get up in the morning... in the summertime, as soon as it’s daylight; in wintertime I wait till it’s daylight a bit more, and I work all day. This is quite a big house... I’m 82. I should have some help helping clean it. But I don’t, because I’m not ready to give that up yet. [I: Why not?] I don’t think anybody could do it as well as me... I mean I ... I like to do it myself... I do everything in it. Windows, [vacuuming and washing] floors...And just generally maintaining it all. [I: What do you do with the windows?] Washing and ... you know it takes a lot of time really. [By] the time you clean up the kitchen, and clean the fridge, and clean the microwave, and clean the oven. And ... I don’t do it everyday, but I do it whenever... it needs to be done... Then I do the rest of the house.

And ... and then I do all the mending for [my grandsons]. They send over their clothes to be mended. They’re boys and there’s knees are out of jeans and things. I thought I was finished with that, but I’m not. I don’t mind doing it... Their mother doesn’t do it. So I don’t mind doing it. ...I can fill my day. And well this is usually just morning. ...I work the rest of the day in the garden... Like today when you go [late morning], I will go out there [to the garden].

[I] come in for lunch, cause my husband comes in for lunch; otherwise I might not. [My husband] never cooks. I cook... I like to cook... Towards the end of the winter I make a whole bunch of muffins and things and freeze them; this is my springtime [activity]. So I just take [muffins] out when I don’t have [time] to come in from the garden and cook. ...I cook the vegetables from the garden - cook from scratch... And I’ll be out there [in the garden] till 5:00[pm].

That’s an average day. I never watch TV in the daytime, summer or winter; only the news at lunchtime. My husband puts that on, so we watch the news for half an hour. And then I go out again, and I work out [in the garden].

Given the amount of time that MWHN061AD described spending engaged in gardening activities, I asked her to provide me with greater detail, specifically about the activities that she does whilst gardening. The following interview excerpt describes the tasks that she does that require a great amount of strength, flexibility and endurance, including digging and planting flowers and vegetables, bending to pull weeds from the ground, and transporting mulch or stones around the garden.

When I had a perennial garden, you have to divide the stuff, and if you leave it too long it’s like digging up a tree… So there’s a lot of work digging up, getting rid of it. I couldn’t throw it away, so I had a holding unit and I used [it] to put my plants that I’d divided in there to give away. When people came, they could get it out of there. That took a long time; it was heavy work digging up these things, and ... watering. I have a little greenhouse. I grew all my stuff in the spring; started it in the basement under lights and just let it germinate... I’m just busy with ... digging, weeding, planting. [I: When you’re weeding, are you bending over?] Yes... I bend over. And people say to me, “Doesn’t that hurt your back?” I said, “No. I can bend over all day with no problem.” And I still bend over. I know people sit on things, and kneel... But my legs would go to sleep if I got on my knees, and I get a cramp in my legs, so I just bend over. [I: So you’re on your feet for all this time, it sounds like?] All this time, yes...

[I: So watering... the garden, what do you do?] ...It’s just like watering the desert here, so it’s too big, so I just do the areas that are really... close to the house and ... need it. [I: What does that involve?] Not very much because... [my husband] being in the pipeline business we have waterlines that go down the driveway, and I connect up. Down there there’s hoses. And there [are] hoses over there, and there [are] hoses out the back. It’s not a sprinkler system but it’s ... handy... And I just walk around with the hose, or put a sprinkler on and leave it for half an hour. [I: So how long does it take you when you have to [water your garden]?] Oh, well it takes me all day - and sometimes two days... It takes a
long time. [I: So is it intermittent in those two days?] Yes… I put it on and do something else, or I’d stay around there and weed and move the hose, and weed a little, move the hose.

I’m totally addicted to digging… I can’t wait to [use] my little fork they gave me as a retirement gift. …It’s a stainless steel border fork. It’s just lovely. And I take it EVERYWHERE with me… And it’s very shiny. Cause it’s used a lot… And I just … move things, plant things. And constantly work away at … things. I got 12 loads of leaves in from a landscaper. When they take [leaves] to the dump it costs them $100 to dump a load of leaves. So I said to him, “Bring them to me. We have the space.” And when he tipped these leaves off, it looked like a little minibus. …And I moved all those leaves onto the garden; mulched the garden with them… And if I can leave it for one year it’s absolutely fabulous. I can’t wait to get my hands on it and put it on the garden.

If you look out [in the yard]…there’s three tons of stone. Last year I shoveled three tons of stone… This tree came down and I wanted to make a nice area [in the garden]. The stump was gone and I wanted to put [in] boulders and washed stones… [My son and I] went up [to a gravel pit] to get the washed stones and he said to the man…“Could you put three tons on the truck.” …So that’s how I know that I shoveled off that truck, three tons of stone. [I: How long did that take you?] A day and a half… It was great. Well from 9 till 5 and … And the next afternoon. …I have a power wagon. And I don’t have to push this wheelbarrow; I drive it. And I just lifted the thing and the stones were all washed, [and it] poured [them] into my little wagon… Drove it to [where I wanted it]... [and] dumped it off. I did it all with very little effort. [I: So you weren’t shoveling it per se.] That’s [why] when… I say to people “I shoveled three tons of stones,” they just have a fit. [They say,] “You didn’t. How stupid can that be?” But I really didn’t… I moved it.

A retired nurse, MWHN061AD described that she was curious about the effect of gardening on her heart rate, and whether her gardening activities raised her heart rate sufficiently to accumulate heart health benefits. This practice suggests that she sees the value of gardening as a form of aerobic exercise that is of potential benefit to her heart health.

Since I’ve had this heart attack, I just see what kind of cardiac workout [gardening] is… so I just take my pulse every now and again… My pulse [goes] up by 20 beats over the [resting rate, while I’m gardening], so it’s telling me that I am working my heart doing this…

This participant’s description of her extensive garden and physically intense gardening, all done amidst the completion of daily household tasks, food cultivation and meal preparation, illustrates how these activities, typically defined as constituting “incidental PA,” actually constitutes a substantial volume of purposeful and extensively planned PA for this participant, due to the frequency (daily), intensity (digging, bending) and duration (6-8 hours per day) of these activities. Like other participants described in the quotations presented in this chapter, the significant amount of time and energy that MWHN061AD expends on her gardening activities means that making time for a structured exercise routine such as walking specifically for exercise or participating in a formal exercise program with others outside of her home, is neither feasible nor desired.

[I could] go to the [YMCA]… They do have programs [for people with heart conditions]; this is true. I could put more effort into [going to classes], and I could…find [classes in the community]… But you
I don’t feel that I’m missing very much, because I can go out and get it anytime you want to. [I: Missing very much in terms of what? What can you go out and get?] Exercise, or camaraderie, you know, companions. Any time I want to go gardening, I got a gardening friend. Any time I want to go shopping; [friend’s name], she only shops; [she’s] not a gardener, she only shops. Or any time I want to go to [the bookstore]...it’s [friend’s name], and ... she knows all about books.

This participant, however, also reported riding a stationary bicycle at home during inclement weather, after she has been “sitting for more than an hour.” The practice of riding a stationary bike ‘for exercise,’ despite the intense gardening activities in which MWHN061AD engages, exemplifies the importance that she also places on planned exercise. Such valuing of planned exercise may be attributable to the fact that she is a retired nurse and has adopted a biomedical approach to PA involving structured and closely monitored exercise (evidenced also, by her taking of her heart rate while gardening). This medical training and experience, however, did not facilitate her interactions with physicians when she sought information and guidance regarding how to pace herself during her gardening activities.

After my heart attack, nobody told me ... how much [exercise] I should do. When ... I said to the doctors, “[What] about gardening?” they had no idea what kind of a garden I was talking about: they thought I had a dozen petunia plants in the front of the window. ...[I said,] “I have a BIG garden.” They weren’t interested [in the details].

As a result of this lack of information and guidance concerning how to safely perform her gardening activities after having experienced a heart attack, MWHN061AD explained how she relies on her own judgment about the safety of her activities: “[In the summer] if it’s too hot [outside to garden], I clean in the house more.” Her decision to be active in the house (completing housekeeping tasks) when the weather prohibits gardening, indicates as well, her ability for self-monitoring and pacing, choosing to rest or change activities when the intensity of an activity is too great to be performed safely.

MWHN283IB

Participant MWHN283IB is a 72-year-old, retired airline attendant and former restaurant worker (she owned a restaurant with her husband, who was a chef), who lives in a rural area with her husband. In the following extended example, MWHN283IB describes how she uses structured exercise (yoga, calisthenics, walking, swimming, and bicycling) and purposeful incidental PA (gardening and housekeeping tasks) to help her manage the mental stress that she experiences as a result of stressful life experiences, an unhappy relationship with her husband, and recent
diagnoses (in the past three years) of heart disease and breast cancer (for which she had a
mastectomy and then reconstructive surgery that still gives her daily pain).

As a former restaurant owner (in collaboration with her husband), the preparation of food is very
important to her. She and her husband shared a history of enjoying rich-tasting foods (including
heavy creams and salt), but since her diagnosis of heart disease she has radically changed her diet
to strictly adhere to a ‘heart healthy’ diet of low-fat and low-sodium foods.

…I don’t have [an] appetite anymore, and I don’t enjoy my food anymore... [I enjoy eating] maybe
20% in comparison to 100% before... Because I love...food...I would stand there for an hour; make
myself a gourmet meal... I enjoyed cooking and baking [before my heart attack], and now I can’t,
because if I bake...there’s fat and eggs in there. [I was told] “No eggs; one egg a week.” (sigh) So I’m
chewing on carrots.

For me, nowadays, [planning lunch is] difficult because I’m trying to do my [heart healthy] diet. And
even though my daughter gave me three different books: “Cooking Cholesterol Free”... I’m a
gourmand. [I’m a] gourmet and gourmand. And it was a huge shock to me [after my heart attack] to
get... flavour into my meals. So I really had to look through many, many books and try this, and try
that. And I know that with herbs and spices you can create very good flavours, but there are not that
many books, or at least I couldn’t find any- I haven’t found them yet. So I experimented, and that
takes a lot of time. And then my husband didn’t like it because I didn’t have any salt in it. I said, “But
you can add salt.” And he did it for a while, but now we’re almost back into the same old track and I
just let him cook his meals, and I cook mine... Between lunch... and cooking, that usually takes me
about an hour or so.

In addition to their disagreements about the preparation of food, MWHN2831B described her
frustration with her husband, who spends hours each day from early morning until late in the
evening clearing trees and low-lying brush on their many acres of property, leaving little time to
spend together during a meal. She no longer waits for him to eat her evening meal.

...It was no problem before [to not eat dinner together], because we have our main meal at lunchtime,
because if I eat at 6[pm] I have a very hard time to digest... If it would have been 6 it might have been
ok, but [at] 6:00[pm], (mocking husband speaking) “The sun is still up. I can’t come in yet. I’m sorry,
I have work to do.” In the summertime he used to work... UNTIL it was pitch black... Not anymore.
Now he’s... realizing that he’s getting older too, you know, but before ... I screamed and suffered and
I’d go, “Let’s have dinner...” We used to have dinner then, and that didn’t fit him, so one...day I said
to myself...“Go to hell. I’m having my meal and you eat whenever you want.” But of course that’s not
very becoming to a marriage, because you really ... grow apart. And we have grown apart...

Evident in the previous quotations, MWHN283lB openly discussed that she is unhappy in her
relationship with her husband. She also shared her feeling that it is only her lack of money that
has prevented her from leaving him. She feels that he is to blame for their financial situation (he
invested their life savings to buy a restaurant), and for forcing her to move from the house they
built and village that she loved, to a house in an isolated rural area hours away from her friends
and family. She also described how this transition from a more urban environment to a rural area
now prevents her from engaging in the walking that she once enjoyed for errands in town and in the mountains of her previous village.

[In my previous town], life was much easier because it was two kilometres down ... down to [town] where I could do my shopping. The drug store, everything was there: the doctor’s office, grocery store. I could go to [city name], which was a 40-minute drive away, and that was already a big city. And [in my previous town] I had things to look at that I enjoyed looking at, and I had my garden, of course. [It was] not as big as this one... [but] I always have gardens.

Having left Germany on her own as a teenager, following the Second World War, MWHN283IB described a number of stressful life experiences that affect how she sleeps: she often wakes during the night and is kept awake thinking about these events. PA is one way that she manages this mental stress, and she noted that in the summer when she is more physically active, she experiences better sleep.

[An active day for me] varies in the winter, and in the summer it varies a little bit. ...My husband gets up at 5[am]; he needs six hours sleep and that’s it... I have great problems [with sleep]. I can be dead tired... but I have noticed if I’m physically dead tired I can fall asleep a little easier; but when I’m just mentally dead tired, then sleep is impossible... I fall asleep almost instantly for ten minutes, [then] I wake up right away and all the bad thoughts of ALL my life; every single situation comes into my head, and I can’t get rid of it. This is really bad... Right now [in the summer] it’s not too bad because ... I’m doing more [physically] than in the winter. ...So I get up, [my husband and I] have breakfast together; he always makes breakfast. [I: Do you get up at 5 as well?] Oh, no, no. 7. 7, that’s it. That’s my limit... Sometimes I wake up earlier at 6 and I get up before I start tossing and turning, because if I stay, I’ll fall asleep again and then I could sleep until 10, or 9:00...

MWHN283IB described how her activities vary based on the season: she gardens for eight hours a day during the spring and fall months, and busies herself with more indoor pursuits during the winter and the high heat of summer days (such as sewing and other housekeeping tasks).

Regardless of the season, however, her daily indoor routine of housekeeping is extensive, and she attributes this to both generational (being taught by her mother) and cultural (growing up in Europe) factors.

After breakfast I wash the dishes...clean up. Of course, [I] get dressed, and I wash before [getting dressed]... Make my bed, because I always have to put all the pillows and everything out in the fresh air. This is European style, you know... It’s how I was taught by my mother, and that’s what I [do] every day. And then I clean once a week. And then of course that’s also done in the morning because that’s when I have my most energy. But the normal routine; I clean...My husband is a slob so I go at least 20 minutes pick, pick, pick like a chicken (gesturing picking things up). (laughter)

I’m in the garden right after breakfast. I go in the garden, and if it rains, well then I do things in the house. I either iron, [do] the washing and making the marmalade and picking the berries, that’s all in between. At 11:00[am] I come in [to prepare lunch].

Sometimes the only time I sit down is for lunch... Then in the afternoon ...again, I go in the garden. [I: So how many hours in a day typically [are you in the garden]?] ... Well eight [hours] ...in the springtime, and in the fall. When it gets cooler I can be out there... all day. Five hours [in the summer] I would say. Five hours, I definitely spend in the garden, because over the high heat [of
midday], I cannot go out…[so] then I [garden] a bit later [in the day] and I do things in the house [during the heat]. There’s lots of things to do all the time. …I do my own sewing… I do that more in the winter and in the fall.

Her decision to complete these household tasks in the morning, and to avoid gardening during the hottest hours of summer days is also evidence of her ability to pace her activities, despite the fact that she reported barely resting throughout the day.

Similar to the previous extended example, this participant’s gardening activities are often so long in duration that there is little time left for other activities such as structured exercise. Nonetheless, she still engages in activity for exercise at home, and enjoys walking in nature, bicycling and swimming. She did note, however, that many of these activities are seasonal (she walks more in the winter, and bicycles and swims in the summer). Her inclusion of gardening activities in her description of her structured exercise pursuits, suggests that she does see this incidental activity as just as purposeful and activity as swimming, cycling and walking.

My daughter…immediately [after my heart attack] sent me a tape for yoga and all the equipment - the mat and the ball… I usually go in my bedroom, lie on the floor and do whatever [exercises] I remember… from physiotherapy treatments, because it straightens my back muscles.

[In the summer] I go swimming and I then I very quickly go for a 20 minute to half an hour bicycle ride… I go [up] this…street up here… I can only do that in the summer. Because when it’s the winter, [and there’s] cold wind, forget it; I get a headache right away… Then I walk [three kilometers]…in the winter. …I don’t walk very much right now [in the summer], because … I started walking again and the mosquitoes attack me [in the forest], and [on the road] I have no protection from the sun. I walk every day in the winter. And now in the summer I run - as you can see, it’s not a small garden- so I run from one end to another. And I carry my ten [kilo] each watering cans. …Last year I was still able to do it. And this year I have to take them only half full. I have lost all my strength [since my heart attack]. And I was stronger than most men in my hands, but it’s all gone.

Vigorous walking outdoors is also a way that this participant manages her stress levels during the day, as it provides her with the mental space to think.

I like to be active. I like walking… I love nature, and I have to get out of the house. I mean, if I sit, I go crazy… When I’m very stressed …I go for a walk and…even though I’m thinking, the machine [my body] goes full speed, but I [still] look at nature and [think], “Oh, that’s a beautiful tree.”

Discussion

In summary, the two extended examples that I have presented provide evidence that supports the statements made by other interview participants about the essential and important role that both planned exercise and purposeful incidental activities (such as walking for errands, housekeeping tasks and gardening) play in the maintenance of their physical, social and mental health. Participants’ lives are both busy and active, and these terms seem to be equated among
participants, and within the literature on older adults (Grant, 2008). As previous qualitative studies involving older women (Adamson & Parker, 2006), and older women with CVD (Husser & Roberto, 2009) have suggested, evidence of how participants pace their activities (taking breaks to enable them to continue and complete particular active tasks) suggests that participants feel that they know their bodies best and know what, and how much, they can or cannot do. In this chapter I also presented older women’s preference to be active in places that are close to, or in their homes, involve their peers and opportunities for social interaction, allow them to participate at their own pace and according to a flexible schedule, information which can be used to inform the development of more suitable CR programs for this population.

Perhaps the most unique contribution of this research to the literature is the rich description that both urban and rural-based women provided about their purposeful ‘incidental’ physical activities, indicating the importance of these activities for this population of older women, and their recognition of how such activities contribute to the maintenance and promotion of their health. A recent review in the exercise literature has revealed that, “little is known about the health benefits (if any) of adopting or increasing levels of incidental (non-exercise or non-purposeful) and lifestyle-embedded physical activities (chores, incidental walking) at various ages,” (Tremblay et al., 2007, p. S209). Among women in particular, the need to consider and assess this type of non-leisure PA has been previously argued by other investigators (Lawlor et al., 2002; Oguma & Shinoda-Tagawa, 2004; Plonczynski, 2003; Plonczynski, Wilbur, Larson, & Thiede, 2008; Weller & Corey, 1998). Although Conn (1998) is one of the few authors who has drawn similar conclusions regarding the important role of PA (rather than episodic exercise) in the lives of older women, little detail is presented in her work about the specific activities in which older women engage as part of their everyday lives. Drawing on participants’ accounts of the utility of walking for transportation, gardening and completing housekeeping tasks in terms of their health promotion and fitness maintenance, it is my assertion that, for older women with CVD, these types of ‘incidental,’ ‘non-exercise,’ and ‘non-purposeful’ activities actually play an instrumental role in the maintenance of their physical health and fitness and constitute a substantial proportion of their daily PA.

As a result of the theoretical framework guiding my qualitative data analysis, the finding that incidental PA is engaged in by older women with CVD with purpose and intent is unique among the extant qualitative literature on PA among older rural women (Dye & Wilcox, 2006), and
women living with CVD (Traywick & Schoenberg, 2008). For example, in their qualitative study involving women with CVD, Traywick and Schoenberg (2008) concluded that participants’ conceptualization of incidental PA as a form of exercise was erroneous and represents their “inaccurate perspective on their current exercise level—they operated under the impression that their daily activities constituted exercise,” (p.72). As well, Dye and Wilcox (2006) reported that low-income and rural women value walking and gardening as PA, but in their interpretation of women’s discussions, did not perceive a lack of appreciation for this type of PA as a barrier to participation in and of itself. Instead, emphasis was placed on how various interpersonal barriers (as a component of social cognitive theory) such as laziness, a lack of motivation, self-efficacy or perception of control, affect women’s PA participation. In contrast to these interpretations of qualitative data, I feel that careful consideration of such PA is critical to the development of both research and clinical practice related to older women with CVD. That is, consideration of incidental PA, including walking for transportation, gardening, and completion of housekeeping tasks is critical in order to (i) provide an accurate assessment of older women’s daily energy expenditure, (ii) create meaningful public health messages about activity for this population, and (iii) to develop guidelines for general physicians counseling women following a cardiac event on how to safely accomplish the many incidental activities that they are highly likely to resume with or without having attended CR. Since these ‘incidental’ activities are highly valued and prioritized by this population, they should be regarded instead as essential activities (particularly walking for transportation and gardening) for promoting older women’s overall health and fitness. Having redefined the notion of incidental activity to instrumental activity, further investigation and initiatives are required to assess how such activity can be supported and encouraged among less active older women.
Chapter 8

Summary and Discussion of Key Findings

In this descriptive, cross-sectional study of the PA and CR experiences of older women living with CVD, I employed mixed methods to address the research question of, “What are the PA and health promotion practices, preferences, priorities, supports and desirable contexts of older women living with CVD?” My analysis of quantitative survey and qualitative interview data posits that for this group of women, their concepts of health and CVD etiology differ from a biomedical or CDM approach. Women described health as a resource for, rather than as a product of, maintaining an active life. At the same time, I argue that participants value, prioritize and engage in PA and other activities (such as healthy eating) that are typically conceptualized from a medical or public health perspective as being ‘health promoting.’ The majority of participants did so, however, to improve their overall health and wellbeing (viewing health as a resource), rather than as a means of preventing and managing a health condition (traditional risk management approach). Despite the value and priority that participants placed on these activities, most participants perceived CVD as the result of a genetic predisposition, or stressful life events.

Based on specific eligibility criteria, all women in the study were medically eligible to attend CR. The majority of survey respondents reported having received a referral to CR, but 40% of respondents were not referred to CR despite a systematic CR referral policy being in place at the hospital in which they received cardiac care. Rural residents were significantly less likely to have received a referral, and analysis of qualitative interviews suggests that clinicians’ perceptions of women’s willingness or ability to attend CR might have influenced CR referral provision. Receipt of referral to CR significantly predicted CR attendance, such that 80% of women who were referred to CR reported attending. Most often, women cited their physician as their primary source of PA information and advice, although friends and family members were equally or more likely to be consulted rather than exercise specialists (physiotherapists, kinesiologists). Most respondents (62%) reported that their physician had talked to them about their level of PA, but less than 40% were provided with written information about PA or support to set activity goals: less than 15% received a referral to a community-based PA program.

Walking, gardening and housekeeping tasks were major contributors to women’s total (i.e., incidental and leisure time) activity. Survey and interview data suggest that participants prefer
low-cost, informal and flexible opportunities to participate in PA in or close to their homes. Activity that is self-paced and (if group based) involves similar age peers is also preferred. Participants were significantly more active in incidental and leisure time PA than the general population of older women with CVD living in Ontario. The PA practices described by interview participants (particularly walking for errands, gardening and housekeeping tasks) suggest that a public health approach to PA that prioritizes leisure time PA may overlook the important role of (so-called) incidental PA in the lives of older women living with CVD. Women who reported having a lack of energy for PA and a weak sense of belonging to their community reported significantly lower levels of incidental PA participation. Our quantitative and qualitative data (i.e., volunteer participation, and participation in seniors’ centres or groups, respectively) support the notion that engagement in community organizations and events are important to many older women. Given participants’ propensity to attend community-based programs and events when a meal is provided or shared (e.g., a potluck meal at a church or seniors’ centre), these venues provide opportunities for engaging this population in health promotion initiatives.

**Theoretical and Methodological Contributions of the Study**

**Socioenvironmental Approach**

The socioenvironmental approach to health promotion (Labonte, 1992) that I used to guide the conception and design of this study, and the use of mixed methods, are particular strengths of this study. Assessment of the challenges to PA and CR participation that older women face at the personal, social and environmental level provided a more comprehensive description and assessment of the issues that must be considered when aiming to increase their participation in both of these health promoting activities. While this comprehensive approach is increasingly being adopted within the literature on PA and CR participation (Bjornsdottir, Arnadottir, & Halldorsdottir, 2012; Grace et al., 2009), the extant literature on health education remains primarily driven by an ‘individual responsibility for health’ approach, that focuses solely on the personal and psychological conditions necessary for the adoption of ‘healthy lifestyle behaviours,’ (e.g., measures of personal readiness for change or self-efficacy for PA). Moreover, the incorporation of qualitative interviews and analysis within this study facilitates a comprehensive understanding of the personal, social and environmental contexts in which older women with CVD live and make decisions about their engagement in PA, CR and other health promoting activities. Such understanding can inform the development of initiatives to support
individuals’ ability to adopt and maintain recommended ‘healthy lifestyle behaviours’ at a personal, but also at a social and environmental level.

The results of this study have the potential to extend the relevance of the socioenvironmental approach to health promotion to the life experiences of individuals living with chronic health conditions in general, and to older women living with CVD in particular. To achieve this increased relevance, I suggest that ‘personal conceptions of health and disease,’ as well as ‘stressful life experiences’ be included among the ‘psychosocial risk factors’ presented in the model of the socioenvironmental approach to heart health by Labonte (1992) depicted in Figure 1. This suggestion is based on my findings related to the incongruence between older women’s conceptualization of health and CVD etiology and traditional biomedical or CDM explanations of CVD etiology, and the impact that this lack of concordance may have in terms of older women’s engagement in PA as a ‘disease management’ practice. The inclusion of these factors may sensitize health promotion researchers and professionals to other reasons why some individuals may exhibit particular ‘behavioural risk factors’ such as physical inactivity. Second, ‘gendered social roles’ (e.g., mother, wife or care provider) are proposed to be included among ‘risk conditions,’ since these roles can also shape ‘psychosocial and behavioural risk factors’ contributing to CVD morbidity and mortality. For example, participants’ feelings that the premature loss of a child, or marital discord amidst financial dependence contributed to them developing CVD (rather than personal lifestyle factors), or having insufficient time or energy for leisure time PA because of energy expended completing housekeeping or caregiving tasks. Finally, ‘lack of accessible and appropriate programs and services’ should also be included among ‘risk conditions’ to consider how programs or services (for example, CR) that are (a) unavailable (e.g., within particular geographic communities), (b) not developed to meet the needs of, or (c) inaccessible to particular groups of individuals (for various reasons related to other ‘risk conditions’ such as sexism, poverty, dangerous environments, etc.) may contribute to ‘psychosocial and behavioural risk factors’ directly, and CVD and all-cause morbidity and mortality indirectly.

**Mixed Methods Approach**

The mixed methods approach employed is another strength of this study. Although survey and interview data collection and analysis occurred sequentially, an interactive process of data interpretation followed. Survey data analysis yielded quantitative evidence that supports and
extends existing research about the challenges older women with CVD face in terms of participation in CR, PA and other health promoting activities. Subsequent conduct and analysis of qualitative interviews provided additional description of participants’ experiences, and facilitated understanding of the survey results (for example, why some women chose to not attend CR, or the types of incidental or leisure time PA preferred). Qualitative analysis of the interview data enabled greater explanation of participants’ reported PA and health promotion practices, preferences and priorities, including their experiences with CR. As a result of this approach, I was able to go beyond identifying the challenges that this population faces and merely speculating about how to address these barriers. Many examples could be provided about how the use of mixed methods enabled an interactive process of data interpretation and explanation of survey and interview findings: for illustrative purposes, I present a few brief examples here.

A simple example of the interactive process of data interpretation that was enabled by mixed methods was explaining why interview participants’ response that they would most likely (but seldom did) consult their physician for PA information or advice. Survey data revealed that, despite the identification of their physician as a key resource, many women relied heavily on friends and family members for this type of information. Further analysis of interviews with participants also revealed that many women felt that, because of time constraints of their physicians, that this information may be more efficiently obtained by consulting with family members and friends. The survey finding that rural women were less likely than urban women to be referred to CR (despite an automatic referral system) was also partially explained by interview analysis of participants’ descriptions of how health care providers’ assumptions about their inability to attend CR given their rural location prevented them from being referred to CR.

After completing both survey and interview data analysis, it became clear that the survey finding of a lack of energy for PA as a predictor of incidental PA was related to the qualitative finding that pacing the completion of housekeeping tasks was an important strategy for participants to remain active. Thus, in addition to the top-down suggestion that older women’s reports of low energy be considered and investigated by physicians (as an indirect strategy of supporting their PA participation), it is perhaps as important to provide the ground-up strategy (based on women’s experiences) of supporting women to continue and encouraging other women to initiate the practice of pacing themselves in their daily household tasks. By providing this support and
encouragement, women may feel less symptom-limited, and more empowered to engage in this form of activity, and at the same time, have their efforts to remain physically active through housekeeping tasks acknowledged and commended.

The insight that resulted from interview findings regarding how older women with CVD conceptualize their health (as a resource for an active life) and CVD etiology (as the consequence of genetics or major stressful life events) helped me to understand why most survey respondents reported that they engaged in PA to for ‘overall health and wellbeing’ rather than ‘to prevent or manage health conditions.’ Combined, however, these findings help me to understand at a broader level, how incongruence between the structure and practices of contemporary CDM programs (such as CR) may contribute to older women’s underrepresentation in traditional CR programs.

Finally, as a result of a mixed methods approach, I was able to describe from the perspective of older women, the necessary supports to encourage their participation in PA, CR and other health promoting practices. This is exemplified by the suggestion that providing community meals may serve as a useful entry point to this population: qualitative analysis revealed that food provisioning is a central component of women’s lives, and survey results suggested that community participation and belonging contribute to women’s PA participation. Analysis of survey or interview data alone would not have lead to this suggestion.

**Older Women and Cardiac Rehabilitation**

The women-only sample described in this study provides useful information about the experiences and challenges of women in terms of barriers to accessing existing CR programs. The focus of this study on older women (≥65 years), and inclusion of rural women (34% of survey respondents; 47% of interview participants) is particularly important, since these are underserved populations within CR care (Beswick et al., 2005; Caldwell & Arthur, 2009), and among the literature on PA (Dye & Wilcox, 2006). The strength of this study in terms of focusing on older women exclusively ($M_{\text{age}}$ (survey)=75.8 years; $M_{\text{age}}$ (interviews)=79.6 years), however, is also recognized as a limitation since the data gathered does not allow for a gender-based analysis documenting how the experiences of women differ from men. Given the richness of the literature on men’s participation in CR, however, comparisons can be made with the
findings of this study to better understand specific differences between men and women’s experiences with CR.

Analysis of the study data alone does not enable the description of how older women’s experiences differ from that of younger women (<65 years of age) living with CVD. A lack of ethnic diversity within this study (75.6% Canadian-born; 87.4%, English-speaking) also limits the generalizability of the findings to other ethnic groups of older women with CVD. The study sample is representative of the ethnic profile of most Ontarians, and in particular, the Champlain LHIN (65.3% Canadian-born), but findings may not be generalizable or transferable to older women in other major urban centres in Canada that have greater ethnic diversity within their population.

Recruitment of women from a single hospital, specializing in cardiac care, within the country’s capital city is both a strength and a limitation of this study, since all the women invited to participate in the study had received care at this site. The single site for recruitment is a strength of this study since variation is eliminated related to hospital referral strategy and the availability of an on-site CR program. Survey respondents and interview participants, however, likely represent a population of older women in Ontario who face fewer barriers to accessing high quality cardiac care, including CR (54.2% of respondents attended CR). As such, information gleaned from analysis of survey data regarding women’s reported personal, social and environmental challenges to PA and CR participation should be interpreted with caution, as it may not be generalizable to the population of all older women with CVD living in Ontario.

Finally, the finding that participants generally did not perceive CVD as having a central role in their daily lives should be considered within the context of the fact that participants were not interviewed immediately following the experience of a cardiac event, and this likely influenced the way in which they perceived the role of CVD in their lives.

Physical Activity and Older Women with Cardiovascular Disease

The measurement of respondents’ level of physical activity was not an objective of the study. Given the limited research that exists about (i) PA among older women living with CVD (Petter et al., 2009), and (ii) women’s total PA, including non-leisure time PA (Oguma & Shinoda-Tagawa, 2004), it would have been useful to have quantified respondents’ actual level of PA using a scale validated for this population (Washburn, Smith, Jette, & Janney, 1993). Although
not validated, the survey used in this study reflected the theoretical framework described (including revising validated questions to reflect women’s known activity patterns, and including additional questions to assess the impact of personal, social and environmental challenges to older women’s PA and CR participation), and resulted in the generation of information that serves as a useful starting point for follow-up qualitative investigation.

Self-administration of the survey by mail may have resulted in a degree of error, since the CCHS and the Canadian Survey of Experiences with Primary Health Care (from which many of the survey questions were derived) were both designed to be conducted via telephone. Pretesting of the survey tool was conducted, however, with a group of women who met eligibility criteria for the study to ensure that questions were clearly worded and understood by the intended population (Dillman, 2007). The self-report method of the survey is also a limitation of this study, since both over- and underestimation of PA is possible with this type of design as compared to direct measurement of PA (Prince et al., 2008). Although the goal of the study was not to measure older women’s total energy expenditure, based on respondents high level of reported activity compared to the population, it is likely that the estimates provided of the incidental and leisure-time PA participation (i.e., walking for transportation and exercise, and usual daily tasks) among older women with CVD are higher than the actual level of activity of this population within these domains.

Response bias from active women was likely, given that the focus of the survey was on PA, and that PA is a socially desirable behaviour among North American women (Adams et al., 2005; Dillman, 2007). Survey respondents were significantly more physically active compared to the results of population-level census data estimates of activity (Statistics Canada, 2005a) in the same population (older women with CVD, living in Ontario). The time of year in which the two phases of the study were conducted may have influenced survey respondents’ and interview participants’ responses regarding PA. The survey was administered during fall and winter months (September-December 2010), whereas interviews were conducted during spring and summer months (May-August 2011). As a result, the activities that interview participants discussed were related to their warmer weather activities and pursuits (e.g., gardening, cycling, swimming), and these activities may have been less likely to be reported on the survey since it asked respondents about their activities within the previous three months. Thus, women’s qualitative descriptions of their typical day (i.e., as described in the two extended examples of
rural participants), which include detailed discussions about gardening for example, need to be interpreted with this context in mind. Women’s PA reported in the survey may have been different (most likely less) than what they would have reported if the survey was administered during the spring or summer months, given the essential role of outdoor activities such as walking and gardening that interview participants described. Reported concerns about safety while engaged in PA in the community may also have differed if the survey was conducted during warmer weather months when older women’s fear of falling on ice would be lower. One study has shown, however, that PA among individuals with CVD attending or not attending CR is not associated with time of year (i.e., winter, compared with the rest of the year) (Petter et al., 2009).

In spite of the limitations of the survey design and administration outlined above, the high level of activity reported by older women is evidence that PA is valued and possible among older women living with CVD. As such, a role exists for these highly active women to directly inform the development of strategies to improve their access to opportunities for PA and other health promoting activities based on their own experience and perspectives. In the following section I will provide suggestions on how the findings from this study can be used to inform research, policy and practice related to CR, PA and health promotion among older women living with CVD.

**Implications for Research, Policy and Practice**

**Research**

Based on the findings of this study, the influence of individuals’ concepts of health and disease etiology on their decision-making and priority setting related to other health promotion practices should be further explored quantitatively to test the proposed hypothesis that these issues are related. Further qualitative research in this area may also compare whether the concept of disease etiology presented in this study differs (i) among older women living with non-lifestyle related conditions (e.g., arthritis, MS, or cancer), and (ii) among men or younger women living with CVD. This additional research may also evaluate whether the suggestion of including these issues in the socioenvironmental approach to health promotion is indeed valid and warranted. The finding that many participants described their PA participation not as a way of preventing or managing disease, and that for the most part, they perceived their cardiac event as a glitch from
which they have moved on, suggests that the health promoting activities and priorities of women living with CVD should be explored at various time points post-event to better understand if and how this population sustains particular health promotion practices and activities over time.

Older women’s engagement in and conceptualization of incidental PA described by the findings of this study suggests that the contribution of walking for transportation, gardening and other housekeeping tasks should be considered within the (i) public health and epidemiological research domain in terms of CVD and all-cause morbidity and mortality risk reduction, (ii) exercise science literature in terms of understanding and measuring (and perhaps renaming) ‘incidental PA’ as an important component of older women’s total PA, and (iii) among the health promotion literature to explore how a sense of community belonging and engagement directly or indirectly contribute to older women’s PA participation. Given the relatively small study group of older rural women that participated in qualitative interviews (N=7) conducted over the spring and summer months, additional qualitative research is warranted to explore their perspectives on how they can be best supported to remain active during the winter, when many opportunities for walking outdoors and gardening may be limited. Research on women and CR should also be extended to include older women’s concepts of PA (as a component of CR) and CVD etiology by examining how these personal-level characteristics may facilitate or impede women’s participation in CR. Finally, the suggestion that community meals may serve as a viable point of entry for health promotion programs for older women should be investigated qualitatively to assess the potential interest among older women in this type of initiative, and quantitatively to assess the effectiveness of this method in terms of engaging women in community-based health promoting programs.

Policy

Development and implementation of a number of health and hospital policies may ensure that older women living with CVD receive support to engage in safe and effective PA, in a way that is relevant to their life context. To increase the accessibility of existing CR programs, hospital policies are necessary to mitigate the apparent effect of health care providers’ assumptions about older women’s willingness or ability to attend CR affecting the provision of a referral to CR. That is not to say that women’s circumstances must not be discussed with care providers, with consideration of the relative costs to individuals of attending (e.g., coordinating transportation, parking and fuel costs), but a method of ensuring that the strength of a provider’s
recommendation to attend CR is equitable among women, regardless of geographic location, should be developed. A more proactive approach to address older women’s ability to participate in CR would be to develop additional non-hospital based sites for CR programs. The HeartWise Exercise Program (http://www.heartwiseexercise.ca), developed in Ottawa, Ontario and being extended to other regions of southwestern Ontario, is one example of a hospital-community partnership to assist individuals living with CVD in identifying existing safe and appropriate PA programs in urban and rural communities. Offering health information beyond PA, opportunities for socialization with their peers, and possibly access to a no- or low-cost meal in collaboration with HeartWise Exercise Programs may encourage the participation of older women living with CVD in these types of programs.

Mobile CR and cardiac information units could be coordinated at a health region level, to reach older women within their communities (including rural-based women), who do not attend community-based PA programs. Group and/or individual counseling about leisure time and incidental PA, and other heart health strategies (e.g., healthy eating, stress or medication management) could be conducted within existing seniors’ organizations (rather than community PA programs) and women’s homes. In-home visits in particular could provide older women with relevant advice for structured PA, but also about how to engage in various incidental activities in a way that minimizes fatigue and/or cardiac symptoms. In this way, health care providers may also gain a better appreciation of the resources that are (or are not) available to many women (e.g., rural women), and the types or extent of their activities in which they engage (e.g., to address misconceptions about what ‘gardening’ may entail particularly among rural women). Of course, a health economic analysis may be warranted to assess relative costs of implementing these strategies measured against health care costs avoided (i.e., hospital readmission, CVD morbidity and mortality). As well, administrative and financial collaboration would be required across provincial, health region and municipal levels to implement suggested programs.

Many older women living with CVD will likely continue to choose to not participate in structured CR programs based in-hospital or within their communities. For this reason, and based on the finding that many older women value walking as a form of transportation and exercise, policies to increase the walkability of neighbourhoods in which seniors live should be considered. To achieve this, city and regional planning should occur in collaboration with health geographers, and financial incentive for such a collaboration could be provided by reallocating
some health care costs, based on expected costs savings related to treating ‘lifestyle-related chronic disease’ such as CVD and diabetes. Such an initiative also has the potential to benefit the broader population in addition to older women living with CVD. The creation of walkable neighbourhoods, however, will not address the unique conditions of winter in Canada, particularly in Ontario. A novel approach to support older women’s incidental walking during the winter has been implemented in Sweden and involves creating urban spaces with heated sidewalks. According to their government’s cost-benefit analysis, the cost of installing this feature (which is coordinated with scheduled sidewalk maintenance) is less than the long-term cost of snow removal, and offers the additional benefit of reduced health care costs related to treating falls (Freed, 2011). Other policy options include offering subsidized or seasonal walking passes to seniors or individuals living with CVD to use indoor walking facilities at public and private fitness centres, and/or providing tax incentives on the purchase of home exercise equipment for individuals with CVD living in rural communities.

Practice

By acknowledging and incorporating women’s conceptions of health and CVD etiology into the focus of interventions and supports offered in existing CR programs, the needs of older women living with CVD may be better met (e.g., providing opportunities to discuss their concerns or information needs with health professionals, or to connect with their peers for support). While important, such changes on their own may do little to actually increase the accessibility of existing CR programs for older women. Rather than modifying existing programs, novel approaches are necessary that address women’s articulated needs and preferences, including the social support and interactions that they desire (Budnick et al., 2009; Kristofferzon et al., 2003), and the opportunity to socialize with their peers and learn ways to manage their stress, rather than merely receiving education about disease management (Dolansky, Moore, & Visovsky, 2006). An approach to program development that includes these elements may better facilitate many women’s desire to create order (Kralik et al., 2004) and resume their ‘ordinary lives’ (Kralik, 2002) following a cardiac event (Husser & Roberto, 2009).

My findings suggest that many older women with CVD, regardless of CR participation, are in fact, leading busy and active lives and engaging in health-promoting activities. One way to connect with women in this population is to support the many health promoting practices in which they already engage (such as walking, gardening, food preparation and volunteer
activities) and provide them with information and encouragement as needed, about how modifying, sustaining and possibly increasing their participation in these activities can promote their health. Clinicians adopting such an approach would also gain an appreciation for the fact that other activities (beyond following a daily structured exercise prescription) are the foci of women’s lives. Opportunities for cardiac care clinicians to engage with women in their homes and communities would increase their awareness of the activities in which women with CVD are involved. Support for this alternative approach comes from the findings and recommendations of a recent study that has brought the effectiveness of CR under question (West, Jones, & Henderson, 2012). In their multi-centre, randomized controlled trial of CR with follow-up over nine years, the authors of the study found no effect of CR on mortality, cardiac or psychological morbidity, risk factors, health-related quality of life, or physical activity, and concluded that “[cardiac] rehabilitation added little to contemporary patients’ knowledge and motivation to make prudent [lifestyle] changes,” (West et al., 2012, p.642). Despite the controversy generated as a result of the publication of this trial (BMJ Heart, 2012), even critics of the study agree that its findings suggest a need for CR programs to “evolve from time-limited, exercise-focused programmes into more accessible and individually tailored ones…[that] include long-term follow-up with ongoing support,” (Redfern, Clark, Neubeck, & Briffa, 2012).

I offer one such accessible alternative to CR that is tailored to the needs of older women living with CVD. That is, to develop community-based initiatives to provide older women and their families with information and support to continue or adopt health-promoting strategies such as incidental PA participation and heart healthy eating. Information may include how to safely and effectively pace the completion of indoor and outdoor household tasks (e.g., cleaning, gardening, snow clearing) to minimize fatigue and cardiac symptoms. More importantly, a process of knowledge exchange (rather than information transfer from health professionals to women living with CVD) should be adopted, such that the focus and content of programs is based on the articulated needs of older women living with CVD (Hagberth et al., 2008). Such programs should also be cognizant of how the concepts of health and CVD etiology are understood by this population. Collaboration with existing seniors’ community groups and offering the program in conjunction with a shared meal, over which women can socialize, may encourage women’s participation in these programs. In addition to enabling important knowledge sharing and exchange (between women and clinicians, and between women themselves), these programs can provide older women with a sense of community belonging, which may indirectly support their
overall health and PA participation. Direction for such initiatives that take a participatory approach involving older women to define their own health priorities can be found from the community occupational therapy practice literature involving participatory action research (Cockburn and Trentham, 2002).

**Conclusion**

Older women living with CVD engage in a number of practices that are considered to be ‘health-promoting,’ including participating in CR programs, planned PA, following a heart healthy diet, taking prescription medication, and generally leading busy and active lives. Participants in this study conceptualized health as a resource to continue these pursuits, and to complete their social role-related activities as wives, mothers, friends, caregivers, and members of community organizations (e.g., housekeeping tasks, providing care to their spouse and other family members, preparing and sharing meals, volunteering). Evidence of older women’s ability to self-manage in the context of living with CVD is found in their practices of pacing activities, rather than avoiding PA when they experience fatigue.

Participants’ experiences with CR confirmed the important role of referral in their decision to attend CR, but many women experienced a lack of referral as a result of their rural residency. Many respondents reported participating in CR, but interviews with women who did not attend CR confirm that, even in the context of an automatic CR referral policy, and relevant community-based alternatives (HeartWise Exercise), barriers remain, and/or that these women may choose to not attend even if more accessible programs are made available. This capacity for agency, or ability of women to make decisions or engage in actions relevant to their self-defined needs, suggests that the alternative approaches to heart health promotion are required. Novel approaches should recognize women’s capacity for self-management, support women in their current heart health pursuits (for example, by providing advice on how to accomplish incidental PA safely), and incorporate older women’s views about their health and CVD etiology. Through an understanding of the interconnectedness of women’s health and health practices with their social roles, social location, familial and community participation, heart health programs and initiatives can go beyond a risk-management approach and move towards a community development approach as espoused by the socioenvironmental approach to health promotion. Rather than health promotion approaches working up from the level of the person to enable
community participation, community development can instead be the starting point from which community belonging and participation can foster individual older women’s health.

This is not the first study or area of research to take issue with the incongruence between a risk factor and risk-management approach to women’s health. Authors of a substantively unrelated study on the health of young women in rural Papua New Guinea have also argued that the traditional approach of health care providers to assess “individual-based risk factors which are decontextualized from the social and cultural relationships within which women's lives are embedded,” fails to create “understanding about the health meanings and perceptions of rural [Papua New Guinea] women,” (Hinton & Earnest, 2009, p.1257). They too suggest that, “health practitioners and policy-makers…need to reconsider their assumptions underlying women's health programs and interventions in rural areas, and broaden their perspective of health to recognize the ways in which women's personal experiences influence health,” (Hinton & Earnest, 2009, p.1257).

Older women’s participation in PA is motivated by a desire for overall health and wellbeing. As articulated by participants in this study, their preferences for PA include walking, gardening, and home exercises, particularly because of their ability to engage in these forms of activity in or near their homes, on their own schedule and at their own pace. When considering attendance at a structured program, it is important that programs are affordable, appropriate for their level of fitness, and among their peers. In general, support for PA participation is lacking from physicians involved in older women’s care. Whether this results from a lack of time or knowledge is unclear, but fortunately this lack of support does not appear to affect women’s PA participation, and many information gaps are filled by family members and friends with whom they exchange PA and health-related information.

To best support the PA and health promotion practices of older women living with CVD, a combination of efforts is needed to increase the accessibility of existing programs, develop novel approaches to heart health promotion, and support older women’s community participation. By providing these necessary supports and desirable contexts, older women living with CVD will be better able to continue to lead busy and active lives through their full engagement with life and their communities.
References


BMJ Heart. (2012). *Replies to “rehabilitation after myocardial infarction trial (RAMIT): Multi-centre randomised controlled trial of comprehensive cardiac rehabilitation in patients following acute myocardial infarction”*. Retrieved May 9, 2012, from [http://heart.bmj.com/content/98/8/637/reply](http://heart.bmj.com/content/98/8/637/reply)


Statistics Canada. (2005b). *Leisure-time physical activity, by age group and sex, household population aged 12 and over, Canada, provinces, territories, health regions (June 2005 boundaries) and peer groups, every 2 years, CANSIM*. (Table 105-0433).


# Tables

Table 1. *Three Approaches to Heart Health Enhancement*

<table>
<thead>
<tr>
<th>Health concept</th>
<th>Problem definition</th>
<th>Principal strategies</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical or high-risk approach</strong></td>
<td>disease and physiological risk factors</td>
<td>surgery, drug, other therapies, medically managed health behaviour change, screening for physiological risk factors</td>
<td>high risk individuals</td>
</tr>
<tr>
<td>negative state, absence of disease, disability, other 'deviance' from physiological 'norms'</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Behavioural or multiple risk factor reduction approach</strong></td>
<td>behavioural risk factors</td>
<td>health education, social marketing, health advocacy for policy supporting lifestyle change</td>
<td>high risk groups: (those with unhealthy lifestyles) children (promotion of healthy lifestyles)</td>
</tr>
<tr>
<td>individualised, health as 'energy' physical-functional ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socioenvironmental or community development approach</strong></td>
<td>psychosocial risk factors and socioenvironmental risk conditions</td>
<td>personal empowerment, small group development, community organization, health advocacy, political action</td>
<td>high risk environments</td>
</tr>
<tr>
<td>positive state, connectedness to one's family/friends/community, self-efficacy, 'being in control', ability to do things that are important or have meaning, psychological and social 'wellness'</td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Program development</th>
<th>Prevention level</th>
<th>Success criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical or high-risk approach</strong></td>
<td>tertiary prevention</td>
<td>decrease in diagnosed morbidity, decrease in specific age-standardized mortalities, decrease in risk factor prevalence rates</td>
</tr>
<tr>
<td>professionally managed</td>
<td>disease intervention</td>
<td></td>
</tr>
<tr>
<td><strong>Behavioural or multiple risk factor reduction approach</strong></td>
<td>secondary prevention (improving lifestyles)</td>
<td>improved existing lifestyles, healthier lifestyles 'early in the life cycle'</td>
</tr>
<tr>
<td>community-based programming: professional and/or agencies defining the health problem, developing strategies, involving local community members and groups, working to transfer major responsibility for ongoing program to local community members and groups</td>
<td>primary prevention (creating healthy lifestyles)</td>
<td>enactments of healthy public policies related to health behaviour</td>
</tr>
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</table>

174
<table>
<thead>
<tr>
<th>Program development</th>
<th>Prevention level</th>
<th>Success criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>community development programming;</td>
<td>primary prevention</td>
<td>improved personal perception of health</td>
</tr>
<tr>
<td>enabling communities to make decisions necessary to plan</td>
<td>(creating healthy lifestyles)</td>
<td>improved social networks, social support</td>
</tr>
<tr>
<td>and implement strategies to achieve better health, which</td>
<td>health promotion (creating healthy living conditions)</td>
<td>improved community actions to create more equitable social distribution of power/resources</td>
</tr>
<tr>
<td>requires allowing communities to define their own priority</td>
<td></td>
<td>improved community actions to create more environmentally sustainable personal, public and private economic practices</td>
</tr>
<tr>
<td>health problems</td>
<td></td>
<td>shifts in social equity measures in the direction of greater equity</td>
</tr>
</tbody>
</table>

Source: (Labonte, 1992, pp.121-122)
Table 2. *Sample Size Estimates Based on Established Dichotomous Variables*

<table>
<thead>
<tr>
<th>Dichotomous Variable</th>
<th>( P ) (95% CI)</th>
<th>( N )^a</th>
<th>Number needed to contact(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Ontario women (age 65+ years) with heart disease reporting ‘walking for exercise’ in the previous 3 months (Statistics Canada, 2006)</td>
<td>0.571 (0.540-0.601)</td>
<td>168</td>
<td>279</td>
</tr>
<tr>
<td>Proportion of eligible Ontario women who attend cardiac rehabilitation (Grace et al., 2009)</td>
<td>0.369</td>
<td>159</td>
<td>265</td>
</tr>
<tr>
<td>Proportion of Ontario women (age 65+ years) with heart disease reporting standing or walking quite a lot, climbing stairs or hills often, and/or carrying some loads as part of their usual daily activities(^d) (Statistics Canada, 2006)</td>
<td>0.652</td>
<td>155</td>
<td>258</td>
</tr>
<tr>
<td>Proportion of British women (age 60-79 years) who are active at recommended level including domestic activities(^c) (Lawlor et al., 2002)</td>
<td>0.667 (0.648-0.686)</td>
<td>152</td>
<td>253</td>
</tr>
<tr>
<td>Proportion of Ontario women (age 65+ years) with heart disease reporting no physical activities in the previous 3 months(^c), (Statistics Canada, 2006)</td>
<td>0.243 (0.217-0.270)</td>
<td>126</td>
<td>210</td>
</tr>
<tr>
<td>Proportion of Ontario women (age 65+ years) with heart disease reporting walking six or more hours per week for transportation in the past 3 months(^d) (Statistics Canada, 2006)</td>
<td>0.151</td>
<td>88</td>
<td>146</td>
</tr>
</tbody>
</table>

\(^a\) \(N=\left[4(z_{0.05})^2P(1-P)\right] ÷ W^2\), \(z_{0.05}=1.96\) (95% confidence interval), \(W=0.15\). \(^b\)Based on a 60% response rate. \(^c\)Based on leisure-time PA. \(^d\)Based on non-leisure time PA. \(^e\)Recommended levels of activity = 30 minutes of moderate activity on at least five days a week or 20 minutes of vigorous activity three times a week.
Table 3. *MWHN Survey Data Analysis Framework*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Intervening variables</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Access to PA Services and Information:</td>
<td>• Incidental PA</td>
</tr>
<tr>
<td>Education</td>
<td>• Personal challenges to PA</td>
<td>• Leisure time PA</td>
</tr>
<tr>
<td>Income</td>
<td>• Environmental challenges to PA</td>
<td>• CR attendance</td>
</tr>
<tr>
<td>Marital status</td>
<td>• Facility-related challenges to PA</td>
<td></td>
</tr>
<tr>
<td>Location of residence (urban, rural)</td>
<td>• PA Information seeking experience</td>
<td></td>
</tr>
<tr>
<td>Chronic health conditions</td>
<td>Physician Support for PA:</td>
<td></td>
</tr>
<tr>
<td>Past PA</td>
<td>• Discussions about PA with physician</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Help from physician to increase PA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• CR referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PA and HP Preferences and Priorities:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reasons for PA participation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Preferences for PA (location, socialization)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Health promotion priorities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact of Physical and Mental Health on PA:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pain and limitations</td>
<td></td>
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<tr>
<td></td>
<td>• General Health</td>
<td></td>
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<tr>
<td></td>
<td>• Mental Health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact of Social Wellbeing on PA:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Social support for PA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sense of belonging to community</td>
<td></td>
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<td></td>
<td>• Volunteer participation</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Immigration History of MWHN Survey Respondents

<table>
<thead>
<tr>
<th>Years since immigrating to Canada</th>
<th>%N (N=26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>0</td>
</tr>
<tr>
<td>10-19</td>
<td>7.7</td>
</tr>
<tr>
<td>20-29</td>
<td>0</td>
</tr>
<tr>
<td>30-39</td>
<td>0</td>
</tr>
<tr>
<td>40-49</td>
<td>30.8</td>
</tr>
<tr>
<td>50-59</td>
<td>34.6</td>
</tr>
<tr>
<td>60-69</td>
<td>19.2</td>
</tr>
<tr>
<td>70-79</td>
<td>7.7</td>
</tr>
</tbody>
</table>
Table 5. Employment, Volunteer History and Income

<table>
<thead>
<tr>
<th>Employment Status (N= 124)</th>
<th>Response frequency (%N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired (from full-time employment)</td>
<td>88 (71.0)</td>
</tr>
<tr>
<td>Retired (from part-time employment)</td>
<td>21 (16.9)</td>
</tr>
<tr>
<td>Currently employed (full-time)</td>
<td>4 (3.2)</td>
</tr>
<tr>
<td>Currently employed (part-time)</td>
<td>4 (3.2)</td>
</tr>
<tr>
<td>Never employed</td>
<td>7 (5.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volunteer Status (N= 121)</th>
<th>Response frequency (%N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired (from full-time volunteer work)</td>
<td>6 (5.0)</td>
</tr>
<tr>
<td>Retired (from part-time volunteer work)</td>
<td>39 (32.2)</td>
</tr>
<tr>
<td>Currently volunteering (full-time)</td>
<td>2 (1.7)</td>
</tr>
<tr>
<td>Currently volunteering (part-time)</td>
<td>30 (24.8)</td>
</tr>
<tr>
<td>Never engaged in volunteer work</td>
<td>44 (36.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Household Income (N= 100)</th>
<th>Response frequency (%N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$20,000</td>
<td>15 (15.0)</td>
</tr>
<tr>
<td>$20,000-$49,999</td>
<td>48 (48.0)</td>
</tr>
<tr>
<td>$50,000-$79,999</td>
<td>24 (24.0)</td>
</tr>
<tr>
<td>&gt;$80,000</td>
<td>13 (13.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sources of Income (N= 117)</th>
<th>Response frequency (%N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Age Security/Guaranteed Income Supplement</td>
<td>105 (89.7)</td>
</tr>
<tr>
<td>Canada Pension Plan</td>
<td>95 (81.2)</td>
</tr>
<tr>
<td>Dividends and interest on bonds, savings, etc.</td>
<td>49 (41.9)</td>
</tr>
<tr>
<td>Wages, salaries, self-employment income</td>
<td>7 (6.0)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (4.3)</td>
</tr>
</tbody>
</table>
Table 6. Survey Respondents and CCHS Data on General Health, Mental Health, General Life Satisfaction, and Level of Stress

<table>
<thead>
<tr>
<th>Health and Wellbeing Ratings</th>
<th>MWHN Survey</th>
<th>CCHS&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N</td>
<td>%N (95%CI)</td>
</tr>
<tr>
<td>General Health</td>
<td>(N=126)</td>
<td>(N=1,026)</td>
</tr>
<tr>
<td>Excellent</td>
<td>3.2</td>
<td>3.3 (2.4-4.6)</td>
</tr>
<tr>
<td>Very good</td>
<td>33.3</td>
<td>16.5 (14.3-18.9)</td>
</tr>
<tr>
<td>Good</td>
<td>38.9</td>
<td>32.3 (29.5-35.2)</td>
</tr>
<tr>
<td>Fair</td>
<td>23.0</td>
<td>29.6 (26.9-32.5)</td>
</tr>
<tr>
<td>Poor</td>
<td>1.6</td>
<td>18.3 (16.0-20.8)</td>
</tr>
<tr>
<td>General Mental Health</td>
<td>(N=125)</td>
<td>(N=1,002)</td>
</tr>
<tr>
<td>Excellent</td>
<td>32.0</td>
<td>31.4 (28.6-34.3)</td>
</tr>
<tr>
<td>Very good</td>
<td>34.4</td>
<td>33.6 (30.7-36.6)</td>
</tr>
<tr>
<td>Good</td>
<td>27.2</td>
<td>26.0 (23.4-28.9)</td>
</tr>
<tr>
<td>Fair</td>
<td>2.4</td>
<td>6.7 (5.3-8.4)</td>
</tr>
<tr>
<td>Poor</td>
<td>4.0</td>
<td>2.3 (1.5-3.4)</td>
</tr>
<tr>
<td>General Life Satisfaction</td>
<td>(N=126)</td>
<td>(N=995)</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>20.6</td>
<td>32.6 (29.7-35.5)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>55.6</td>
<td>50.8 (47.7-53.9)</td>
</tr>
<tr>
<td>Neither satisfied nor dissatisfied</td>
<td>16.7</td>
<td>7.3 (5.8-9.0)</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>5.6</td>
<td>8.1 (6.6-10.0)</td>
</tr>
<tr>
<td>Very dissatisfied</td>
<td>1.6</td>
<td>1.3 (0.7-2.2)</td>
</tr>
<tr>
<td>Life Stress</td>
<td>(N=125)</td>
<td>(N=1,018)</td>
</tr>
<tr>
<td>Not at all stressful</td>
<td>16.0</td>
<td>19.0 (16.7-21.6)</td>
</tr>
<tr>
<td>Not very stressful</td>
<td>38.4</td>
<td>28.9 (26.2-31.8)</td>
</tr>
<tr>
<td>A bit stressful</td>
<td>37.6</td>
<td>34.1 (31.2-37.1)</td>
</tr>
<tr>
<td>Quite a bit stressful</td>
<td>6.4</td>
<td>13.6 (11.6-15.8)</td>
</tr>
<tr>
<td>Extremely stressful</td>
<td>1.6</td>
<td>4.4 (3.3-5.8)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Canadian Community Health Survey, Cycle 3.1
Table 7. Most Common Long-Term Health Conditions Reported

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>MWHN Survey %N&lt;sup&gt;a&lt;/sup&gt; (N=126)</th>
<th>CCHS&lt;sup&gt;b&lt;/sup&gt;%N (95%CI) (N=1,026)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>84.3</td>
<td>100.0 (filter variable)</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>59.8</td>
<td>58.8 (55.7-61.8)</td>
</tr>
<tr>
<td>Arthritis</td>
<td>41.7</td>
<td>69.2 (66.3-72.0)</td>
</tr>
<tr>
<td>Back problems</td>
<td>26.8</td>
<td>35.9 (33.0-38.9)</td>
</tr>
<tr>
<td>Osteoporosis or osteopenia</td>
<td>26.0</td>
<td>Not available</td>
</tr>
<tr>
<td>Diabetes</td>
<td>24.4</td>
<td>20.2 (17.8-22.7)</td>
</tr>
<tr>
<td>Cancer (all types)</td>
<td>12.6</td>
<td>17.4 (15.1-19.9)</td>
</tr>
<tr>
<td>Bowel disorder</td>
<td>11.8</td>
<td>12.8 (10.9-15.0)</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>8.7</td>
<td>18.1 (15.8-20.6)</td>
</tr>
<tr>
<td>Asthma</td>
<td>6.3</td>
<td>9.7 (8.0-11.7)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Multiple responses permitted; <sup>b</sup>Canadian Community Health Survey, Cycle 3.1
Table 8. *Duration of Chronic Health Conditions Most Affecting Women’s Daily Lives*

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>&lt; 0.5</th>
<th>0.5-1</th>
<th>1-3</th>
<th>4-9</th>
<th>≥10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>2 (2.4)</td>
<td>11 (13.4)</td>
<td>17 (20.7)</td>
<td>3 (3.7)</td>
<td>6 (7.3)</td>
<td>39</td>
</tr>
<tr>
<td>Arthritis</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>5 (6.1)</td>
<td>5 (6.1)</td>
<td>13 (15.9)</td>
<td>23</td>
</tr>
<tr>
<td>Back problems</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>4 (4.8)</td>
<td>3 (3.7)</td>
<td>6 (7.3)</td>
<td>13</td>
</tr>
<tr>
<td>Diabetes</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>2 (2.4)</td>
<td>0 (0.0)</td>
<td>5 (6.1)</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>11</td>
<td>28</td>
<td>11</td>
<td>30</td>
<td>82</td>
</tr>
</tbody>
</table>
Table 9. Impact of Long-Term Health Conditions on Women’s Lives

<table>
<thead>
<tr>
<th>Impact of Health Condition(s) on Daily Life</th>
<th>%N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affects Ability to Travel in Community (N=123)</td>
<td></td>
</tr>
<tr>
<td>Often</td>
<td>9.8</td>
</tr>
<tr>
<td>Sometimes</td>
<td>21.1</td>
</tr>
<tr>
<td>Never</td>
<td>69.1</td>
</tr>
<tr>
<td>Require Assistance to Run Errands or Get to Appointments (N=125)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25.6</td>
</tr>
<tr>
<td>No</td>
<td>74.4</td>
</tr>
<tr>
<td>Reduces Amount or Kind of Leisure-Time PA (N=119)</td>
<td></td>
</tr>
<tr>
<td>Often</td>
<td>16.0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>46.2</td>
</tr>
<tr>
<td>Never</td>
<td>37.8</td>
</tr>
<tr>
<td>Affects Ability to Participate in Light to Moderate PA (N=79)</td>
<td></td>
</tr>
<tr>
<td>Almost always</td>
<td>17 (21.5)</td>
</tr>
<tr>
<td>Frequently</td>
<td>19 (24.1)</td>
</tr>
<tr>
<td>Half the time</td>
<td>15 (19.0)</td>
</tr>
<tr>
<td>Rarely</td>
<td>23 (29.1)</td>
</tr>
<tr>
<td>Never</td>
<td>5 (6.3)</td>
</tr>
<tr>
<td>Affects Ability to Participate in Vigorous PA (N=83)</td>
<td></td>
</tr>
<tr>
<td>Almost always</td>
<td>30 (36.1)</td>
</tr>
<tr>
<td>Frequently</td>
<td>22 (26.5)</td>
</tr>
<tr>
<td>Half the time</td>
<td>14 (16.9)</td>
</tr>
<tr>
<td>Rarely</td>
<td>16 (19.3)</td>
</tr>
<tr>
<td>Never</td>
<td>1 (1.2)</td>
</tr>
</tbody>
</table>
Table 10. Impact of Pain or Discomfort on Activities

<table>
<thead>
<tr>
<th>Amount of Activities Prevented by Pain or Discomfort</th>
<th>Response Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(%N) (N=76)</td>
</tr>
<tr>
<td>Most</td>
<td>17 (22.4)</td>
</tr>
<tr>
<td>Some</td>
<td>16 (21.1)</td>
</tr>
<tr>
<td>A few</td>
<td>24 (31.6)</td>
</tr>
<tr>
<td>None</td>
<td>19 (25.0)</td>
</tr>
</tbody>
</table>
Table 11. *Women’s Sense of Belonging and Involvement in their Community*

<table>
<thead>
<tr>
<th>Measure of Community</th>
<th>MWHN Survey</th>
<th>CCHS&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N</td>
<td>%N (95%CI)</td>
</tr>
<tr>
<td>Sense of Belonging to Community (N=122)</td>
<td>(N=986)</td>
<td></td>
</tr>
<tr>
<td>Very strong</td>
<td>18.9</td>
<td>25.3 (22.6-28.1)</td>
</tr>
<tr>
<td>Somewhat strong</td>
<td>41.0</td>
<td>41.4 (38.4-44.5)</td>
</tr>
<tr>
<td>Somewhat weak</td>
<td>27.0</td>
<td>16.6 (14.4-19.1)</td>
</tr>
<tr>
<td>Very weak</td>
<td>13.1</td>
<td>16.7 (14.5-19.2)</td>
</tr>
<tr>
<td>Membership in Voluntary Organizations or Associations? (N=122)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>55.7</td>
<td>n/a</td>
</tr>
<tr>
<td>No</td>
<td>44.3</td>
<td>n/a</td>
</tr>
<tr>
<td>Frequency of Volunteer Participation (past 12 months) (N=67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least once a week</td>
<td>53.7</td>
<td>n/a</td>
</tr>
<tr>
<td>At least once a month</td>
<td>38.8</td>
<td>n/a</td>
</tr>
<tr>
<td>At least 3-4 times per year</td>
<td>7.5</td>
<td>n/a</td>
</tr>
</tbody>
</table>

<sup>a</sup>Canadian Community Health Survey, Cycle 3.1; n/a – data not available
### Table 12. Observed Frequencies of CR Referral as a Function of Education

<table>
<thead>
<tr>
<th>Education</th>
<th>CR Referral?</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Total</td>
</tr>
<tr>
<td>Did not complete high school</td>
<td>18</td>
<td>14</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Count</td>
<td>18</td>
<td>14</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>% within Education</td>
<td>56.3%</td>
<td>43.8%</td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Completed high school</td>
<td>29</td>
<td>56</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>Count</td>
<td>29</td>
<td>56</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>% within Education</td>
<td>34.1%</td>
<td>65.9%</td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>70</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>Count</td>
<td>47</td>
<td>70</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>40.2%</td>
<td>59.8%</td>
<td></td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table 13. *Observed Frequencies of CR Referral as a Function of Location of Residence*

<table>
<thead>
<tr>
<th>Location of Residence</th>
<th>CR Referral?</th>
<th>Count</th>
<th>% within Location of Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Total</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>24</td>
<td>17</td>
<td>41</td>
</tr>
<tr>
<td>% within Location of Residence</td>
<td>58.5%</td>
<td>41.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>24</td>
<td>54</td>
<td>78</td>
</tr>
<tr>
<td>% within Location of Residence</td>
<td>30.7%</td>
<td>69.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>71</td>
<td>119</td>
</tr>
<tr>
<td>Count</td>
<td>40.3%</td>
<td>59.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Predictor</td>
<td>β</td>
<td>SEβ</td>
<td>Wald’s $\chi^2$</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------</td>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.044</td>
<td>0.033</td>
<td>1.805</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (graduated high-school)</td>
<td>0.706</td>
<td>0.453</td>
<td>2.431</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location of residence (urban)</td>
<td>1.230</td>
<td>0.423</td>
<td>8.460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General health (good-very good-excellent)</td>
<td>0.257</td>
<td>0.463</td>
<td>0.309</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.238</td>
<td>2.507</td>
<td>1.669</td>
</tr>
</tbody>
</table>

*p<0.01
<table>
<thead>
<tr>
<th>Location of Residence</th>
<th>CR Attendance?</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td>24</td>
<td>17</td>
<td>41</td>
</tr>
<tr>
<td>% within Location of Residence</td>
<td>58.5%</td>
<td>41.5%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td>31</td>
<td>48</td>
<td>79</td>
</tr>
<tr>
<td>% within Location of Residence</td>
<td>39.2%</td>
<td>60.8%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>55</td>
<td>65</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45.8%</td>
<td>54.2%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 15. *Observed Frequencies of CR Attendance as a Function of Location of Residence*
<table>
<thead>
<tr>
<th>Physician Referral</th>
<th>CR Attendance?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Not received</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% within Physician referral</td>
<td>87.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Received</td>
<td>14</td>
<td>57</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% within Physician referral</td>
<td>19.7%</td>
<td>80.3%</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>63</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% within Physician referral</td>
<td>46.2%</td>
<td>53.8%</td>
</tr>
</tbody>
</table>

Table 16. Observed Frequencies of CR Attendance as a Function of Physician Referral
Table 17. Observed Frequencies of CR Attendance as a Function of Mental Health Status

<table>
<thead>
<tr>
<th>Mental Health Status</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poor-fair</strong></td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Count</td>
<td>4(^a)</td>
<td>4(^a)</td>
<td>8</td>
</tr>
<tr>
<td>% within CR Attendance</td>
<td>50.0%</td>
<td>50.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Good</strong></td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Count</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>% within CR Attendance</td>
<td>57.6%</td>
<td>42.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Very good</strong></td>
<td>11</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>Count</td>
<td>11</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>% within CR Attendance</td>
<td>27.5%</td>
<td>72.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Excellent</strong></td>
<td>21</td>
<td>17</td>
<td>38</td>
</tr>
<tr>
<td>Count</td>
<td>21</td>
<td>17</td>
<td>38</td>
</tr>
<tr>
<td>% within CR Attendance</td>
<td>55.3%</td>
<td>44.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>55</td>
<td>64</td>
<td>119</td>
</tr>
<tr>
<td>Count</td>
<td>55</td>
<td>64</td>
<td>119</td>
</tr>
<tr>
<td>% within CR Attendance</td>
<td>46.2%</td>
<td>53.8%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\(^a\)Cell count less than 5.
### Table 18. Pairwise Comparisons of CR Attendance and Mental Health Status Using the Holm’s Sequential Bonferroni Method

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Pearson Chi-square</th>
<th>P value</th>
<th>Cramér’s $V$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Self-reported mental health status)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘good’ vs. ‘very good’</td>
<td>6.757</td>
<td>0.009</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.008)</td>
<td></td>
</tr>
<tr>
<td>‘very good’ vs. ‘excellent’</td>
<td>6.208</td>
<td>0.013</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.010)</td>
<td></td>
</tr>
<tr>
<td>‘poor-fair’ vs. ‘very good’</td>
<td>1.571</td>
<td>0.210</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.013)</td>
<td></td>
</tr>
<tr>
<td>‘poor-fair’ vs. ‘good’</td>
<td>0.150</td>
<td>0.698</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.017)</td>
<td></td>
</tr>
<tr>
<td>‘poor-fair’ vs. ‘excellent’</td>
<td>0.074</td>
<td>0.786</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.025)</td>
<td></td>
</tr>
<tr>
<td>‘good’ vs. ‘excellent’</td>
<td>0.038</td>
<td>0.845</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.050)</td>
<td></td>
</tr>
</tbody>
</table>
Table 19. *Observed Frequencies for Preferred Location for PA Participation by CR Attendance*

<table>
<thead>
<tr>
<th>Preferred Location for PA</th>
<th>Did not attend CR (N)</th>
<th>%N</th>
<th>Attended CR (N)</th>
<th>%N</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>In home or building of residence</td>
<td>21</td>
<td>53.8%</td>
<td>18</td>
<td>46.2%</td>
<td>39</td>
</tr>
<tr>
<td>Public park or space in community</td>
<td>7</td>
<td>53.8%</td>
<td>6</td>
<td>46.2%</td>
<td>13</td>
</tr>
<tr>
<td>Community recreation/leisure centre</td>
<td>6</td>
<td>46.2%</td>
<td>7</td>
<td>53.8%</td>
<td>13</td>
</tr>
<tr>
<td>Mall</td>
<td>1</td>
<td>100.0%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
</tr>
<tr>
<td>Hospital or medical clinic</td>
<td>0</td>
<td>0.00%</td>
<td>5</td>
<td>100.0%</td>
<td>5</td>
</tr>
<tr>
<td>Private gym</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>100.0%</td>
<td>1</td>
</tr>
<tr>
<td>Cultural, religious or spiritual centre</td>
<td>1</td>
<td>100.0%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
</tr>
<tr>
<td>YMCA/charitable organization</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>100.0%</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>66.7%</td>
<td>1</td>
<td>33.3%</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>49.4%</td>
<td>39</td>
<td>50.6%</td>
<td>77</td>
</tr>
</tbody>
</table>

Total 77
Table 20. Challenges to PA & Health Promotion Priorities: CR Attendees vs. Non-Attendees

<table>
<thead>
<tr>
<th>Challenges to PA</th>
<th>Attended CR (%N) (N=65)</th>
<th>Did not attend CR (%N) (N=55)</th>
<th>p (α=0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Challenges Cited</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health condition (reduced capacity/mobility)</td>
<td>27.7</td>
<td>32.7</td>
<td>0.55</td>
</tr>
<tr>
<td>Pain</td>
<td>18.5</td>
<td>25.5</td>
<td>0.35</td>
</tr>
<tr>
<td>General lack of energy</td>
<td>23.1</td>
<td>16.4</td>
<td>0.36</td>
</tr>
<tr>
<td>Low motivation</td>
<td>21.5</td>
<td>16.4</td>
<td>0.47</td>
</tr>
<tr>
<td>Fear of injury/worsening of a health condition</td>
<td>7.7</td>
<td>14.5</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>Environmental Challenges Cited</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather</td>
<td>24.6</td>
<td>21.8</td>
<td>0.72</td>
</tr>
<tr>
<td>Lack of time</td>
<td>21.5</td>
<td>10.9</td>
<td>0.12</td>
</tr>
<tr>
<td>No one to exercise or be active with</td>
<td>18.5</td>
<td>14.5</td>
<td>0.57</td>
</tr>
<tr>
<td>Too far to travel to facilities or programs</td>
<td>7.7</td>
<td>18.2</td>
<td>0.08</td>
</tr>
<tr>
<td>Lack of transportation</td>
<td>3.1</td>
<td>16.4</td>
<td>0.01*</td>
</tr>
<tr>
<td><strong>Facility-Related Challenges Cited</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too costly</td>
<td>21.5</td>
<td>23.6</td>
<td>0.78</td>
</tr>
<tr>
<td>Unavailable in community</td>
<td>6.2</td>
<td>18.2</td>
<td>0.04*</td>
</tr>
</tbody>
</table>

*p<0.05
<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SEβ</th>
<th>Wald’s $\chi^2$</th>
<th>df</th>
<th>p</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI for $Exp(B)$</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of residence (urban)</td>
<td>0.115</td>
<td>0.603</td>
<td>0.036</td>
<td>1</td>
<td>0.849</td>
<td>1.122</td>
<td>0.344</td>
<td>3.656</td>
<td></td>
</tr>
<tr>
<td>Mental health (poor-fair)</td>
<td>0.669</td>
<td>0.921</td>
<td>0.529</td>
<td>1</td>
<td>0.467</td>
<td>1.953</td>
<td>0.321</td>
<td>11.87</td>
<td></td>
</tr>
<tr>
<td>Referred to CR</td>
<td>3.478</td>
<td>0.637</td>
<td>29.81</td>
<td>1</td>
<td>&lt;0.001*</td>
<td>32.26</td>
<td>9.259</td>
<td>111.11</td>
<td></td>
</tr>
<tr>
<td>PA facilities unavailable in community</td>
<td>0.350</td>
<td>1.322</td>
<td>0.070</td>
<td>1</td>
<td>0.791</td>
<td>1.420</td>
<td>0.106</td>
<td>18.87</td>
<td></td>
</tr>
<tr>
<td>Transportation available</td>
<td>2.298</td>
<td>1.072</td>
<td>4.595</td>
<td>1</td>
<td>0.032*</td>
<td>9.956</td>
<td>1.218</td>
<td>81.41</td>
<td></td>
</tr>
<tr>
<td>Previous history of regular or structured PA</td>
<td>1.290</td>
<td>0.583</td>
<td>4.892</td>
<td>1</td>
<td>0.027*</td>
<td>3.636</td>
<td>1.159</td>
<td>11.36</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.024</td>
<td>1.651</td>
<td>0.000</td>
<td>1</td>
<td>0.988</td>
<td>0.976</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05
Table 22. *Walking for Transportation*

<table>
<thead>
<tr>
<th>Walking per week</th>
<th>MWHN Survey</th>
<th>CCHS&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N (N=123)</td>
<td>%N (95% CI) (N=981)</td>
</tr>
<tr>
<td>0 hours</td>
<td>8.9</td>
<td>38.7 (35.7-41.8)</td>
</tr>
<tr>
<td>&lt; 1 hour</td>
<td>18.7</td>
<td>14.4 (12.3-16.7)</td>
</tr>
<tr>
<td>1 - 5 hours</td>
<td>37.4</td>
<td>31.8 (28.9-34.8)</td>
</tr>
<tr>
<td>6-10 hours</td>
<td>17.1</td>
<td>7.0 (5.6-8.8)</td>
</tr>
<tr>
<td>11-20 hours</td>
<td>7.3</td>
<td>3.0 (2.1-4.3)</td>
</tr>
<tr>
<td>&gt;20 hours</td>
<td>10.6</td>
<td>5.1 (3.9-6.7)</td>
</tr>
</tbody>
</table>

<sup>a</sup>CCHS – Canadian Community Health Survey, Cycle 3.1
Table 23. *Usual Daily Activities and Work Habits*

<table>
<thead>
<tr>
<th>Activities</th>
<th>MWHN Survey</th>
<th>CCHS(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N (N=125)</td>
<td>%N (95% CI) (N=990)</td>
</tr>
<tr>
<td>Usually sit during the day and don’t walk around very much</td>
<td>16.0</td>
<td>34.8 (31.9-37.8)</td>
</tr>
<tr>
<td>Stand/walk quite a lot during the day, but don’t walk very much</td>
<td>35.2</td>
<td>48.5 (45.4-51.6)</td>
</tr>
<tr>
<td>Usually lift or carry light loads, or have to climb stairs or hills often</td>
<td>47.2</td>
<td>15.7 (13.6-18.1)</td>
</tr>
<tr>
<td>Do heavy work or carry very heavy loads</td>
<td>1.6</td>
<td>1.0 (0.6-1.9)</td>
</tr>
</tbody>
</table>

\(^a\)CCHS – Canadian Community Health Survey, Cycle 3.1
<table>
<thead>
<tr>
<th>Reason</th>
<th>MWHN Survey&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N</td>
</tr>
<tr>
<td></td>
<td>(N=22)</td>
</tr>
<tr>
<td>Physical health condition</td>
<td>10 (45.5)</td>
</tr>
<tr>
<td>Financial constraints/programs too costly</td>
<td>7 (31.8)</td>
</tr>
<tr>
<td>No interest</td>
<td>6 (27.3)</td>
</tr>
<tr>
<td>No time</td>
<td>5 (22.7)</td>
</tr>
<tr>
<td>Difficult communicating</td>
<td>3 (13.6)</td>
</tr>
<tr>
<td>Don’t know where to go</td>
<td>2 (9.1)</td>
</tr>
<tr>
<td>Programs/facilities not available in community</td>
<td>2 (9.1)</td>
</tr>
<tr>
<td>Transportation challenges</td>
<td>2 (9.1)</td>
</tr>
<tr>
<td>Too stressed</td>
<td>2 (9.1)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Multiple responses allowed.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Survey %(N^a) (N=127)</th>
<th>CCHS(^b) %N (95% CI) (N=996)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking/hiking</td>
<td>76.4</td>
<td>57.1 (54.0-60.1)</td>
</tr>
<tr>
<td>Gardening or yard work</td>
<td>44.1</td>
<td>30.2 (27.4-33.1)</td>
</tr>
<tr>
<td>Home exercises</td>
<td>35.4</td>
<td>28.2 (25.5-31.1)</td>
</tr>
<tr>
<td>Exercise class (aerobics or water aerobics)</td>
<td>21.3</td>
<td>8.0 (6.5-9.9)</td>
</tr>
<tr>
<td>Lifting weights or exercises to build strength</td>
<td>17.3</td>
<td>3.0 (2.1-4.2)</td>
</tr>
<tr>
<td>Swimming</td>
<td>13.4</td>
<td>6.8 (5.4-8.5)</td>
</tr>
<tr>
<td>Popular or social dance</td>
<td>11.0</td>
<td>5.3 (4.0-6.8)</td>
</tr>
<tr>
<td>Bicycling/stationary cycling</td>
<td>7.9</td>
<td>1.3 (0.7-2.2)</td>
</tr>
<tr>
<td>Ice skating</td>
<td>0.8</td>
<td>0.1 (0.0-0.7)</td>
</tr>
<tr>
<td>Jogging or running</td>
<td>0.8</td>
<td>0.3 (0.1-0.9)</td>
</tr>
<tr>
<td>Competitive sports (e.g., tennis, golf, bowling)</td>
<td>3.9</td>
<td>n/a</td>
</tr>
<tr>
<td>Other (e.g., yoga, kayaking, canoeing, horseback riding)</td>
<td>3.9</td>
<td>n/a</td>
</tr>
</tbody>
</table>

\(^a\)Multiple responses allowed; \(^b\)Canadian Community Health Survey, Cycle 3.1; n/a=data not available.
### Table 26. Reasons for PA Participation

<table>
<thead>
<tr>
<th>Reason for PA</th>
<th>All reasons&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Most important reason&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N (N=104)</td>
<td>%N (N=103)</td>
</tr>
<tr>
<td>To improve overall health/wellbeing</td>
<td>85.6</td>
<td>68.0</td>
</tr>
<tr>
<td>To manage or prevent health conditions</td>
<td>63.5</td>
<td>13.6</td>
</tr>
<tr>
<td>To feel happy/well</td>
<td>57.7</td>
<td>7.8</td>
</tr>
<tr>
<td>To lose weight</td>
<td>41.3</td>
<td>2.9</td>
</tr>
<tr>
<td>To reduce pain or stiffness</td>
<td>40.4</td>
<td>1.9</td>
</tr>
<tr>
<td>To meet or talk with other people</td>
<td>35.6</td>
<td>1.9</td>
</tr>
<tr>
<td>To make everyday tasks easier</td>
<td>27.9</td>
<td>0.0</td>
</tr>
<tr>
<td>To help care for dependents</td>
<td>9.6</td>
<td>1.9</td>
</tr>
</tbody>
</table>

<sup>a</sup>Multiple responses allowed. <sup>b</sup>Single response only.
Table 27. Current Locations for PA

<table>
<thead>
<tr>
<th>Location</th>
<th>Response frequency&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%N</td>
</tr>
<tr>
<td>(N=103)</td>
<td></td>
</tr>
<tr>
<td>In home or building of residence</td>
<td>71.8</td>
</tr>
<tr>
<td>Public park or space in community</td>
<td>41.7</td>
</tr>
<tr>
<td>Community recreation/leisure centre</td>
<td>20.0</td>
</tr>
<tr>
<td>Mall</td>
<td>17.5</td>
</tr>
<tr>
<td>Hospital or medical clinic</td>
<td>7.8</td>
</tr>
<tr>
<td>Private gym</td>
<td>2.9</td>
</tr>
<tr>
<td>Cultural, religious or spiritual centre</td>
<td>1.9</td>
</tr>
<tr>
<td>University or local school</td>
<td>1.9</td>
</tr>
<tr>
<td>YMCA/charitable organization</td>
<td>1.0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Multiple responses allowed.
Table 28. Challenges to Women’s PA Participation

<table>
<thead>
<tr>
<th>Challenge</th>
<th>MWHN Response Frequency (%N)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Challenges</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>33 (27.7)</td>
</tr>
<tr>
<td>Health condition (reduced capacity or mobility)</td>
<td>36 (30.3)</td>
</tr>
<tr>
<td>Pain</td>
<td>27 (22.7)</td>
</tr>
<tr>
<td>General lack of energy</td>
<td>25 (21.0)</td>
</tr>
<tr>
<td>Low motivation</td>
<td>24 (20.1)</td>
</tr>
<tr>
<td>Fear of injury or of worsening a health condition</td>
<td>13 (10.9)</td>
</tr>
<tr>
<td>No interest</td>
<td>8 (6.7)</td>
</tr>
<tr>
<td>Difficulty communicating</td>
<td>7 (5.9)</td>
</tr>
<tr>
<td>Too stressed</td>
<td>5 (4.2)</td>
</tr>
<tr>
<td><strong>Environmental Challenges</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>40 (36.0)</td>
</tr>
<tr>
<td>Weather</td>
<td>29 (26.1)</td>
</tr>
<tr>
<td>Lack of time</td>
<td>21 (18.9)</td>
</tr>
<tr>
<td>No one to exercise or be active with</td>
<td>21 (18.9)</td>
</tr>
<tr>
<td>Too far to travel to facilities or programs</td>
<td>16 (14.4)</td>
</tr>
<tr>
<td>Lack of transportation</td>
<td>12 (10.8)</td>
</tr>
<tr>
<td>Caregiving responsibilities</td>
<td>11 (9.9)</td>
</tr>
<tr>
<td>Lack of facilities in community</td>
<td>9 (8.1)</td>
</tr>
<tr>
<td>Feeling unsafe in surroundings</td>
<td>8 (7.2)</td>
</tr>
<tr>
<td>Don’t know where to go</td>
<td>6 (5.4)</td>
</tr>
<tr>
<td>Lack of public spaces within community</td>
<td>6 (5.4)</td>
</tr>
<tr>
<td><strong>Facility-Related Challenges</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>59 (54.6)</td>
</tr>
<tr>
<td>Too costly</td>
<td>27 (25.0)</td>
</tr>
<tr>
<td>Unavailable in community</td>
<td>15 (13.9)</td>
</tr>
<tr>
<td>Do not meet individual needs</td>
<td>9 (8.3)</td>
</tr>
<tr>
<td>Physically inaccessible</td>
<td>3 (2.8)</td>
</tr>
<tr>
<td>Under-qualified staff&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>Dealing with other members or program participants</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>Unsafe facilities</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>Cultural differences</td>
<td>1 (0.9)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Multiple responses permitted
## Table 29. Relationship between Personal, Environmental and Facility-Related Challenges and Incidental PA Participation

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Pearson Chi-square</th>
<th>P value (Alpha)</th>
<th>Cramér's V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Challenges</strong>a (N=123)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>8.623</td>
<td>0.003*</td>
<td>0.27</td>
</tr>
<tr>
<td>Health condition (reduced capacity or mobility)</td>
<td>0.010</td>
<td>0.921</td>
<td>0.01</td>
</tr>
<tr>
<td>Pain</td>
<td>0.178</td>
<td>0.673</td>
<td>0.04</td>
</tr>
<tr>
<td>General lack of energy</td>
<td>8.582</td>
<td>0.003*</td>
<td>0.26</td>
</tr>
<tr>
<td>Low motivation</td>
<td>4.388</td>
<td>0.036*</td>
<td>0.19</td>
</tr>
<tr>
<td>Fear of injury or of worsening a health condition</td>
<td>0.078\textsuperscript{b}</td>
<td>0.779</td>
<td>0.03</td>
</tr>
<tr>
<td>No interest</td>
<td>4.599\textsuperscript{b}</td>
<td>0.032*</td>
<td>0.19</td>
</tr>
<tr>
<td>Difficulty communicating</td>
<td>0.628\textsuperscript{b}</td>
<td>0.428</td>
<td>0.07</td>
</tr>
<tr>
<td>Too stressed</td>
<td>2.222\textsuperscript{b}</td>
<td>0.136</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Environmental Challenges</strong>a (N=123)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4.100</td>
<td>0.043*</td>
<td>0.18</td>
</tr>
<tr>
<td>Weather</td>
<td>0.040</td>
<td>0.841</td>
<td>0.02</td>
</tr>
<tr>
<td>Lack of time</td>
<td>1.385</td>
<td>0.239</td>
<td>0.11</td>
</tr>
<tr>
<td>No one to exercise or be active with</td>
<td>4.760</td>
<td>0.029*</td>
<td>0.20</td>
</tr>
<tr>
<td>Too far to travel to facilities or programs</td>
<td>1.830</td>
<td>0.176</td>
<td>0.12</td>
</tr>
<tr>
<td>Lack of transportation</td>
<td>0.010\textsuperscript{b}</td>
<td>0.918</td>
<td>0.01</td>
</tr>
<tr>
<td>Caregiving responsibilities</td>
<td>0.314\textsuperscript{b}</td>
<td>0.575</td>
<td>0.05</td>
</tr>
<tr>
<td>Lack of facilities in community</td>
<td>0.011\textsuperscript{b}</td>
<td>0.915</td>
<td>0.01</td>
</tr>
<tr>
<td>Feeling unsafe in surroundings</td>
<td>0.373\textsuperscript{b}</td>
<td>0.541</td>
<td>0.06</td>
</tr>
<tr>
<td>Don’t know where to go</td>
<td>0.928\textsuperscript{b}</td>
<td>0.335</td>
<td>0.09</td>
</tr>
<tr>
<td>Lack of public spaces within community</td>
<td>0.928\textsuperscript{b}</td>
<td>0.335</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>Facility-Related Challenges</strong>a (N=123)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4.701</td>
<td>0.030*</td>
<td>0.20</td>
</tr>
<tr>
<td>Too costly</td>
<td>0.432</td>
<td>0.511</td>
<td>0.06</td>
</tr>
<tr>
<td>Unavailable in community</td>
<td>0.004\textsuperscript{b}</td>
<td>0.950</td>
<td>0.01</td>
</tr>
<tr>
<td>Do not meet individual needs</td>
<td>2.429\textsuperscript{b}</td>
<td>0.119</td>
<td>0.14</td>
</tr>
<tr>
<td>Physically inaccessible</td>
<td>0.004\textsuperscript{b}</td>
<td>0.952</td>
<td>0.01</td>
</tr>
<tr>
<td>Under-qualified staff</td>
<td>1.876\textsuperscript{b}</td>
<td>0.171</td>
<td>0.12</td>
</tr>
<tr>
<td>Dealing with other members or program participants</td>
<td>1.876\textsuperscript{b}</td>
<td>0.171</td>
<td>0.12</td>
</tr>
<tr>
<td>Unsafe facilities</td>
<td>0.542\textsuperscript{b}</td>
<td>0.462</td>
<td>0.07</td>
</tr>
<tr>
<td>Cultural differences</td>
<td>0.542\textsuperscript{b}</td>
<td>0.462</td>
<td>0.07</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Multiple responses permitted; \textsuperscript{b}One or more cells in cross tabs analyses had an expected count of less than five; \textsuperscript{*}p<0.05
### Table 30. Relationship between Personal, Environmental and Facility-Related Challenges and Respondents’ Leisure Time PA Participation

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Pearson Chi-square</th>
<th>( P ) value (Alpha)</th>
<th>Cramér’s ( V )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Challenges(^a)</strong> ((N=127))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0.731</td>
<td>0.392</td>
<td>0.08</td>
</tr>
<tr>
<td>Health condition (reduced capacity or mobility)</td>
<td>0.053</td>
<td>0.818</td>
<td>0.02</td>
</tr>
<tr>
<td>Pain</td>
<td>1.792</td>
<td>0.181</td>
<td>0.12</td>
</tr>
<tr>
<td>General lack of energy</td>
<td>0.226</td>
<td>0.634</td>
<td>0.04</td>
</tr>
<tr>
<td>Low motivation</td>
<td>0.031</td>
<td>0.860</td>
<td>0.02</td>
</tr>
<tr>
<td>Fear of injury or of worsening a health condition</td>
<td>0.545(^b)</td>
<td>0.461</td>
<td>0.07</td>
</tr>
<tr>
<td>No interest</td>
<td>0.911(^b)</td>
<td>0.340</td>
<td>0.09</td>
</tr>
<tr>
<td>Difficulty communicating</td>
<td>0.358(^b)</td>
<td>0.550</td>
<td>0.05</td>
</tr>
<tr>
<td>Too stressed</td>
<td>0.774(^b)</td>
<td>0.379</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Environmental Challenges(^a)</strong> ((N=127))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0.425</td>
<td>0.515</td>
<td>0.06</td>
</tr>
<tr>
<td>Weather</td>
<td>0.327</td>
<td>0.567</td>
<td>0.05</td>
</tr>
<tr>
<td>Lack of time</td>
<td>0.342(^b)</td>
<td>0.559</td>
<td>0.05</td>
</tr>
<tr>
<td>No one to exercise or be active with</td>
<td>0.000(^b)</td>
<td>0.982</td>
<td>0.00</td>
</tr>
<tr>
<td>Too far to travel to facilities or programs</td>
<td>0.590(^b)</td>
<td>0.442</td>
<td>0.07</td>
</tr>
<tr>
<td>Lack of transportation</td>
<td>0.355(^b)</td>
<td>0.551</td>
<td>0.05</td>
</tr>
<tr>
<td>Caregiving responsibilities</td>
<td>0.198(^b)</td>
<td>0.657</td>
<td>0.04</td>
</tr>
<tr>
<td>Lack of facilities in community</td>
<td>0.840(^b)</td>
<td>0.359</td>
<td>0.08</td>
</tr>
<tr>
<td>Feeling unsafe in surroundings</td>
<td>0.585(^b)</td>
<td>0.444</td>
<td>0.07</td>
</tr>
<tr>
<td>Don’t know where to go</td>
<td>1.948(^b)</td>
<td>0.163</td>
<td>0.12</td>
</tr>
<tr>
<td>Lack of public spaces within community</td>
<td>0.169(^b)</td>
<td>0.681</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Facility-Related Challenges(^a)</strong> ((N=127))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2.896</td>
<td>0.089</td>
<td>0.15</td>
</tr>
<tr>
<td>Too costly</td>
<td>0.495</td>
<td>0.482</td>
<td>0.06</td>
</tr>
<tr>
<td>Unavailable in community</td>
<td>0.998(^b)</td>
<td>0.318</td>
<td>0.09</td>
</tr>
<tr>
<td>Do not meet individual needs</td>
<td>2.996(^b)</td>
<td>0.083</td>
<td>0.15</td>
</tr>
<tr>
<td>Physically inaccessible</td>
<td>0.950(^b)</td>
<td>0.330</td>
<td>0.09</td>
</tr>
<tr>
<td>Under-qualified staff</td>
<td>0.312(^b)</td>
<td>0.577</td>
<td>0.05</td>
</tr>
<tr>
<td>Dealing with other members or program participants</td>
<td>0.312(^b)</td>
<td>0.577</td>
<td>0.05</td>
</tr>
<tr>
<td>Unsafe facilities</td>
<td>0.312(^b)</td>
<td>0.577</td>
<td>0.05</td>
</tr>
<tr>
<td>Cultural differences</td>
<td>0.312(^b)</td>
<td>0.577</td>
<td>0.05</td>
</tr>
</tbody>
</table>

\(^a\)Multiple responses permitted; \(^b\)One or more cells in cross tabs analyses had an expected count of less than five; \(p<0.05\)
Table 31. Social Support for PA Participation

<table>
<thead>
<tr>
<th>Type of Support</th>
<th>MWHN Response Frequency (N=118)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often is someone available to get together with for PA?</td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>37 (31.4)</td>
</tr>
<tr>
<td>A little of the time</td>
<td>17 (14.4)</td>
</tr>
<tr>
<td>Some of the time</td>
<td>23 (19.5)</td>
</tr>
<tr>
<td>Most of the time</td>
<td>29 (24.6)</td>
</tr>
<tr>
<td>All of the time</td>
<td>12 (10.2)</td>
</tr>
<tr>
<td>How often is someone available to help you to get to a PA programfacility?</td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>32 (29.6)</td>
</tr>
<tr>
<td>A little of the time</td>
<td>10 (9.3)</td>
</tr>
<tr>
<td>Some of the time</td>
<td>19 (17.6)</td>
</tr>
<tr>
<td>Most of the time</td>
<td>22 (20.4)</td>
</tr>
<tr>
<td>All of the time</td>
<td>25 (23.1)</td>
</tr>
<tr>
<td>How often do you receive support from someone to participate in PA?</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>24 (21.8)</td>
</tr>
<tr>
<td>Rarely</td>
<td>23 (20.9)</td>
</tr>
<tr>
<td>Half the time</td>
<td>9 (8.2)</td>
</tr>
<tr>
<td>Frequently</td>
<td>19 (17.3)</td>
</tr>
<tr>
<td>Almost always</td>
<td>35 (31.8)</td>
</tr>
</tbody>
</table>
Table 32. Logistic Regression Analysis of Factors Affecting Incidental PA Participation

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SEβ</th>
<th>Wald’s $\chi^2$</th>
<th>df</th>
<th>p</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-2.994</td>
<td>0.995</td>
<td>9.053</td>
<td>1</td>
<td>0.003</td>
<td>.050</td>
<td></td>
</tr>
<tr>
<td>Strong sense of community belonging</td>
<td>0.946</td>
<td>0.456</td>
<td>4.298</td>
<td>1</td>
<td>0.038*</td>
<td>2.577</td>
<td>1.052 6.289</td>
</tr>
<tr>
<td>Energy for PA</td>
<td>1.759</td>
<td>0.801</td>
<td>4.815</td>
<td>1</td>
<td>0.028*</td>
<td>5.804</td>
<td>1.207 27.916</td>
</tr>
<tr>
<td>Motivation for PA</td>
<td>0.439</td>
<td>0.652</td>
<td>0.453</td>
<td>1</td>
<td>0.501</td>
<td>1.551</td>
<td>.432 5.561</td>
</tr>
<tr>
<td>Partner for PA</td>
<td>0.929</td>
<td>0.710</td>
<td>1.710</td>
<td>1</td>
<td>0.191</td>
<td>2.532</td>
<td>.629 10.187</td>
</tr>
</tbody>
</table>

*p<0.05
### Table 33. Resources Sought for Information or Advice on Exercise/PA

<table>
<thead>
<tr>
<th>Resource</th>
<th>%N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>45.3</td>
</tr>
<tr>
<td>Recreation centre</td>
<td>43.4</td>
</tr>
<tr>
<td>Book or pamphlet</td>
<td>41.5</td>
</tr>
<tr>
<td>Friend</td>
<td>30.2</td>
</tr>
<tr>
<td>Physical therapist</td>
<td>24.5</td>
</tr>
<tr>
<td>Community health centre</td>
<td>20.8</td>
</tr>
<tr>
<td>Exercise specialist</td>
<td>18.9</td>
</tr>
<tr>
<td>Family member</td>
<td>18.9</td>
</tr>
<tr>
<td>Nurse</td>
<td>17.0</td>
</tr>
<tr>
<td>Online</td>
<td>15.1</td>
</tr>
<tr>
<td>Chiropractor</td>
<td>5.7</td>
</tr>
<tr>
<td>Alternative health provider (e.g., massage therapist, acupuncturist)</td>
<td>1.9</td>
</tr>
<tr>
<td>Type and Frequency of Support</td>
<td>%N</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Discussed level of PA or specific things to increase PA participation \ (N=113)</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>13.3</td>
</tr>
<tr>
<td>Usually</td>
<td>25.7</td>
</tr>
<tr>
<td>Sometimes</td>
<td>23.0</td>
</tr>
<tr>
<td>Rarely</td>
<td>12.4</td>
</tr>
<tr>
<td>Never</td>
<td>25.7</td>
</tr>
<tr>
<td>Helped to increase PA level (e.g., provided information about PA, helped to set goals, referral to PA program \ (N=111)</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>8.1</td>
</tr>
<tr>
<td>Usually</td>
<td>17.1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>13.5</td>
</tr>
<tr>
<td>Rarely</td>
<td>14.4</td>
</tr>
<tr>
<td>Never</td>
<td>46.8</td>
</tr>
</tbody>
</table>
Table 35. Women’s Current Health Maintenance Practices

<table>
<thead>
<tr>
<th>Health practice</th>
<th>% N Engaging in Health Practice&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take prescribed medication</td>
<td>95.9</td>
</tr>
<tr>
<td>Spend time with family and friends</td>
<td>87.6</td>
</tr>
<tr>
<td>Eat a balanced diet</td>
<td>85.1</td>
</tr>
<tr>
<td>Take vitamins or supplements</td>
<td>75.2</td>
</tr>
<tr>
<td>Take time to relax</td>
<td>73.6</td>
</tr>
<tr>
<td>Exercise or be physically active</td>
<td>71.1</td>
</tr>
<tr>
<td>Get medical advice or treatment</td>
<td>71.1</td>
</tr>
<tr>
<td>Regularly monitor health conditions</td>
<td>70.2</td>
</tr>
<tr>
<td>Drink a limited amount of alcohol</td>
<td>68.6</td>
</tr>
<tr>
<td>Avoid smoking</td>
<td>67.8</td>
</tr>
<tr>
<td>Get enough sleep to feel rested</td>
<td>66.1</td>
</tr>
<tr>
<td>Maintain a healthy body weight</td>
<td>64.5</td>
</tr>
<tr>
<td>Spiritual or religious practice</td>
<td>47.9</td>
</tr>
<tr>
<td>Manage stress level</td>
<td>41.3</td>
</tr>
</tbody>
</table>

<sup>a</sup> Multiple responses permitted.
<table>
<thead>
<tr>
<th>Challenge</th>
<th>%N Reporting Challenge (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical condition</td>
<td>33.3</td>
</tr>
<tr>
<td>Lack of will power or self-discipline</td>
<td>33.3</td>
</tr>
<tr>
<td>Disability or health problem</td>
<td>27.8</td>
</tr>
<tr>
<td>Family responsibilities</td>
<td>22.2</td>
</tr>
<tr>
<td>Too costly/financial constraints</td>
<td>16.7</td>
</tr>
<tr>
<td>Transportation challenges</td>
<td>16.7</td>
</tr>
<tr>
<td>Not available in the area</td>
<td>8.3</td>
</tr>
<tr>
<td>Work or volunteer schedule</td>
<td>8.3</td>
</tr>
<tr>
<td>Weather</td>
<td>5.6</td>
</tr>
<tr>
<td>Too stressed</td>
<td>2.8</td>
</tr>
</tbody>
</table>
Table 37. Interview participant demographic information

<table>
<thead>
<tr>
<th>ID</th>
<th>Age</th>
<th>Residence</th>
<th>CR?</th>
<th>Marital status</th>
<th>Children?</th>
<th>Employment/Vocational history</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWHN007NG</td>
<td>81</td>
<td>R</td>
<td>N</td>
<td>W</td>
<td>Y</td>
<td>Homemaker</td>
</tr>
<tr>
<td>MWHN010MD</td>
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<td>N</td>
<td>M</td>
<td>Y</td>
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Legend: R=rural; U=urban; Y=yes; N=no; D=divorced; M=married; W=widowed
Figure 1. *Research supporting the socio-environmental approach to heart health*

Source: (Labonte, 1992, p.122)
Figure 2. Influence of feminism and philosophies of science on feminist approaches to social science research

Source: (Campbell & Wasco, 2000, p.774)
Appendices

Appendix A: Survey Cover Letter

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

October 4, 2010

Dear Participant,

Did you know that more women than men live with chronic health conditions such as heart disease, diabetes, osteoporosis, and arthritis? And while PA is an excellent way of preventing and managing many of these chronic health conditions, many women living with these health conditions do not (or are not able to) participate in PA. Why is this??? Studies have shown that the needs of women with respect to PA differ from men. Older women also face many challenges to participating in PA programs in the community, such as a lack of transportation or high program fees.

To address this important community health question, we need your help! We are writing to ask for your help in a research study being conducted by Danielle Rolfe (a University of Toronto PhD student living in Ottawa) with supervision from researchers from the University of Toronto and the Ottawa Heart Institute. The purpose of the study is to learn more about how community PA programs can be developed to meet the needs of older women living with cardiovascular disease and other chronic health conditions. You have been selected to participate in this study because you are a woman, aged 65 years or older, have received services at the University of Ottawa Heart Institute, and you provided consent to be contacted for research purposes.

You can help us very much by taking a few minutes to complete the enclosed survey and share your experiences and suggestions about your PA needs. By completing the survey and returning it in the stamped envelope you are agreeing to participate in this research study. However, if you decide not to participate in this research study, please let us know by returning the blank questionnaire in the enclosed stamped envelope and we will immediately remove your name from the mailing list. Also, if by some chance we’ve made a mistake and you are not a woman, aged 65 years or older, who has received services at the University of Ottawa Heart Institute, please answer only the first question in the questionnaire (and return the rest of it blank).

The development of programs in the community that matter to women like you depends on the input provided by this survey. We truly value and appreciate your participation and input!

Yours sincerely,

______________________________
Robert D. Reid, PhD, MBA
Associate Director, Minto Prevention and Rehabilitation Centre
University of Ottawa Heart Institute
Appendix B: Patient Information Sheet and Consent Form

Meeting Women’s Health Needs in the Community
HI Protocol # 2009 21501H

Patient Information Sheet and Consent Form
Version Date: June 21, 2010

Principal Investigator:
Robert D. Reid, PhD, MBA (Ottawa site supervisor) 613-761-5058

Co-Investigator(s):
Danielle Rolfe, MSc (PhD student) 613-889-5391
Scott Thomas, PhD (Toronto site co-supervisor) 416-978-6957
Karen Yoshida, PhD (Toronto site co-supervisor) 416-978-6589

Please read this Patient Information Sheet carefully and ask as many questions as you like before deciding whether to participate.

Introduction:
You have been asked to participate in a research project entitled: Meeting Women’s Health Needs in the Community. The purpose of this project is to identify and explore the PA and health promotion needs of older women who live with cardiovascular disease and other chronic health conditions. Your participation will help the investigators to develop PA programs and services within communities that meet your needs and those of people like you.

You have been selected, along with nearly 300 other women like yourself who have visited the Ottawa Heart Institute, to participate in a study exploring the community-based PA needs and experiences of older women aged 65 years or older, and who, at some point in the past, received care for a heart condition.

We know that more women than men live with chronic health conditions such as heart disease, diabetes, osteoporosis, and arthritis. While PA is an excellent way of preventing and managing many of these chronic health conditions, research has shown that many older women do not (or are unable to) participate in PA programs in their community.

Research also suggests that the needs of women with respect to PA differ from men. Older women may face barriers to accessing community PA programs, such as a lack of transportation or costly program fees. To address this important community health question, you are being asked to participate in a study to help us better understand your
Procedure:
Participation in the study involves completing a survey, and if you choose to, a one-time only, in-person interview with the researcher. Your participation in both the survey and the interview is completely voluntary and will in no way affect the care that you receive at the Ottawa Heart Institute. You can choose to participate in just the survey, without participating in an individual interview.

Survey Participation
If you agree to participate in the study you will complete the enclosed survey and return it in the postage paid pre-addressed envelope to the investigators. The survey should take you between 30-45 minutes to complete. If there are any questions on the survey that you do not feel comfortable answering, you are not required to answer them. By returning the completed survey, you are providing your consent to participate in the study.

Interview Participation
If you agree to be contacted for an interview (you will indicate this on the ‘Follow-Up Interview Form’), a member of the research team may contact you to schedule an interview. You will be given another opportunity to decide at this time whether you would like to participate in the interview.

The purpose of the interview is to give you an opportunity to expand on any information that you provided in the survey. The interview is also an opportunity for the researcher to ask you whether (based on your, and other women’s responses) her analysis and interpretation of the survey data reflects your experiences. If there are any questions during the interview that you do not feel comfortable answering, you may choose not to answer these questions.

With your permission, the interview will be audiotaped and transcribed. The researcher may also take written notes during the interview. You may be called once on the telephone after the interview to clarify any information you provided during the interview.

Participation in the one-time-only follow-up interview with a member of the research team would last no longer than 1-2 hours. You and the researcher will arrange a time and location for the interview that is convenient for you.

Risks and Discomforts of Participation:
There are no foreseeable risks that may result from your participation in the study.

Benefits of Participation:
You may not receive any direct benefit from your participation in this research. Your participation in this research may help to develop programs that meet the needs of older
women. By understanding your needs, we can do more to develop suitable programs in your community, in the future. As well, the challenges that you currently face may help older women like yourself, who live in the community with a chronic health condition, in the future.

Compensation/Remuneration:
Participation in this study does not involve any direct payment to you. The cost to return the survey is covered by the enclosed postage paid stamped envelope. Since interviews will most likely occur in your home at a location close to your home, you will bear no costs to travel to the interview. In the event that you must travel to the interview location, any costs that you incur will be compensated by the research team (i.e., travel or parking expenses).

In the event of research-related side-effects or injury, you will be provided with appropriate medical treatment. By participating in the study and signing this Consent, you are not waiving your legal rights that may be available to you.

Confidentiality:
As part of this research protocol, your health records were confidentially and securely reviewed by an administrator at the Ottawa Heart Institute Health Records Department, ONLY for the purposes of determining your eligibility to participate in this study. No other members of the research team have reviewed (or will review) your health records. Your relevant records may be reviewed by representatives of the Heart Institute Human Research Ethics Board under the supervision of the Investigator.

Dr. Reid, as a clinical and research staff member at the Ottawa Heart Institute, will not know whether or not you choose to participate in the study.

You, your responses to the study survey and/or interview, and your health records will not be identifiable in publications or presentations. Study documents will be kept in a locked file cabinet and on a password-protected computer in the office of the investigator. Only members of the research team will have access to the data. You will be identified by a code number only. No identifying information will leave the hospital, and your initials will not be used to identify you. Any personal or identifying information will be removed if quotations from your interview are used. All study records will be destroyed 15 years following the conclusion of the study, at which time they will be confidentially shredded and deleted. If you would like, at the conclusion of the study you will be provided with a copy of the study results.

Ethics:
The Human Research Ethics Board (HREB) of the University of Ottawa Heart Institute has approved this protocol. The HREB considers the ethical aspects of all Heart Institute research projects involving human subjects. This project has also been reviewed and approved by the University of Toronto Health Sciences Research Ethics Board. If you have
any questions about your rights as a research subject, you may talk to the Chair of the Human Research Ethics Board at 613-798-5555, ext. 19865. You may also contact Rachel Zand, Director, Office of Research Ethics, University of Toronto at 416-946-3389 or Rachel.zand@utoronto.ca.

**Participation:**
Participation in research is completely voluntary. You are free to choose to participate or not to participate in this research study. You are free to choose to complete or not complete the enclosed survey. You also are not required to answer any questions that you do not wish to answer. By completing and returning the survey, you are providing your consent to participate in the study. By returning a blank survey, your name will be removed from the mailing list.

If you indicate (on your completed survey) that you are willing to participate in an interview, you may be contacted by a member of the research team to schedule an interview. If you agree to participate in an interview, you will be required to provide written consent prior to the interview. Your participation in an interview is completely voluntary and you may choose not to answer any question.

If you agree to participate in this study, you may choose to withdraw your participation at any time. This will not affect your present or future care at the University of Ottawa Heart Institute, or at The Ottawa Hospital.
Consent to Participate in Research (to be completed by interview participants only):
I understand that I am being asked to participate in a research study about the PA and health promotion needs of older women who live with cardiovascular disease and other health conditions. This study has been explained to me by Danielle Rolfe.

I have read and understood this 4 page Patient Information Sheet and Consent Form. All my questions at this time have been answered to my satisfaction. If I have any further questions about this study, I may contact Danielle Rolfe at 613-889-5391 or Dr. Robert Reid at 613-761-5058.

I will receive a signed copy of this Patient Information Sheet and Consent Form.

I voluntarily agree to participate in this study.

☐ I would like a summary of the research findings sent to me at the end of the study.

_____________________________________________________
Patient’s Name (Please Print)

_____________________________________________________
Patient’s Signature Date

_____________________________________________________
Name of Investigator/Delegate (Please Print)

_____________________________________________________
Signature of Investigator/Delegate Date

(Valid until November 23, 2011)
Appendix C: Survey

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

Survey Booklet
Version Date: June 21, 2010

To verify your eligibility to participate in the study, please respond to the following preliminary questions by placing a checkmark in the appropriate boxes:

Are you a woman?
☐ Yes ➔ Please continue  ☐ No ➔ Please return the survey in the enclosed envelope

Are you aged 65 years or older?
☐ Yes ➔ Please continue  ☐ No ➔ Please return the survey in the enclosed envelope

Have you received service(s) for a health condition at the Ottawa Heart Institute at some point in the past?
☐ Yes ➔ Please continue  ☐ No ➔ Please return the survey in the enclosed envelope

Are you able to read and understand written English and/or French?
☐ Yes ➔ Please continue  ☐ No ➔ Please return the survey in the enclosed envelope

Have you ever been told by a doctor that, because of a health condition, you should not exercise or engage in PA beyond what you do as part of your everyday activities (e.g., dressing, bathing, light housework, etc.)?
☐ Yes ➔ Please return the survey in the enclosed envelope  ☐ No ➔ Please complete the survey

Thank you for responding to these screening questions. We sincerely appreciate your time and willingness to be involved in this important research study!
This survey will ask you about your experiences with PA, your general health and experiences with long-term health conditions. In this survey, the term ‘health’ means not only the absence of disease or injury, but also your general physical, mental and social wellbeing.

**PA Participation**

First, a couple of questions about the amount of time you spent in the past 3 months on PA at work or while doing daily chores around the house.

1. In a typical week in the past 3 months, how many hours did you usually spend walking to appointments or to work/volunteer work or while doing errands? *Circle ONE answer.*
   a) None
   b) Less than 1 hour
   c) From 1 to 5 hours
   d) From 6 to 10 hours
   e) From 11 to 20 hours
   f) More than 20 hours

2. Over the past 3 months, which of the following best describes your usual daily activities or work habits? *Circle ONE answer.*
   a) I usually sit during the day and don’t walk around very much
   b) I stand or walk quite a lot during the day but don’t have to carry or lift things very often
   c) I usually lift or carry light loads, or have to climb stairs or hills often
   d) I do heavy work or carry very heavy loads

The following questions ask you about physical activities that you do that are NOT related to work or running errands. Physical activities in this section include anything you do to be physically active in your own time, by choice.

3. As an adult (since you were 18 years old), have you ever regularly (i.e., more than once per week, for 3 months or longer) participated in PA or followed a structured exercise program? *Circle ONE answer.*
   a) Yes
   b) No

4. Have you done any of the following in the past 3 months? *Circle all that apply.*
   a) Walking for exercise
   b) Gardening or yard work
   c) Popular or social dance
   d) Swimming
   e) Lifting weights or exercises to build strength
   f) Home exercises
   g) Exercise class or aerobics
   h) Bicycling
   i) Ice skating
   j) Jogging or running
   k) Skiing
   l) Competitive sports (e.g., softball, tennis, golf, bowling)
   m) Other (please specify)
   
   (If you have done NO PA in the past 3 months, why is this?) *Check all that apply.*
   □ No interest
☐ No time
☐ Don’t know where to go
☐ Physical health condition(s)
☐ Too costly/ financial constraints
☐ Programs or facilities are not available in my community
☐ Transportation problems
☐ Difficulty communicating (e.g., hard of hearing/deaf, blind/limited vision, speech)
☐ Too stressed

If you answered n) No PA in the previous question, please skip to question 13.

5. How often do you participate in exercise/ physical activities? Circle ONE answer.
   a) Less than once per week
   b) 1-2 times per week
   c) 3-4 times per week
   d) 5-7 times per week

6. What types of activities do you do? Circle all that apply.
   a) Walking
   b) Stretching
   c) Aerobics or group fitness class
   d) Strength training or lifting weights
   e) Yoga
   f) Tai Chi
   g) Jogging or running
   h) Social or cultural dance
   i) Swimming
   j) Cycling
   k) Rowing
   l) Skiing
   m) Ice skating
   n) Competitive sports (e.g., golf, softball, badminton, tennis, volleyball)
   o) Other (please specify) __________________________________________

7. Where do you participate in PA? Circle all that apply.
   a) In your home or building
   b) Public park or space in your community
   c) Community recreation or leisure centre
   d) Private gym
   e) YMCA or other charitable organization
   f) Mall
   g) Cultural, religious or spiritual centre
   h) University or local school
   i) Hospital or medical/health clinic
   j) Other (please specify) __________________________________________

8. In general, where do you prefer to be active? Circle one answer.
   a) In your home or building
   b) Public park or space in your community
   c) Community recreation or leisure centre
   d) Private gym
   e) YMCA or other charitable organization
   f) Mall
   g) Cultural, religious or spiritual centre (for example, at church)
   h) At a local school or university
   i) Hospital or medical/health clinic
j) Other (please specify) ________________________________

9. Usually, how do you travel to PA programs or facilities in your community? Circle one answer.
   a) None, the program(s) is/are located in my place of residence
   b) Walking
   c) Public transit
   d) Accessible transit for people with disabilities
   e) By car, driven by myself
   f) By car, driven by someone else
   g) Taxi
   h) Bicycle
   i) Other (please specify) ________________________________

10. In general, do you prefer to be active: Circle one answer.
    a) On your own?
    b) With a partner?
    c) In a group?

11. What are your reasons for being physically active during your leisure time? Circle all that apply.
    a) To improve my overall health and wellbeing
    b) To manage or prevent health condition(s)
    c) To meet or talk with other people
    d) To reduce pain or stiffness
    e) To lose weight
    f) To make everyday tasks easier
    g) To help me care for children/grandchildren or a spouse
    h) To feel happy or well
    i) Other (please specify) ________________________________

12. Of the reasons that you selected above, what is the single most important reason that you are active? Circle one answer.
    a) To improve my overall health and wellbeing
    b) To manage or prevent health condition(s)
    c) To meet or talk with other people
    d) To reduce pain or stiffness
    e) To lose weight
    f) To make everyday tasks easier
    g) To help me care for children/grandchildren or a spouse
    h) To feel happy or well
    i) Other (please specify) ________________________________

13. Compared to my current level of PA, I would like my level of activity to be: Circle one answer.
    a) Higher
    b) Lower
    c) The same
14. Compared to my current participation in PA programs in my community, I would like my level of participation to be: *Circle one answer.*
   a) Higher
   b) Lower
   c) The same

15. Please tell me the answer that best describes how true or false the following statement is for you: “I am as physically active as my peers.” *Circle one answer.*
   a) Definitely true
   b) Mostly true
   c) Not sure
   d) Mostly false
   e) Definitely false

---

**Access to PA Information & Services**

The next section asks you about your recent experiences (in the past year) with exercise or PA programs, facilities or services in your community.

16. In the past 12 months, have you looked for information or advice on exercise/PA?
   a) Yes
   b) No → please skip to question 22
17. In general, where would you go for information or advice on exercise/PA? *Circle all that apply.*

a) Exercise specialist (e.g., fitness instructor, personal trainer, kinesiologist, physical educator)
b) Physical therapist
c) Doctor
d) Nurse
e) Chiropractor
f) Alternative health provider (e.g., massage therapist, homeopath, acupuncture)
g) Family member
h) Friend
i) Recreation centre
j) Community health centre
k) Book, information pamphlet
l) Internet/online
m) Other *please specify* ______________________________

18. What resources did you use to find information or advice on exercise/PA? *Circle all that apply.*

a) Community health or recreation centre
b) Book
c) Information pamphlet
d) Internet/online
e) Other *please specify* ______________________________
f) None of the above

19. Did you receive the information or advice on exercise/PA that you were looking for?
   a) Yes
   b) No

20. Overall, how satisfied were you with the way the information or advice was provided? Were you: *Circle one answer.*
   a) Very satisfied?
b) Somewhat satisfied?
c) Neither satisfied, nor dissatisfied?
d) Somewhat dissatisfied?
e) Very dissatisfied?
21. Overall, how would you rate the quality of the information/advice available or provided? 

*Circle one answer.*

a) Excellent?

b) Good?

c) Fair?

d) Poor?

__________________________________________________________________

**Challenges to Participating in PA**

22. What types of programs would you like to participate in, but you are not currently able to find in your community? *Circle all that apply.*

a) Walking  
b) Stretching  
c) Aerobics or group fitness class  
d) Strength training or lifting weights  
e) Yoga  
f) Tai Chi  
g) Jogging or running  
h) Social or cultural dance  
i) Swimming  
j) Cycling  
k) Rowing  
l) Skiing  
m) Ice skating  
n) Competitive sports (e.g., golf, softball, badminton, tennis, volleyball)  
o) Other *(please specify)*  
p) None, I’m able to find all the programs that I look for

23. Which personal challenges affect your ability to exercise or be physically active? *Circle all that apply.*

a) No interest  
b) General lack of energy  
c) Low motivation  
d) Health condition(s)  
e) Too stressed  
f) Pain  
g) Fear of injury or of worsening a health condition  
h) Difficulty communicating (e.g., hard of hearing/deaf, blind/limited vision, speech)  
i) Other *(please specify)*  
j) None

24. Which of the following affects your ability to exercise or participate in PA? *Circle all that apply.*

a) Lack of time  
b) Feeling unsafe in your surroundings  
c) Caregiving responsibilities  
d) Don’t know where to go  
e) Lack of public spaces for PA (e.g., parks, sidewalks)
f) Lack of facilities in your community
g) Too far to travel to facilities or programs
h) Lack of transportation
i) No one to exercise/be active with
j) Weather (too hot, too cold, icy conditions)
k) Other (please specify) ____________________________________
l) None

25. What facility-related issues prevent you from participating in programs in your community? Circle all that apply.
   a) Unavailable in your community
   b) Do not meet your needs
   c) Too costly/financial constraints
   d) Physically inaccessible
   e) Unsafe facilities
   f) Under-qualified staff
   g) Dealing with other members/users in programs or facilities
   h) Cultural differences
   i) Other (please specify) ____________________________________
i) None

26. When you need it, how often is someone available to you to get together with for exercise/PA (in the past 12 months)? Circle one answer.
   a) None of the time
   b) A little of the time
   c) Some of the time
   d) Most of the time
   e) All of the time

27. When you need it, how often is someone available to you to take you/help you to get to an exercise/PA program or facility (in the past 12 months)? Circle one answer.
   a) None of the time
   b) A little of the time
   c) Some of the time
   d) Most of the time
   e) All of the time

28. When you need it, how often do you receive the support of someone in order to participate in an exercise/PA program (in the past 12 months)? Circle one answer.
   a) Almost always
   b) Frequently
   c) Half the time
   d) Rarely
   e) Never

Your Experiences with Your Doctors(s)
29. In the last 12 months, have you visited your family doctor or a specialist (e.g., cardiologist, endocrinologist)?
30. In the last 12 months, did your doctor(s) talk about your level of PA or specific things you could do to increase your PA participation? Circle one answer.
   a) Never
   b) Rarely
   c) Sometimes
   d) Usually
   e) Always
   
31. In the last 12 months, did your doctor(s) help you to increase your level of PA (e.g., provided you with written information about PA, help you to set specific activity goals, refer you to a PA program, etc.)? Circle one answer.
   a) Never
   b) Rarely
   c) Sometimes
   d) Usually
   e) Always

32. Has any doctor ever referred you to a hospital-based program that involved PA to help you manage a health condition (e.g., a cardiac rehabilitation or diabetes management program, etc.)? Circle one answer.
   a) Yes ➔ please specify the type of program __________________________
   b) No

33. Have you ever attended a hospital-based program that involved PA to help you manage a health condition (e.g., cardiac rehabilitation or diabetes management programs, etc.)? Circle one answer.
   a) Yes ➔ please specify ________________________________
   b) No ➔ please skip to question 36

34. Are you currently participating in the program?
   a) Yes
   b) No ➔ In what year did you participate? __________

35. Did you complete/finish the program?
   a) Yes
   b) No ➔ Why not? __________________________________________

36. Has a doctor ever referred you to a PA program in your community to help you manage a health condition (e.g., Heart Wise Exercise, community recreation centre, etc.)? Circle one answer.
   a) Yes ➔ please specify __________________________
   b) No

Maintaining and Improving Your Health
You may do a number of things to keep you feeling healthy and well. Please answer the following questions about things you do now to maintain your health, or changes you have made to improve your health.
37. In the past 12 months, have you done anything to *maintain* your health? (For example eating a balanced diet, doing regular PA, reducing stress)
   a) Yes
   b) No  → please skip to question 40

38. Which of the following health practices do you do on a regular basis? *Circle all that apply.*

   a) Exercise or be physically active
   b) Maintain a healthy body weight
   c) Eat a balanced diet
   d) Avoid smoking
   e) Drink a limited amount of alcohol
   f) Get medical advice or treatment
   g) Take prescribed medication
   h) Take vitamins or supplements
   i) Regularly monitor health condition(s) (e.g., checking your blood sugar, blood pressure)
   j) Manage your stress level
   k) Spend time with family or friends
   l) Taking time to relax
   m) Get enough sleep to feel rested
   n) Spiritual or religious practice
   o) Other (please specify) __________________________

39. What is the single **most important** health practice that you currently do? *Circle ONE response.*

   a) Exercise or be physically active
   b) Maintain a healthy body weight
   c) Eat a balanced diet
   d) Avoid smoking
   e) Drink a limited amount of alcohol
   f) Get medical advice or treatment
   g) Take prescribed medication
   h) Take vitamins or supplements
   i) Regularly monitor health condition(s) (e.g., checking your blood sugar, blood pressure)
   j) Manage your stress level
   k) Spend time with family or friends
   l) Taking time to relax
   m) Get enough sleep to feel rested
   n) Spiritual or religious practice
   o) Other (please specify) __________________________

40. In the past 12 months, did you do anything to *improve* your health? (For example lost weight, quit smoking, increased exercise)
   a) Yes
   b) No  → please skip to question 42

41. What is the single **most important** change you have made? *Circle ONE response.*

   a) Increased exercise or PA
   b) Lost weight
   c) Changed diet/ improved eating habits
   d) Quit smoking/ reduced amount smoked
   e) Drank less alcohol
   f) Reduced stress level
   g) Received medical treatment
   h) Took vitamins
   i) Other (please specify) __________________________

42. Do you think there is anything else you should do to improve your physical health?
   a) Yes
b) No → please skip to question 46

43. What is the most important thing? *Circle ONE response.*

   a) Start/ increase exercise or PA
   b) Lose weight
   c) Change diet/ improve eating habits
   d) Quit smoking/ reduce amount smoked
   e) Drink less alcohol
   f) Reduce stress level
   g) Receive medical treatment
   h) Take vitamins
   i) Other *(please specify)* __________________

44. Is there anything stopping you from making this improvement?
   a) Yes
   b) No → please skip to question 46

45. What is stopping you from making this improvement?
   a) Family responsibilities
   b) Work or volunteer schedule
   c) Addiction to drugs/alcohol
   d) Physical condition
   e) Disability/ health problem
   f) Too stressed
   g) Too costly/ financial constraints
   h) Not available – in area
   i) Transportation problems
   j) Weather problems
   k) Lack of will power/ self-discipline
   l) Other *(please specify)* __________________

46. Is there anything you intend to do to improve your physical health in the next year?
   a) Yes
   b) No → please skip to question 48

47. What do you intend to do to improve your physical health in the next year? *Please circle all that apply.*
   a) Start/ increase exercise or PA
   b) Lose weight
   c) Change diet/ improve eating habits
   d) Quit smoking/ reduce amount smoked
   e) Drink less alcohol
   f) Reduce stress level
   g) Receive medical treatment
   h) Take vitamins
   i) Other *(please specify)* __________________

Your General Health

48. In general, would you say your health is: *Circle one answer.*
   a) Excellent?
   b) Very good?
49. How satisfied are you with your life in general? Circle one answer.
   a) Very satisfied
   b) Satisfied
   c) Neither satisfied nor dissatisfied
   d) Dissatisfied
   e) Very dissatisfied

50. In general, would you say your mental health is: Circle one answer.
   a) Excellent?
   b) Very good?
   c) Good?
   d) Fair?
   e) Poor?

51. Thinking about the amount of stress in your life, would you say that most days are: Circle one answer.
   a) Not at all stressful?
   b) Not very stressful?
   c) A bit stressful?
   d) Quite a bit stressful?
   e) Extremely stressful?

Your Participation in Your Community

52. How would you describe your sense of belonging to your local community? Circle one answer.
   a) Very strong?
   b) Somewhat strong?
   c) Somewhat weak?
   d) Very weak?

53. Are you a member of any voluntary organizations or associations such as school groups, church social groups, community centres, ethnic associations or social or civic clubs?
   a) Yes
   b) No → please skip to question 55

54. How often did you participate in meetings or activities of these groups in the past 12 months? If you belong to many groups, just think of the ones in which you are most active. Circle one answer.
   a) At least once a week
   b) At least once a month
   c) At least 3 or 4 times a year
   d) At least once a year
   e) Not at all
Long-Term Health Conditions
We’d like to know more about your experiences with certain health conditions. The questions are not about illnesses like colds that affect you for short periods of time. We are interested in “long-term conditions” which are expected to last or have already lasted 6 months or more and that have been diagnosed by a health professional.

55. Do you live with: Please select all that apply.

a) Asthma?
b) Arthritis, excluding fibromyalgia?
c) High blood pressure (diagnosed by a health professional)?
d) Heart disease?
e) Back problems, excluding fibromyalgia and arthritis?
f) Osteoporosis or osteopenia?
g) Diabetes (diagnosed by a health professional)?
h) Effects of a stroke?
i) Chronic fatigue syndrome or fibromyalgia?
j) Migraine headaches (diagnosed by a health professional)?
k) Chronic bronchitis?
l) Emphysema?
m) Chronic obstructive pulmonary disease (COPD)?
n) Cancer?
o) Intestinal or stomach ulcers?
p) Urinary incontinence?
q) Bowel disorder such as Crohn’s Disease, ulcerative colitis, Irritable Bowel Syndrome or bowel incontinence?
r) Other (please specify)
s) No known health conditions → please skip to question 58

56. In your opinion, which one health condition affects your daily life the most? Circle one answer.

a) Asthma?
b) Arthritis, excluding fibromyalgia?
c) High blood pressure (diagnosed by a health professional)?
d) Heart disease?
e) Back problems, excluding fibromyalgia and arthritis?
f) Osteoporosis or osteopenia?
g) Diabetes (diagnosed by a health professional)?
h) Effects of a stroke?
i) Chronic fatigue syndrome or fibromyalgia?
j) Migraine headaches (diagnosed by a health professional)?
k) Chronic bronchitis?
l) Emphysema?
m) Chronic obstructive pulmonary disease (COPD)?
n) Cancer?
o) Intestinal or stomach ulcers?
p) Urinary incontinence?
q) Bowel disorder such as Crohn’s Disease, ulcerative colitis, Irritable Bowel Syndrome or bowel incontinence?
r) Other (please specify)
57. Regarding this condition (the one that you feel most affects your daily life), how long has it been since you were first diagnosed with this condition? *Circle one answer.*
   a) Less than 6 months
   b) 6 months to 1 year
   c) Between 1 and 3 years
   d) Between 4 and 9 years
   e) 10 years or more

58. Are you usually free of pain or discomfort?
   a) Yes → **please skip to question 61**
   b) No

59. How would you describe the **usual** intensity of your pain or discomfort? *Circle one answer.*
   a) Mild
   b) Moderate
   c) Severe

60. How many activities does your pain or discomfort prevent? *Circle one answer.*
   a) None
   b) A few
   c) Some
   d) Most

61. Do you have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities? *Circle one answer.*
   a) Sometimes
   b) Often
   c) Never

62. Does a long-term physical condition or health problem affect your ability to travel in your community (i.e., transportation)? *Circle one answer.*
   a) Sometimes
   b) Often
   c) Never

63. Because of any physical condition or health problem, do you need the help of another person with getting to appointments and running errands such as shopping for groceries?
   a) Yes
   b) No

64. Does a long-term physical condition or health problem, reduce the amount or the kind of PA you can do in your own time, not related to work (e.g., exercise)?
   a) Sometimes
   b) Often
   c) Never → **please skip to question 67**
65. How often does your health condition(s) affect your ability to participate in light or moderate intensity physical activities (e.g., gardening, raking leaves, lifting small children, brisk walking, yoga, stretching exercises, etc.)? Circle one answer.

   a) Almost always
   b) Frequently
   c) Half the time
   d) Rarely
   e) Never

66. How often does your health condition affect your ability to participate in vigorous physical activities (e.g., carrying heavy groceries/laundry, climbing stairs, dancing, swimming, aerobics classes, etc.)? Circle one answer.

   a) Almost always
   b) Frequently
   c) Half the time
   d) Rarely
   e) Never

**About You**

The next section asks you questions to provide some general background about you, which will help us to compare the health of other women in your community.

67. What is your month and year of birth? Month __________ Year __________

68. What is your age? ______________

69. In what country were you born?
   a) Canada → please skip to question 71
   b) Other (please specify) __________________________

70. In what year did you first come to Canada to live? _____________________

71. What language do you speak most often at home?
   a) English
   b) French
   c) Other (please specify) __________________________

72. What is the highest grade of elementary or high school you have ever completed? Circle one answer.
   a) Grade 8 or lower
   b) Grade 9 – 10
   c) Grade 11-13

73. Did you graduate from high school (secondary school)?
   a) Yes
   b) No
74. What is the highest degree, certificate or diploma you have obtained? *Circle one answer.*
   a) No post-secondary degree, certificate or diploma
   b) Trade certificate or diploma from a vocational school or apprenticeship training
   c) Non-university certificate or diploma from a community college, school of nursing, etc.
   d) University certificate below bachelor’s level
   e) Bachelor’s degree
   f) University degree or certificate above bachelor’s degree

75. What is your current marital status? Are you:
   a) Married?
   b) Living common-law?
   c) Widowed?
   d) Separated?
   e) Divorced?
   f) Single, never married?

76. Do you currently live alone?
   a) Yes
   b) No

77. Are you responsible for the everyday care of any children (under the age of 18)?
   a) Yes
   b) No

78. Are you responsible for the everyday care of any adults (18 years of age or older)?
   a) Yes
   b) No

79. Where is your home located?
   a) In a city
   b) In a rural community

80. What type of dwelling do you live in? Is it a:
   a) House?
   b) Apartment building?
   c) Institution (e.g. retirement residence)?
   d) Mobile home?
   e) Other; *specify:* ________________________________

81. Do you rent or own your home?
   a) Rent
   b) Own
   c) Other: ________________________________

82. Employment history (i.e., paid work): *Circle one answer.*
   a) Currently employed full-time
   b) Currently employed part-time
   c) Retired from full-time employment
d) Retired from part-time employment
e) Never employed

83. Volunteer history (i.e., unpaid work): *Circle one answer.*
   a) Currently engaged in full-time volunteer work
   b) Currently engaged in part-time volunteer work
   c) Retired from full-time volunteer work
   d) Retired from part-time volunteer work
   e) Never engaged in volunteer work

84. Approximate household income from all sources:
   a) Less than $5,000
   b) Between $5,000-$9,999
   c) Between $10,000-$19,999
   d) Between $20,000-$29,999
   e) Between $30,000-$39,999
   f) Between $40,000-$49,999
   g) Between $50,000-$59,999
   h) Between $60,000-$69,999
   i) Between $70,000-$79,999
   j) Between $80,000-$89,999
   k) Between $90,000-$99,999
   l) $100,000 or more

85. What are your main sources of income? *Circle all that apply.*
   a) Benefits from Canada or Quebec Pension
   b) Retirement pensions, superannuation and annuities
   c) Old Age Security and Guaranteed Income Supplement
   d) Dividends and interest (e.g., on bonds, savings)
   e) Wages and salaries
   f) Income from self-employment
   g) Employment insurance
   h) Worker’s compensation
   i) Child Tax Benefit
   j) Provincial or municipal social assistance or welfare
   k) Child support
   l) Alimony
   m) Other (e.g., rental income)
   n) None

*Thank you for completing the survey!*
Follow-Up Interview
We would like to also invite you to participate in a follow-up interview to discuss in more depth your experiences with PA programs within your community. If you agree to this second phase of the study, you would complete a single in-person interview, at a time and location that is convenient to you. The interview will last between 1 and 2 hours.

If you would be willing to participate in an interview, or would just like more information about what is involved with an interview, please complete the following section or contact Danielle Rolfe, at 613-889-5391 or via email at danielle.rolfe@utoronto.ca.

☐ I am willing to be contacted to discuss these issues further

Please contact me at:

Name: ________________________________
Telephone: ____________________________
Email: ________________________________

Once again, thank you for your cooperation in completing the survey! The development of programs in the community that matter to women like you depends on the input that you provide by completing and returning this survey. I truly value and appreciate your participation and input. Please use the postage paid return envelope to return the completed survey by October 29, 2010.
Appendix D: Postcard Thank You/Reminder

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

October 13, 2010

Last week a survey seeking information about your experiences and needs concerning PA in your community was mailed to you. Your name was part of a sample drawn of women, 65 years of age or older, who have received services at the University of Ottawa Heart Institute for a health condition.

If you have already completed and returned the survey to us, please accept my sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking women like you to share your experiences that we can understand your needs and preferences for PA programs in your community.

If you did not receive a survey, or if it was misplaced, please call 613-889-5391 to have another one sent to you in the mail today.

Sincerely,

______________________________________________________________________________

Danielle Rolfe, BPHE, MSc, Doctoral Candidate, University of Toronto
Appendix E: Cover Letter for Replacement Survey

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

October 25, 2010

Dear Participant,

About three weeks ago a questionnaire was sent to you seeking information about your experiences and needs concerning PA in your community. To the best of our knowledge, it’s not yet been returned.

The comments of other women who have already responded include a wide variety of reasons for their participation (or inability to participate) in community-based PA programs. Many have described their experiences, both good and bad, with PA and community programs. We think the results are going to be very useful to community leaders, health care workers and others.

A few people have contacted us or returned blank surveys to say that they should not have received the survey because they are not the intended recipient, or they never received care for a heart condition at the University of Ottawa Heart Institute. If either of these situations applies to you, please let us know on the cover of the questionnaire and return it in the enclosed envelope so that we can remove your name from the mailing list.

Just for your information, an identification number is printed on the survey so that we can check your name off of the mailing list when it is returned. The list of names is then destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people’s answers is very important to us, as well as the University of Ottawa Heart Institute.

We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer it, please let us know by returning a blank survey in the enclosed stamped envelope.

Sincerely,

_______________________________
Robert D. Reid, PhD, MBA
Associate Director, Minto Prevention and Rehabilitation Centre
University of Ottawa Heart Institute
Appendix F: Interview Schedule

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

Introduction:

Thank you for agreeing to meet with me to talk about your experiences with PA and programs in your community. The purpose of the study is to learn more about what older women living with a heart condition value in terms of health promotion activities such as PA. We plan to interview up to 20 women like yourself, to learn more about what you do to feel healthy and well, and specifically what your experiences are with PA.

We understand that being healthy and PA are terms that mean different things to different people, and this is what we would like to speak to you about today. So please keep in mind that when I talk about, or use the terms, ‘health’ or ‘PA,’ I am using these terms in a very general or broad way.

I am interested in what PA you may do to increase your physical health, but also activities or other things that you may do to increase your overall sense of wellbeing. For example, if you attend programs in your community that do not involve PA, but instead attend programs in which you meet or socialize with others and you value this as part of your health or overall wellbeing, then I am very interested in hearing about this.

Please feel free to talk about other issues that affect your PA participation even if they involve outside issues, for example your relationships or responsibilities with family members, coworkers, etc.

During the interview I may ask you to give me examples to help me understand the things that you are saying, and will ask you for further details of issues or events that you are describing.

Do you have any questions that you would like to ask me before we begin?

Summary and Closure (upon interview completion):

Once again, thank you for agreeing to this interview and for being so generous with your time and insights. It is my hope that the results of the research will be complete by December 2011, at which time I will send you a summary of the research if you would like. If you have any other comments to share or questions, please do not hesitate to contact me at the number or email listed on the informed consent letter. Again, thank you very much for your time and interest in this study.
Interview Questions:

1. Can you tell me why you are interested in participating in this study?

2. Tell me a little about yourself.
   a. Describe an “active” day for you.

3. What health conditions do you live with?
   a. How long have you lived with this/these health condition(s)?
   b. Do these health conditions affect how you live? Please explain.

4. What does “healthy” mean to you?

5. What types of things do you do to feel healthy?

6. Are there things you are not currently doing, but feel you should do to be “healthy”? Please explain.
   a. What do you feel stops you from being able to do these things at all, or as much as you would like?

7. When did you learn that you had a heart condition?
   a. When you learned this, did you make any changes to the things you do to feel healthy?
   b. Are you currently doing these activities? Why or why not?

8. What activities do you do to be physically active?
   a. Why do you do these activities? (e.g., health/wellness, to have fun, to meet people)
   b. Does anything affect your ability to participate in these activities? (e.g., health conditions, pain, discomfort, fear) Please explain.
   c. Does anything help you to participate in these activities? (e.g., family member support, friends, facility close by, knowledge about benefits) Please explain.
   d. Are you satisfied with your current level of PA? Please explain.
   e. Are there other activities that you would like to do?
   f. Ideally, where would you like to do the physical activities that you do?
9. In the survey, many women felt that they tried to be physically active to feel healthy and well, rather than to manage or prevent health conditions. In your experience/opinion, would you tend to agree or disagree with this statement? Please explain.

10. Where do you usually go for information or advice on healthy living or PA? Why?
   a. Are there other places that you could go to for this information? Explain.
   b. Where would you like to find information on health or PA?

11. Can you describe for me conversations that you have had (if any) with your physician (or others, such as health care providers, family, friends) about PA?
   a. What did he/she recommend?
   b. What reasons did he/she give for you to be more physically active?
   c. Did he/she provide you with suggestions on how to be more physically active?
      i. If not, what would have been helpful to receive in terms of information, advice, or anything else?
   d. Were you satisfied with the way that the information or advice was provided?

12. Did any health care provider recommend that you attend a PA program, such as cardiac rehabilitation?
   a. What do you remember about how you received this referral?

13. Did you attend cardiac rehabilitation? Why or why not?

If participant attended CR:

14. If you attended CR…Can you tell me about your experiences with PA after completing the cardiac rehabilitation program?
   a. Are you as active now as you were when participating in cardiac rehabilitation? Why or why not?

15. Is there anything else that you would like to discuss, based on anything we have talked about today, or anything that we did not talk about?

Additional Questions based on Pilot Interviews:

16. What is the most important thing in your life?
17. What makes you happy?
18. What role does your partner play in your level of PA?
Appendix G: Patient Contact Flowchart

Request for Health Records Retrieval for a Research Protocol (Ottawa Hospital Health Records Department)

Ethics Review of Research Protocol (UOHI REB)

Pre-testing of survey with older women attending cardiac rehabilitation at Women’s College Hospital (investigator)

Retrieval of Health Records based on eligibility criteria (Health Records Department)

Mailing list of potential participants generated (Investigator)

Survey mailed to identified subjects (n=275) with cover letter documenting subjects’ rights as a research participant and contact number if to be removed from mailing list (Investigator)

Reminder postcard sent to identified subjects (n=275-[respondents]-[do not contact list]) who have not returned completed survey requesting completion and return of survey (or contact to have name removed from mailing list) (Investigator)

Replacement survey mailed to subjects who have not returned a completed survey AND who have not asked to be removed from mailing list (n=275-[respondents]-[do not contact list]) with new cover letter to explain purpose of study (Investigator)

Survey respondents that have indicated consent to be contacted for interview telephoned by investigator to review purpose of study and interviews and discuss willingness to participate (Investigator)

Subjects agreeing to interview will engage in a one-time only, individual interview (n=15) (Investigator)

Participants requesting follow-up interview will be mailed a summary of the research study results (Investigator)
Appendix H: Survey Recruitment Flowchart

- Number of surveys for which *any response received* = 191/275 unique cases = 70%
- **Response rate** = [(completed + declined participation)/eligible cases in sample] = [(127+39)/250] or 66%
- **Completion rate** (completed surveys/eligible cases in sample) = 127/250 or 51%

<table>
<thead>
<tr>
<th>Number of eligible women in UOHI database (included duplicate cases)</th>
<th>N=284</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desired sample size (n) = 279</td>
<td></td>
</tr>
<tr>
<td>Eligible (unique) cases within sample (n) = 275</td>
<td></td>
</tr>
<tr>
<td>Eligible cases within sample (n) = 269</td>
<td></td>
</tr>
<tr>
<td>Eligible cases within sample (n) = 250</td>
<td></td>
</tr>
<tr>
<td>Completed survey (n) = 127</td>
<td></td>
</tr>
<tr>
<td>Duplicate cases in database = 9</td>
<td></td>
</tr>
<tr>
<td>Advised not to exercise by physician (ineligible) = 6</td>
<td></td>
</tr>
<tr>
<td>Moved/RTS = 12 Deceased =7</td>
<td></td>
</tr>
<tr>
<td>Declined participation (non-response) = 84 (response) = 39</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix I: Coding Scheme

<table>
<thead>
<tr>
<th>Coding Category</th>
<th>Description of Code</th>
<th>Rationale/Analytic Hunch/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Life/History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early history</td>
<td>Details about where they were born, relocation, education, etc.</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>Discussions about parents, siblings, children, grandchildren, adopted or foster children.</td>
<td></td>
</tr>
<tr>
<td>Stressful life events</td>
<td>Description of stressful life events experienced (e.g., trauma, loss of family member, life-threatening illness, etc.)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>What participants did during their lives as an occupation (e.g., home making, secretarial work, teaching, nursing, etc.). Include paid AND unpaid occupations.</td>
<td>Analyze with socialization/community involvement (may not have coded volunteer work separately)</td>
</tr>
<tr>
<td>Hobbies</td>
<td>Things participant does out of personal interest (e.g., crafts, writing). This code does NOT include physical activity or gardening.</td>
<td></td>
</tr>
<tr>
<td>Health conditions</td>
<td>Discussions of health conditions (not heart related) and how they affect individual on a daily basis. Also include statements that indicate that health conditions do not affect daily life.</td>
<td>May be some overlap with heart conditions. Women don’t recognize their health conditions as being such, despite doing so for their husbands. Anger regarding conditions that impair their functioning (e.g., arthritis, osteoporosis); not the same anger with CVD.</td>
</tr>
<tr>
<td>Driving</td>
<td>Any reference made to driving (for errands, for pleasure). Include statements about whether participant can drive, feels comfortable driving, access to a car, maintenance of one’s driving</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
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<tr>
<td>license, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td>Descriptions of travel for vacation, work, etc.</td>
<td>Analyze with Influence Weather PA.</td>
</tr>
<tr>
<td>Partner</td>
<td>References or discussions about one’s partner/husband and impact on participant’s life. MAY INCLUDE references to partner and physical activity, but still code as partner.</td>
<td></td>
</tr>
</tbody>
</table>

### Daily Activities

| Typical day          | Typical daily activities (e.g., waking, eating, being active, shopping, housekeeping, etc.). | May need to collapse these two codes for analysis purposes. |
| Active day           | Specific descriptions of what constitutes an “active day” for the participant.             |                                                             |

### Health Promotion (non-PA) [Do NOT include discussions about physical activity here.]

<p>| Weight management    | Descriptions of activities or practices that women do specifically related to weight; weight loss, maintenance (e.g., portion control, diet, Weight Watchers, etc.) |                               |
| Nutrition            | Discussions about food consumption, preparation (e.g., grocery shopping for healthy foods, growing own produce, cooking, etc.) |                               |
| Dental               | Discussions about visits to dentist or oral health care provider                         | May need to review coding for reference to dental visits, as not initially coded for. |
| Alternative HCP      | Discussions of consulting with or utilizing alternative health services (including chiropractic, massage therapy, etc.) |                               |
| Medication           | Discussions about prescription and non-prescription medications, regimen, etc. May also include side effects of medications. |                               |</p>
<table>
<thead>
<tr>
<th>Coding Category</th>
<th>Description of Code</th>
<th>Rationale/Analytic Hunch/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socialization/Community Involvement</td>
<td>Discussion about socializing with others, including during physical activity participation. Includes references to participation in community groups, organizations. May include discussions about church participation.</td>
<td>Revised code to include participation in community groups, organizations. May be some overlap when analyzing between ‘Socialization/Community Involvement’ as church participation coded in both codes.</td>
</tr>
<tr>
<td>Mental health/wellbeing</td>
<td>Discussions pertaining to the maintenance or need to achieve mental wellbeing.</td>
<td></td>
</tr>
<tr>
<td>Stress management</td>
<td>Any discussions about attempts to manage or cope with stress (including formal and informal interactions with mental health practitioners, or coping with stress in other ways).</td>
<td></td>
</tr>
<tr>
<td>Rest/Sleep/Tired</td>
<td>Discussions about getting enough rest during the day or sleep at night (e.g., hours, interruptions, habits). Also include references to feeling tired, or needing to ‘slow down’.</td>
<td></td>
</tr>
<tr>
<td>Spirituality</td>
<td>Discussions about what spiritual activities participants engage in to feel healthy or well. May include discussions about whether health is controlled by divine beings. May include implicit discussions about spirituality and role in health (i.e., not referring to God specifically, but being outside of one’s control).</td>
<td>May be some overlap when analyzing between ‘Socialization/Community Involvement’ as church participation coded in both codes.</td>
</tr>
<tr>
<td>Attitude</td>
<td>Discussion of how one’s attitude affects health and wellbeing. Attributions of one’s life view as reflecting their attitude (positive, negative, etc.).</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Monitoring health</td>
<td>Taking blood sugar levels, measuring blood pressure, going for regular physician</td>
<td></td>
</tr>
<tr>
<td>conditions</td>
<td>check-ups, etc.</td>
<td></td>
</tr>
<tr>
<td>Other HP practices</td>
<td>Other health promotion practices not otherwise coded, for example, smoking cessation.</td>
<td>May be some coding overlap with Monitoring Health</td>
</tr>
<tr>
<td>Health info</td>
<td>Discussions about accessing health/health promotion information. Do NOT include</td>
<td>Conditions.</td>
</tr>
<tr>
<td>HP barriers</td>
<td>Barriers that inhibit or are perceived to inhibit the practice of health promoting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>behaviours. Do NOT include discussions about barriers to PA.</td>
<td></td>
</tr>
</tbody>
</table>

**Physical Activity (PA)**

<table>
<thead>
<tr>
<th>Reasons for PA/Benefits of PA</th>
<th>Participants’ discussions about the reasons why they are (or are not) physically active (e.g., to feel well, to reduce stiffness, to be able to do other activities, etc.)</th>
<th>Descriptive data – explore for themes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction PA</td>
<td>Response to question, “Are you satisfied with your current level of physical activity?” Also include other statements that address participant’s level of satisfaction with the <em>level</em> of PA. May include statements about participant’s desire to participate more in current types of PA.</td>
<td>Descriptive data – explore for themes.</td>
</tr>
<tr>
<td>Desired PA</td>
<td>Response to question, “Are there other activities that you would like to do?” Also include other statements that address participant’s desire to participate in other types of PA not already engaged in.</td>
<td>Descriptive data – explore for themes.</td>
</tr>
<tr>
<td>Current PA</td>
<td>Current activities engaged in, not as part of transportation, childcare, housekeeping or gardening.</td>
<td></td>
</tr>
<tr>
<td>Past PA</td>
<td>Activities engaged in, in the past, not as part of transportation, childcare, housekeeping, gardening or heavy labour.</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
</tr>
<tr>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Social aspects of PA</td>
<td>Discussions related to socialization during physical activities. Include discussions about participant’s preference regarding socialization during PA (i.e., do they prefer to be active on their own or with others).</td>
<td></td>
</tr>
<tr>
<td>Walking undefined</td>
<td>Code specifically for discussions about walking for purposes not otherwise known. Code ‘walking undefined’ separately, but also apply other codes as appropriate (e.g., current, past PA). Do NOT include statements about walking specifically for exercise or transportation (see codes below).</td>
<td></td>
</tr>
<tr>
<td>Walking exercise</td>
<td>Code ‘walking exercise’ separately, but also apply other codes as appropriate (e.g., current, past PA). Include walking done for exercise.</td>
<td></td>
</tr>
<tr>
<td>Walking transport</td>
<td>Code ‘walking transport’ separately, but also apply other codes as appropriate (e.g., current, past PA). Include walking done for transportation.</td>
<td></td>
</tr>
<tr>
<td>Housekeeping</td>
<td>House keeping tasks that involve physical activity, including standing for prolonged periods, climbing stairs (e.g., vacuuming, ironing, carrying laundry, sweeping, dusting, washing dishes, etc.) Do NOT include discussions about meal preparation (code these under ‘Nutrition’).</td>
<td></td>
</tr>
<tr>
<td>Active transport</td>
<td>Include discussions about engaging in physical activity as a method of transportation (e.g., bicycling, ice skating, etc.). Do NOT include walking for transportation (apply ‘Walking transportation’ code).</td>
<td></td>
</tr>
<tr>
<td>Gardening</td>
<td>References specifically to outdoor gardening. May also include statements about farming of vegetables, fruit, etc.</td>
<td></td>
</tr>
<tr>
<td>Groceries</td>
<td>Physical activity incurred related to grocery shopping (e.g., walking, carrying bags, etc.).</td>
<td></td>
</tr>
<tr>
<td>Childcare PA</td>
<td>Physical activities related to caring for children, grandchildren, past or present. May need to be combined with Influence of</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
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<tr>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Childcare on PA</td>
<td>Discussions about where participant is and/or prefers to be active (e.g., at home, at facility, etc.).</td>
<td>Childcare on PA.</td>
</tr>
<tr>
<td>Location PA</td>
<td>Discussions about where participant is and/or prefers to be active (e.g., at home, at facility, etc.).</td>
<td>May need to analyze with Influence Location PA and Influence Facilities PA.</td>
</tr>
<tr>
<td>Heavy labour</td>
<td>Reference to participation in heavy labour. For example, building a house, heavy farming, renovations, clear cutting, etc. Not necessarily performed alone.</td>
<td></td>
</tr>
</tbody>
</table>

**Influences on PA**

<p>| Influence partner/husband | Discussion of how partner affects PA participation (facilitation or inhibition of activity). Do NOT include here discussions related to CR participation.                                                                                                                                                                                                                       |                                                                               |
| Social influences on PA  | Statements made that specifically describe comments made by others about participants’ level of PA (e.g., ‘don’t do too much’, ‘keep active’, ‘you should try golf’, ‘get a dog’, etc.). May also include descriptions of how specific people help participants to be active. Do NOT include here discussions of how partner /husband affects PA participation (see code above). Do NOT include here discussions related to CR participation. |                                                                               |
| Influence childcare on PA | Discussions about how childcare provision (past or present) affect/affected PA participation.                                                                                                                                                                                                                                                                      | May need to be combined with Childcare PA for analysis.                       |
| Influence health condition on PA | Discussion of how health condition affects PA participation (facilitation or inhibition of activity). Do NOT include here discussions related to CR participation.                                                                                                                                                                                                                              |                                                                               |
| Influence time on PA    | Discussion of how time (i.e., having sufficient or inadequate amount of time to |                                                                               |</p>
<table>
<thead>
<tr>
<th>Coding Category</th>
<th>Description of Code</th>
<th>Rationale/Analytic Hunch/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>be physically active) affects PA participation. Do NOT include here discussions related to CR participation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influence motivation on PA</td>
<td>Discussion of how motivation (i.e., having or lacking motivation) affects PA participation. Include statements about being ‘lazy’. Do NOT include here discussions related to CR participation.</td>
<td></td>
</tr>
<tr>
<td>Influence cost on PA</td>
<td>Discussion of how costs affect PA participation (e.g., programs are too expensive, are free, perception of money being ‘wasted’). Do NOT include discussions related to transportation or parking costs associated with PA participation (see code below). Do NOT include here discussions related to CR participation.</td>
<td></td>
</tr>
<tr>
<td>Influence transportation on PA</td>
<td>Discussions related to transportation or parking costs associated with PA participation. Do NOT include here discussions related to CR participation.</td>
<td></td>
</tr>
<tr>
<td>Influence location on PA</td>
<td>Include discussions of how neighbourhood layout, walkability, location of home or community facilities prevents physical activity participation. Do NOT include discussions that merely identify location of current or past PA. Should include discussions that specify how location influences PA participation. Do NOT include here discussions related to CR participation.</td>
<td>Combine with Location PA for analysis. May need to analyze with Influence Facilities PA.</td>
</tr>
<tr>
<td>Influence facilities on PA</td>
<td>Discussions of how the availability or suitability of facilities influences PA participation (e.g., do facilities exist in the community, whether participant uses them, why or why not, etc.). Include discussions about whether a facility is accessible, welcoming, the right-fit for the participant’s needs. Also include references to facility staff’s influence on PA participation (e.g., appropriate programming, intensity of</td>
<td></td>
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<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
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</tr>
<tr>
<td></td>
<td>exercise, etc.).</td>
<td></td>
</tr>
<tr>
<td>Influence knowledge on PA</td>
<td>Descriptions related to personal or PA professionals’ knowledge about how to be active. May also include reference to knowledge about PA and CVD.</td>
<td></td>
</tr>
<tr>
<td>Influence weather on PA</td>
<td>Discussions about how the weather (and changes in weather) may affect participants’ level or type of PA.</td>
<td>Analyze with Travel.</td>
</tr>
<tr>
<td>Influence energy on PA</td>
<td>Discussions of how participant’s energy level (either a lack of, or having enough) affects PA participation.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Activity Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA Info</td>
<td>General discussions related to information related to PA.</td>
<td>Collapse codes related to PA info for analysis.</td>
</tr>
<tr>
<td>Info seeking</td>
<td>Are participants looking for PA information?</td>
<td></td>
</tr>
<tr>
<td>Where sought</td>
<td>Where have participants gone for information on PA?</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with info</td>
<td>Were participants satisfied with the information that they received?</td>
<td></td>
</tr>
<tr>
<td>Received info</td>
<td>Did they receive the information that they sought?</td>
<td></td>
</tr>
<tr>
<td>Preferred location</td>
<td>Ideally, where would participants like to access PA information?</td>
<td></td>
</tr>
<tr>
<td>Heart Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CVD</td>
<td>General reference to CVD, not otherwise captured by other codes.</td>
<td></td>
</tr>
<tr>
<td>CVD cause</td>
<td>What participant feels caused them to develop heart disease/a heart incident (e.g., family history, significant stressful life event)</td>
<td></td>
</tr>
<tr>
<td>CVD history</td>
<td>Discussions related to past history of CVD, including hypertension, previous heart attacks, etc.</td>
<td>May need to recode references to family history of CVD (previously coded within CVD Cause).</td>
</tr>
<tr>
<td>Heart incident</td>
<td>Participants’ description of the heart</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
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<td>--------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>incident th</td>
<td>incident that lead to receiving care at the UOHI (e.g., heart attack, etc.)</td>
<td></td>
</tr>
<tr>
<td>Changes post-event</td>
<td>Description of whether personal activities (physical or otherwise) changed following heart incident or learning about heart condition.</td>
<td></td>
</tr>
<tr>
<td>Fear CVD</td>
<td>Expressions of fear related to own CVD or others’ CVD diagnosis. Also include discussions related to expression of a fear of ‘overdoing it’ and/or experiencing another heart attack/incident.</td>
<td></td>
</tr>
<tr>
<td>Health care Provider/Physician Interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCP interactions PA</td>
<td>General discussions related to PA that participant describes having with non-physician health care providers (including nurses, physical therapists, kinesiologists, etc.).</td>
<td></td>
</tr>
<tr>
<td>MD discussions PA</td>
<td>Any discussions had with any physician (GP, cardiologist, specialist) regarding PA. Include statements regarding recommendations/suggestions received from physician(s) regarding PA.</td>
<td></td>
</tr>
<tr>
<td>MD satisfaction</td>
<td>Discussions related to participant’s level of satisfaction with these PA related discussions with their physician(s).</td>
<td></td>
</tr>
<tr>
<td>MD info desired PA</td>
<td>Description of the type of information that participant would have found useful or helpful regarding PA from physician.</td>
<td></td>
</tr>
<tr>
<td>Cardiac Rehabilitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>General discussions about cardiac rehabilitation.</td>
<td></td>
</tr>
<tr>
<td>Discussions with HCPs</td>
<td>Any discussions about CR had with cardiologists, nurses, physical therapists, partner, friends, family members, etc.</td>
<td></td>
</tr>
<tr>
<td>CR referral</td>
<td>Discussions about how/whether participant received a referral to CR post cardiac event.</td>
<td></td>
</tr>
<tr>
<td>CR barriers</td>
<td>Reasons that prevented CR participation or that hampered participation.</td>
<td></td>
</tr>
<tr>
<td>CR attendance</td>
<td>Code discussions related to whether</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
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<td>---------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>participant attended or did not attend CR. May be coded along with other CR codes (e.g., referral, barriers, etc.).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes to PA post CR</td>
<td>Descriptions of whether CR participation changed how they exercise or the activities that they do.</td>
<td></td>
</tr>
<tr>
<td>CR transition</td>
<td>How did the participant experience the transition from CR to the community?</td>
<td></td>
</tr>
<tr>
<td>CR timing</td>
<td>Participants’ views about the ideal timing of CR or general heart health information following a cardiac event.</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study participation</td>
<td>Response to question, “Why were you interested in participating in this study?”</td>
<td>Descriptive data – explore for themes.</td>
</tr>
<tr>
<td>Healthy</td>
<td>Answer to question on “what does healthy mean to you?” Also include general statements that describe participant’s notion of ‘health’ or being ‘healthy’.</td>
<td></td>
</tr>
<tr>
<td>Important in life</td>
<td>Answer to question on “what is the most important thing in your life?”</td>
<td>Descriptive data – explore for themes.</td>
</tr>
<tr>
<td>Happy</td>
<td>Answer to question on “what makes you happy?”</td>
<td>Descriptive data – explore for themes. NOTE: Duplicate codes: Makes Happy and Happy – should be pulled together.</td>
</tr>
<tr>
<td>Busy/Rush/Active</td>
<td>Statements or references made by participant about being ‘busy’, leading a ‘busy’ life, being ‘on the go’, enjoying being busy, ‘keeping busy’, ‘always having something to do’, being ‘active’, feeling rushed, etc. May also include reference to not being as busy or active now compared to before.</td>
<td>Recurring theme that requires greater exploration/explanation.</td>
</tr>
<tr>
<td>Quotes</td>
<td>Suggestions for quotes to use to exemplify particular issues.</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Age-related comments, concerns discussed by participants. For example, “is it my age?” “What is healthy for an 80-year old?” etc. Morbidity/mortality discussions related to</td>
<td></td>
</tr>
<tr>
<td>Coding Category</td>
<td>Description of Code</td>
<td>Rationale/Analytic Hunch/Notes</td>
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<td>----------------------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Access to health services</td>
<td>General discussion about participants’ perception of access to care, quality of care received, etc. Primarily reference to hospitals, but may include other health services.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix J: Member Check Cover Letter and Questionnaire

Meeting Women’s Health Needs in the Community
HI Protocol#: 2009215-01H

May 14, 2012

Dear __________________________,

Thank you very much for your participation in the study, “Meeting Women’s Health Needs in the Community” conducted last year. The study has now been completed, the data has been reviewed and will be presented during my doctoral thesis defense in September 2012.

As discussed during the informed consent process, part of the research process involves following up with participants to ensure that the research information generated accurately reflects statements made by participants during interviews.

You have been selected from among the 15 interview participants to take part in this final step of the research project. Your participation in this final stage is critical and would be very much appreciated.

Provided for your review is a brief summary of the research findings that will be used in the final research report. All that is required of you at this stage is to review the project summary and respond to a few brief written questions on the enclosed page.

You are reminded that, although your participation is critical, it is entirely voluntary. Please feel free to ask any questions related to the research and its presentation. Please feel free to contact me or my supervisor, Dr. Karen Yoshida, should you have any questions or concerns.

Once again, thank you very much for your participation in this study. I look forward to sharing the research results with you upon completion!

Sincerely yours,

________________________________
Danielle Rolfe, BPHE, MSc, Doctoral Candidate, University of Toronto

Danielle Rolfe Dr. Karen Yoshida (Co-Supervisor)
Danielle.rolfe@utoronto.ca karen.yoshida@utoronto.ca
613-889-5391 416-978-6589
QUESTIONs IN RESPONSE TO THE RESEARCH SUMMARY

1. Do you believe the themes presented relate to your experience?  YES  NO

2. Do you believe the themes presented relate to others with CVD?  YES  NO

If you answered NO to either question, please provide a brief explanation:
(Space provided for response)

Please feel free to provide any additional comments in the space provided below.
(Space provided for response)
Appendix K: Abbreviations

CDM = chronic disease management

CR = cardiac rehabilitation

PA = physical activity

UOHI = University of Ottawa Heart Institute