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Profiling Physical Activity Patterns among Women in Manitoba: What does “Moderate” Mean?

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Profiling Physical Activity Patterns among Women in Manitoba: What does “Moderate” Mean?

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Abstract

The Canadian Community Health Survey (CCHS) provides timely estimates of health information at the sub-provincial level. We explore two main issues that prevented us from using physical activity data from CCHS cycle 3.1 (2005) as part of the *Profile of Women's Health in Manitoba*. CCHS uses the term “moderate” to describe physical effort that meets Canadian minimum guidelines, whereas “moderate” conversely describes sub-minimal levels of activity. A Manitoba survey of physical activity interrogates a wider variety of activities to measure respondents' daily energy expenditure. We found the latter survey better suited to our needs and more likely a better measure of women's daily physical activity and health.

Key Words: Women's health, Manitoba women, Physical activity, Conceptual definition, Canadian Community Health Survey

1. Introduction

1.1 Context

Health Canada's Physical Activity Guide (PAG) recommends doing a variety of endurance, flexibility and strength exercises daily to ensure optimal health. These guidelines have long served as the benchmark for physical activity data used to determine whether or not Canadians are sufficiently active. The *Canadian Community Health Survey* (CCHS), for instance, utilizes these guidelines to classify respondents as 'active', 'moderately active' or 'inactive', depending on the reported time spent in different types and intensities of leisure-time physical activity. In preparing the report *A Profile of Women's Health in Manitoba* (Donner et al., 2008), the authors intended to use the 2005 CCHS Cycle 3.1 to investigate leisure-time physical activity trends in Manitoba women, among the over 150 indicators of the ways gender influences health. Here, we describe our experience reporting physical activity levels in Manitoba women, including how some current definitions prevented us from using our originally planned data source, especially with regard to different uses of the word “moderate”. We highlight some of the problems with the conceptual definition of physical activity in the CCHS survey, and compare it with an alternative questionnaire — the Manitoba *In Motion* Survey. We demonstrate the extent to which questionnaires that focus predominantly on leisure-time activity underestimate actual physical activity levels among women in Manitoba.

1.2 Physical activity guidelines

Canada's Physical Activity Guide (PAG) is based on evidence that supports the relationship between activity levels and important biological, psychological and behavioral outcomes (Warburton et al., 2007). Although PAG offers age-specific recommendations for physical activity, it does not offer sex-specific recommendations, due largely to the fact that distinct requirements for women are poorly established (Gulati et al., 2005). Adults aged 18-55 are encouraged to engage in a variety of endurance (walking, cycling, propelling a wheelchair), flexibility (yoga, Tai Chi) and strength exercises (push-ups, weight training) for periods of at least 10 minutes for a total of 60 minutes

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every day (Health Canada, 2003). Time needed to achieve health benefits is largely dependent on effort; as adults progress to moderate and vigorous activities, the frequency and duration of the activities may be reduced. For example, adults can either engage in activities that require light effort for 60 minutes everyday, perform activities that require moderate effort for 30-60 minutes four times per week, or partake in activities that command vigorous effort for 20-30 minutes 4 times per week (Health Canada, 2003). Note that since there is a dose-response relationship between physical activity and health, greater benefits are derived by exceeding these minimum recommendations (Thune and Furberg, 2001; Kokkinos and Fernhall, 1999).

1.3 Energy expenditure

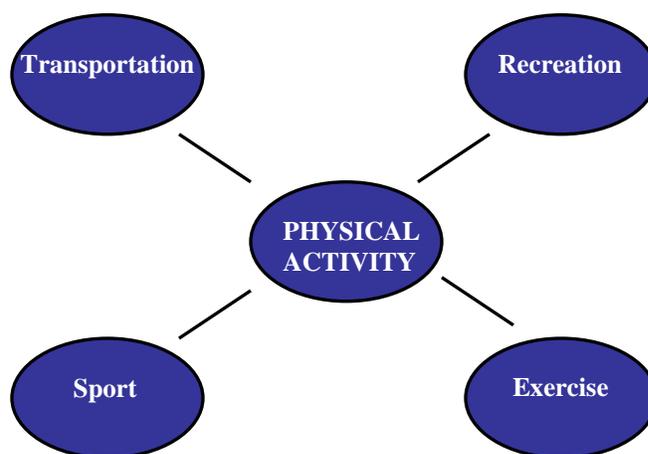
A person's average daily energy expenditure is calculated by multiplying the number of times each activity is performed by the average duration of the activity by the energy cost of the activity (kilocalories per kilogram of body weight per hour). According to Statistics Canada (2005), a person who has an average daily energy expenditure of at least 3 kilocalories per kilogram of body weight per day (KKD) is classified as 'active' (e.g. 60 minutes of walking per day), an average daily expenditure of 1.5-2.9 KKD is considered 'moderately active' (e.g. 30 minutes of walking per day), and 'inactive' corresponds to an average daily expenditure of less than 1.5 KKD (e.g. < 15 minutes of walking per day). Ideally, adults should strive to expend 6-8 KKD in order to maximize health benefits (Health Canada, 2003; World Health Organization 2002). It is important to note that only those people who have an average daily expenditure equal to or greater than 3 KKD meet *minimum* PAG requirements.

2. Data sources

2.1 The Canadian Community Health Survey (CCHS) Cycle 3.1

Roughly 27,775 people were sampled from six of eleven health regions for the province of Manitoba³ in the CCHS cycle 3.1. Respondents were interviewed over the phone and prompted to recall the type, duration and frequency of specific physical activities performed in the past three months, in addition to sedentary activities such as watching television or playing on the computer. The survey focuses almost exclusively on leisure-time physical activity, and therefore does not include physical activities performed at work (physical labor), at school (physical education classes), or in the home (chores, caring for children) (Figure 2.1-1). The Physical Activity Index (PAI) is a derived variable based on these responses that categorizes respondents as either "active", "moderately active" or "inactive", depending on their total daily energy expenditure.

Figure 2.1-1
Conceptual framework of CCHS measures of physical activity

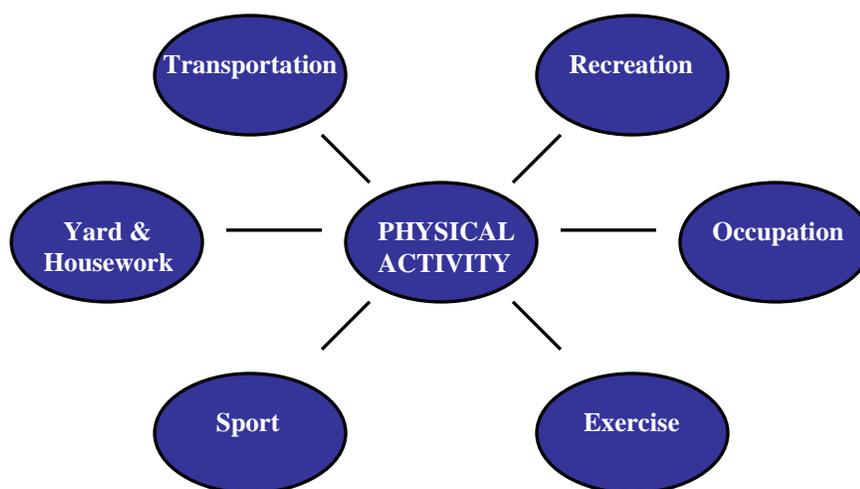


³ Manitoba health regions sampled for the CCHS include: Winnipeg (4610), Brandon (4615), North Eastman (4620), Interlake (4630), Central (4640) and Parkland (4660).

2.2 Manitoba *In Motion* survey

The 2007 Manitoba *In Motion* survey was conducted by the Health, Leisure and Human Performance Research Institute of the University of Manitoba (HLHPRI). Random sampling segmented by health region was used to sample a total of 8,629 Manitobans. Respondents were interviewed over the phone and asked to recall the type, duration and perceived intensity of every activity undertaken in the past week in order to determine whether or not they were engaging in sufficient physical activity to meet Health Canada's minimum PAG requirements. Manitoba data were not limited to those who reported exercising regularly, nor were respondents asked to report activities related exclusively to sports and exercise. Consistent with Health Canada's message to engage in physical activity "at home, at school, at work, at play, or on the way!", the Manitoba survey included all daily activities, recognizing that of course people achieve their daily requirements in a number of different ways- at their jobs, at school and around the home (Figure 2.2-1). Respondents were classified as 'active' or 'inactive' depending on their total daily energy expenditures.

Figure 2.2-1
Conceptual framework of Manitoba *In Motion* measures of physical activity



3. Discussion

3.1 Challenges

There were several issues with the CCHS data that prevented us from using it in the Manitoba women's health report. We discovered that the word 'moderate' was used to describe both an individual's activity level (moderately active) and the intensity of an activity (moderate effort). Given that Health Canada states that respondents **can meet** minimum PAG requirements through activities that require 'moderate' effort, we assumed that respondents classified as 'moderately active' had also met minimum PAG requirements. However, further investigation revealed that respondents classified as 'moderately active' only engaged in the equivalent of approximately 30 minutes of walking per day (1.5-2.9 KKD), meaning they **did not meet** minimum PAG requirements. Since we were only interested in those who were either active (met PAG requirements) or inactive (did not meet PAG requirements), we chose to exclude those deemed 'moderately active' from the analysis. The number of Manitoban respondents in the CCHS classified as 'active' through leisure time physical activity was at this point, too unreliable to be published⁴

⁴ Data with a coefficient of variation (CV) greater than 33.3% must be suppressed due to extreme sampling variability.

and consequently, we were unable to use the CCHS data for this indicator. Therefore, we believe that ‘moderately active’ is a confusing category that suggests respondents are engaging in sufficient physical activity to meet minimum PAG requirements— with room for improvement— when in fact, they are not. **It is not a classification health researchers can use if they seek to determine whether or not respondents are meeting minimum PAG requirements on a range between minimal and maximum health benefits.**

Additionally, by focusing entirely on leisure-time physical activity, the CCHS overlooks activities used by different sex, age, cultural, occupational, and income groups to meet daily PAG requirements (especially among women), and more accurately measures ‘episodic’ or vigorous activities typically undertaken by men such as sports and exercise (Ainsworth, 2000). This is problematic because the manner in which women classify physical activity and inactivity may be inconsistent with the measures utilized by health researchers. While women may be less active than men in terms of vigorous exercise, they may be more active in low or moderate intensity physical activities and/or engage in physical activities at work or in the home (Abel et al., 2001). For many women, leisure-time physical activity is insignificant, since they do not have substantial time away from work and home responsibilities (Lavallée and Bourgault, 2000; Tudor-Locke et al., 2003). Moreover, analysts have discovered that women belonging to different age and ethnic/racial groups often equate ‘busyness’ to physical activity (Dergance et al., 2003). In other words, researchers must find and apply physical activity concepts that are both meaningful to participants and consistent with the goals of their research. Failure to do so sends a message to women “that their time spent in household chores, caring for the family, and working to earn a living is unimportant and that these activities are unrelated to their health” (Ainsworth, 2000, p. 94).

3.2 New directions

Due to the shortcomings described above, we used the results from the 2007 Manitoba *In Motion* survey to examine physical activity trends among women in Manitoba. Unlike other studies reporting exclusively on leisure-time physical activity, *In Motion* determined that when all daily activities are taken into consideration, 70% of adults do in fact meet minimum PAG requirements and are therefore considered ‘active’. Despite the tendency for studies reporting exclusively on leisure-time physical activity to classify female and Aboriginal respondents as ‘inactive’, *In Motion* reported no significant differences between men, women, Aboriginals and non-Aboriginals. In fact, women were **more likely** than men to meet minimum PAG requirements (with the exception of those aged 18-34 years) and older men (80+ years) were surprisingly less likely to meet minimum PAG requirements than their female counterparts. More individuals reported getting activity in their jobs and through transportation than from playing sports and exercising, and many reported getting ‘lots’ of activity by doing yard and housework. This explains why a higher number of Manitobans met minimum PAG requirements in the Manitoba survey compared to leisure-time physical activity surveys such as the CCHS, which tend to over-emphasize participation in sports and exercise.

Although some may contend that *In Motion* has artificially inflated physical activity levels among men and women in Manitoba, we maintain that the conceptual definition is more consistent with Health Canada’s message to the Canadian public, and more reflective of the ways in which women lead active lives. By including activities performed at work, respondents with labor-intensive occupations who are unlikely to participate in leisure-time physical activity are correctly classified as ‘active’. Moreover, by including activities carried out around the home, *In Motion* recognizes that managing a household (caring for children, meal preparation, and errands) is ‘physical activity’ that commands energy expenditure sufficient to meet minimum PAG requirements. *In Motion* emphasizes an inclusive definition of physical activity that remains consistent with the research goals, and yet communicates to respondents that time spent working, caring for others and managing a household is important and related to good health. Perhaps equally as important, **the data are useful and available for health researchers, regional health authorities, policymakers and others who seek to report on physical activity trends in Manitoba.**

4. Conclusion

The CCHS has added to Canada’s capacity for in-depth analysis of health-related issues, but findings from the Manitoba *In Motion* survey strongly suggest that the CCHS has overlooked the breadth and diversity of activities that Canadians and Manitobans perform in their lives. Confusion surrounding the differential use of the term “moderate” meant that we could not use the CCHS results to describe physical activity trends among women in

Manitoba at the provincial and sub-provincial levels. Furthermore, by limiting the data to specific modes of physical activity and to specific realms of daily life, the CCHS does not resonate with the message expounded by Health Canada to 'build physical activity into your daily life at home, at school, at work, at play, on the way' nor does it move beyond a very exclusionary conceptualization of physical activity. In contrast, the Manitoba *In Motion*'s conceptualization of physical activity is comprehensive, and the measurements are clear. Furthermore, from a users' perspective, the absence of any confusing categories such as 'moderately active' prevents any problems of misinterpretation and misuse, making for a more reliable and user-friendly physical activity data source and questionnaire.

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