

## Physical Activity Attitudes, Beliefs, and Practices Among Women in a Woodland Cree Community

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**Background:** Overweight and obesity among Aboriginal women is a growing concern, with increasing prevalence rates linked to a sedentary lifestyle. Physical inactivity is a modifiable risk factor for unhealthy body weight; however before addressing health enhancing behaviors, understanding lifestyle practices, attitudes and beliefs are important. **Methods:** A mixed methods approach assessed physical activity (PA) practices ( $n = 58$ ), and attitudes and beliefs ( $n = 19$ ) among First Nations women. The Modifiable Activity Questionnaire assessed PA, and a focused ethnography explored attitudes and beliefs. **Results:** Self-reported PA was highest in the youngest age group. Both total and leisure-time PA decreased when house-related activities were not accounted for. Younger participants reported sport-related activities, while older participants reported traditional activities (eg, berry picking, fishing). Participants' believed PA promoted good health, yet personal (ie, lack of time), community-specific (ie, lack of opportunities/encouragement) and environmental (ie, inclement weather, safety) factors acted as barriers. Age-specific, women-only programs were highlighted as potential enablers. **Conclusions:** The findings highlight the need to assess cultural specific practices, attitudes and beliefs as PA programs that focus on reducing barriers identified in the community and are designed based on expressed interest and preferences may improve leisure-related PA levels among all age groups.

**Keywords:** exercise, Aboriginal, mixed methods, environment

Overweight, obesity and type 2 diabetes (T2D) have become prevalent in many Aboriginal<sup>1</sup> populations over the last half century,<sup>1</sup> with a change in diet and physical activity linked to this increase.<sup>2,3</sup> In Canada, rates of overweight/obesity in First Nations people range from 37%–90%, with higher rates consistently reported among First Nations women.<sup>3–8</sup> Further, prevalence rates of T2D among First Nations Canadians are conservatively estimated to be 20%,<sup>9</sup> 3–5<sup>10</sup> times greater than the general Canadian population. Physical activity (PA) is a cornerstone to treating T2D,<sup>11</sup> and the literature documents the efficacy of regular moderate PA, to delay or prevent T2D.<sup>12–15</sup>

Despite the beneficial effects of PA, data suggests nearly 80% of various Aboriginal populations are insufficiently active,<sup>3,16</sup> with higher inactivity rates among Aboriginal women<sup>17,18</sup> and reports that PA is no longer a priority for women.<sup>19</sup> To address low levels of PA, community-based PA programs have been initiated in Aboriginal communities, often in combination with nutritional programs. While some interventions have shown improvements in PA,<sup>20–23</sup> others have been less successful in changing PA behavior.<sup>24–26</sup> Those that have shown success have tended to be structured programs (eg, training programs, prescribed activity, aerobic classes),

which may not be feasible for all Aboriginal communities. The lack of positive results have been attributed to a greater focus on nutritional programs,<sup>24</sup> structural and environmental constraints (eg, lack of facilities, weather conditions)<sup>24</sup> and low program uptake by the community.<sup>26</sup> What remains to be elucidated however, are the sociocultural and physical environmental factors that influence PA participation.

A recent review of the PA literature among Native Americans suggests the social environment is an important correlate of PA in this population.<sup>27</sup> For example, social support,<sup>3,19,28</sup> child care and support for household tasks<sup>19,28</sup> were reported to influence PA among various groups of Aboriginal women. Sociocultural norms,<sup>19,29,30</sup> PA as a low priority,<sup>31</sup> and fear of ridicule/shame have also been identified as barriers to PA among American Indian<sup>19</sup> and Australian Aboriginal women.<sup>32</sup> Henderson and Ainsworth<sup>29</sup> suggest the way in which people act and live is shaped by the larger circumstances in which they find themselves. Therefore, understanding social and cultural factors that enable or inhibit engaging in PA may assist health practitioners in developing effective culturally-relevant PA programs and interventions for Aboriginal women. Thus, the purpose of this study was to characterize PA practices and explore PA attitudes and beliefs among First Nations women. This paper is part of a larger study which explored healthy body weight and healthy eating attitudes, beliefs and practices among Woodland Cree women living on a First Nations reserve.

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## Methods

### The Community

The participating community was located approximately 140 km west of a larger city on the Manitoba border and 350 km northeast from a midsized Canadian city (population approximately 218,000). It is accessible by a gravel road 30 km off a main highway throughout the year. The majority of community members were Woodland Cree and at the time of data collection, the population was estimated to be 972 with approximately 60% under the age of 25 years (mean age  $23.1 \pm 17.5$  years), as reported through a door-to-door survey conducted by the local health center. The unemployment rate was reported to be 28% and approximately 60% of residents over the age of 24 are reported to have less than a high school diploma.<sup>33</sup> Within the community, facilities and natural settings which provide opportunities for PA include a lake, an outdoor arena, an indoor ice center, a school gymnasium, a playground with an outdoor basketball court, and 2 other indoor venues as potential locations for various PA programs.

### Community Engagement and Consent

Community engagement began after members of the community identified physical inactivity and unhealthy body weights as 2 areas of concern in their community, and expressed an interest in becoming involved in a project that focused on increasing levels of physical activity and promoting healthy body weights.

Community consent was established from the local governance (board members, health portfolio councilors, health committee, community leaders and elders) before obtaining individual consent. All details of the consent were agreed upon in collaboration and consultation with the health director and the community project worker. The study protocol was approved by the participating University's Advisory Committee on Ethics in Behavioral Science Research.

Before collecting individual data, relationship-building was undertaken with members of the community and individual participants by immersion of the researcher (BB) in the community and day-to-day lives of community members through regular visits (ie, every 6–8 weeks) over 1 year. The visits were facilitated through the health clinic which provided an opportunity for members of the community to become familiar with the researcher, fostering rapport and trust.

### Participants

Females 15 years and older living in the community were eligible to participate. Opportunistic and snowball sampling techniques were used to recruit a convenience sample of women from 4 age groups: 15–24 years, 25–39 years, 40–54 years, and 55+ years (“elders”). The age groups were chosen to provide a transgenerational perspective as changes in the traditional hunter-gatherer lifestyle and influence on PA is believed to have occurred

within the last half of the century.<sup>1</sup> A number of strategies were used to try to maximize recruitment. Eligible participants were approached through various programs offered at the health clinic (parenting, youth, women and elder groups, wellness and dental clinics), as well as information sessions at the local high school. Personal invitations to those potentially overlooked during prior recruitment methods were delivered by community health workers during home visits to eligible participants. The overall participation rate among eligible females was 21% (31% of 15- to 24-year-olds; 14% of 25- to 49-year-olds; 15% of 40- to 54-year-olds; and 14% of 55+ year-olds). The proportion of participants in each age group closely reflected that of the community (ie, a greater proportion of participants under 25 years of age).

### Procedures

A mixed methods design, using a concurrent triangulation approach<sup>34</sup> was used to collect multiple types of data in a way which complimented the strengths and minimized the weaknesses of each method.<sup>35</sup>

Fifty-eight women (mean age  $27.2 \pm 14.2$  years) completed the Modifiable Activity Questionnaire (MAQ),<sup>36</sup> which assessed past year leisure-time and occupational activity. To ensure the leisure-time and occupational activities correctly represented those of the target population and geographic location, the list of activities was first modified with input from the community researcher assistant and then pilot tested on women in the community from each age group ( $N = 5$ ). Specific leisure-time activities that were added included: berry picking, broomball, canoeing, croquet, Aboriginal dance, summer and ice fishing, paddling, shoveling and snowshoeing. An “other” category allowed participants to add activities that were not on the list. Items added by participants included camping, elliptical trainer, home exercises, housework and setting snares. No additional activities were added to the list of occupational activities.

Estimates of leisure-time and occupational activity were calculated separately as hours per week (h/wk) averaged over the past year. Each activity was weighted by its relative estimated metabolic cost, deriving metabolic equivalent hours per week (MET h/wk).<sup>37</sup> Only leisure-time activities demanding an energy expenditure greater than activities of daily living (ie,  $> 2.0$  METS) and occupational physical activities, categorized by participants as moderate and hard, were included in the analysis.<sup>38</sup>

**Quantitative Data Analyses.** The MAQ data were analyzed using SPSS (v. 14.0). Estimates of leisure, occupational and total PA [median, (25%, 75%)] were determined for each of the 4 age groups. Because PA demands associated with house-related activities (ie, cooking and housework) may be difficult to quantify,<sup>18</sup> LTPA was analyzed with and without these items. The data were also analyzed with and without walking, as an activity done out of necessity (ie, for transportation) may be more difficult to recall than an activity done once or twice per week.<sup>36</sup> Physical activity was also categorized

into low (< 16 MET h/wk) and high activity ( $\geq$  16 MET h/wk) for each age group, based on the calculated estimates of total PA as outlined above. In keeping with the classification outlined in previous research, the cutoff of 16 MET h/wk was used as it approximates a 30-minute brisk walk daily<sup>38</sup> which is reflective of the current national guidelines of accumulating 150 minutes of moderate-vigorous physical activity per week<sup>39</sup>

**Ethnographic Study.** A focused ethnography explored the attitudes and beliefs of Woodland Cree women regarding PA, with attention given to the sociocultural context, as well as the influence of the physical environment. Focused ethnography draws on research techniques used in classical anthropologic ethnographies (ie, in-depth interviews, participant observation) yet is problem-focused, content specific and time-limited.<sup>40</sup>

Nineteen females (mean age  $37.6 \pm 16.9$  years) who completed the MAQ also agreed to participate in one-on-one interviews: 6 aged 15–24 years, 4 aged 25–39 years, 5 aged 40–54 years, and 4 aged 55+ years. Table 1 summarizes the demographic characteristics of the interview participants. The interviews were conducted by the researcher (BB) and a community research assistant was present at all interviews to provide translation and clarification for the participants and interpretation for the researcher. Interview sites were chosen by each of the women based on convenience and level of comfort, and included either the participant's home or the health center. Informed consent was obtained before beginning the interviews. A semistructured interview guide was used to elicit information regarding attitudes and beliefs about PA with particular attention given to exploring the sociocultural and physical environmental influences. The interviews typically lasted 1 hour, were audiotaped with the permission of each participant and transcribed verbatim by the interviewer.

The field notes were used to complement the interview data to provide a source of credibility (ie, internal validity) and confirmability (ie, objectivity) to increase the rigor of the findings.<sup>41</sup> Observational data were recorded during each community visit in the form of field notes,<sup>34</sup> and included observing potential PA opportunities and spontaneous PA in the community.

**Qualitative Data Analyses.** Qualitative data analyses proceeded concurrently with data collection and began by reviewing the field notes and interview transcripts. Transcribed interviews were analyzed through content analysis by identifying relevant topics and categories, and similarities and differences in the data.<sup>42</sup> As one of the objectives was to explore attitudes and beliefs from a transgenerational viewpoint, the data were then regrouped and examined by age group once all the interviews were completed. The field notes were used to triangulate the data by providing a source of data to validate and cross-check the findings of the interviews.<sup>42</sup> The field notes were also analyzed by sorting the data based on topics (eg, PA) and then organized into relevant categories (eg, barriers to PA, etc). The coauthors met frequently

**Table 1 Demographic Characteristics of Interview Participants (N = 19)**

Demographics	n (%)
Marital status	
Married/common law	8 (42.1)
Divorced/separated	2 (10.5)
Widowed	1 (5.3)
Single	6 (31.5)
Unknown	2 (10.5)
Number of children at home	
1 child	3 (15.8)
2 children	4 (21.0)
3 children	3 (15.8)
> 3 children	1 (5.3)
No children	3 (15.8)
Children not at home	6 (31.5)
Employment status	
Full-time	6 (31.5)
Part-time	4 (21.0)
Casual employment	1 (5.3)
Unemployed	3 (15.8)
Student	3 (15.8)
At home (retired)	2 (10.5)
Living arrangement	
Lives with spouse	8 (42.0)
Lives with children	6 (31.5)
Lives with other family	5 (26.3)
Lives with friends	1 (5.3)
Lives alone	2 (10.5)
Unknown	1 (5.3)

to cross-check the data by reviewing the transcripts and discussing and refining the coding and interpretations of the data. Standard procedures for establishing trustworthiness were applied<sup>43</sup> and included member checks and establishing an audit trail. The audit trail included all raw data (audiotapes of interviews, coded transcripts and field notes), data reduction and analysis notes and instrument information (interview questions, schedules, etc). Trustworthiness was enhanced through an external consultant with extensive experience in both qualitative research and working with First Nations communities. The consultant and the lead author met to review the interview transcripts, data analysis strategies, coding procedures and discuss interpretations of the data.

## Results

### Physical Activity Practices

**Leisure-Time Physical Activity (LTPA).** The most frequently reported LTPA included walking (84.5%), housework (58.6%), volleyball, (50%), running (41.4%), dance (36.2%), and basketball (29.3%). A greater proportion

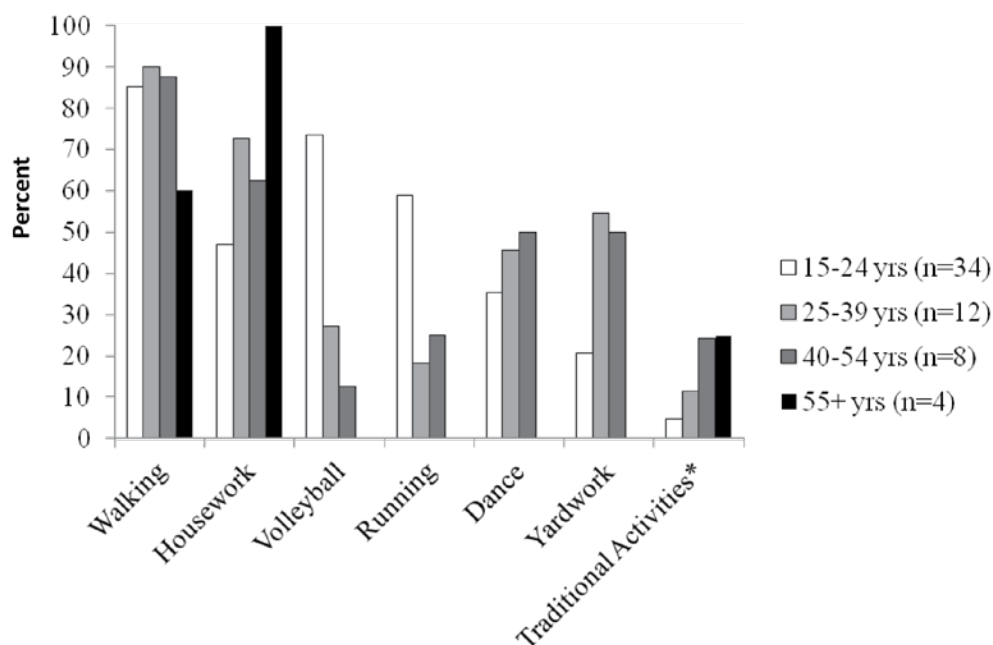
of younger participants reported sport-related activities (eg, volleyball), whereas the older participants typically reported traditional activities (eg, berry picking, fishing; Figure 1).

Highest LTPA levels were recorded in the youngest age group (15–24 years) and lowest among those aged 40–54 years (Table 2). When house-related activities were removed, a decrease in median LTPA levels was observed in all age groups (Table 2). Similarly, when walking, and both walking and home-related activities were removed, there was a decrease in median LTPA in all age groups (Table 2).

**Occupational Physical Activity.** Nearly 80% of the participants classified their occupational PA as light, therefore estimated total occupational PA was nearly nonexistent (ie, median values = 0 MET h/wk).

**Total Physical Activity.** Total PA levels (ie, LTPA and occupational PA) were lowest among those aged 40–54 years and highest in the youngest age group. Similar to the results for LTPA, total PA levels decreased in all age groups when home-related activities and/or walking were removed from the analysis (data not shown).

When classified into low or high activity, median total PA MET h/wk were classified as high (ie, >16 MET h/wk) for the majority of participants, regardless of whether walking was removed from the analysis (Figure 2). When house-related activities were removed, the proportion of participants classified as high activity remained essentially the same in the youngest and oldest age groups. The greatest decrease was noted in those aged 25–39 years in which half the participants would be classified as low activity (ie, < 16 MET h/wk). When both walking and house-related activities were removed,



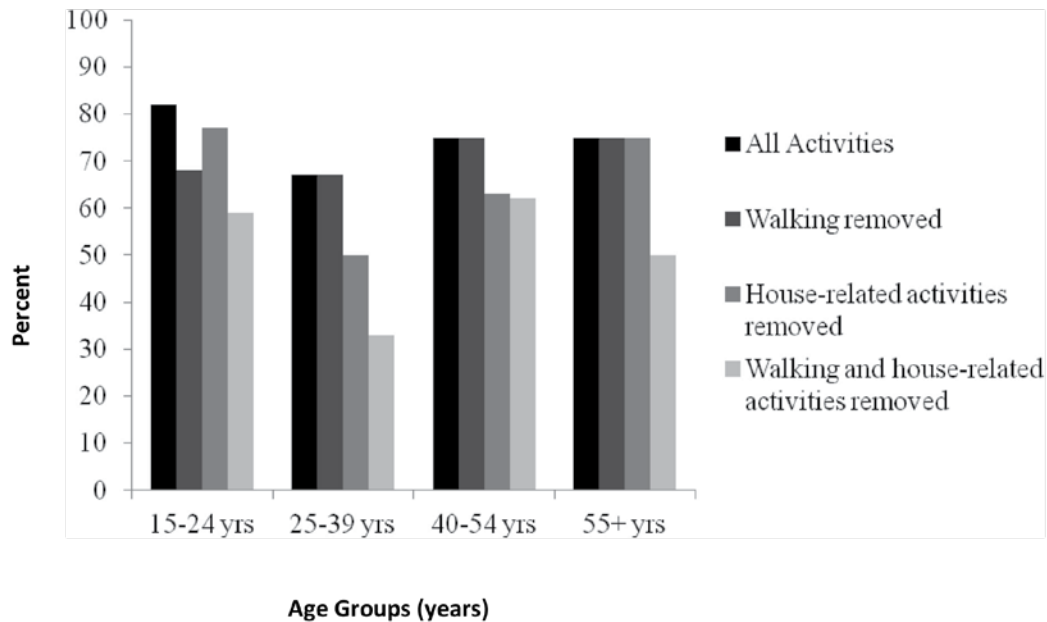
**Figure 1** — Percent individuals in each age group participating in the most frequently reported activities over the past year.

\* Traditional activities include berry picking, canoeing/paddling, fishing, hunting, shoveling, and wood hauling.

**Table 2** Median Physical Activity Levels [MET h/wk, (25th and 75th percentiles)] Overall and for Each Age Group

Age group	Median LTPA	Median LTPA—NH	Median LTPA—NW	Median LTPA—NHW	Median total activity (LTPA + Occupational)
Overall (N = 58)	33.8 (14.4, 57.0)	21.9 (9.5, 54.9)	21.4 (9.6, 44.6)	10.0 (3.6, 38.1)	37.7 (20.1, 81.8)
15–24 years (n = 34)	39.0 (14.4, 62.0)	25.0 (11.0, 56.7)	17.6 (9.0, 48.8)	9.8 (5.0, 41.8)	44.1 (25.3, 91.7)
25–39 years (n = 12)	34.4 (14.8, 59.2)	13.9 (7.6, 54.7)	21.4 (12.9, 57.0)	8.0 (0.9, 51.3)	36.6 (14.8, 79.9)
40–54 years (n = 8)	29.3 (9.8, 44.6)	17.1 (9.7, 37.1)	27.0 (9.2, 37.1)	15.7 (4.1, 33.4)	30.5 (13.9, 44.6)
55+ years (n = 4)	35.6 (16.2, 97.2)	25.1 (7.9, 62.6)	26.0 (14.0, 94.3)	15.0 (5.0, 60.4)	35.6 (16.2, 97.2)

Abbreviations: LTPA, Leisure-Time Physical Activity; NH, Median LTPA MET h/wk without house-related activities (cooking and housecleaning); NW, Median LTPA MET h/wk without walking; NHW, Median LTPA MET h/wk without house-related activities or walking.



**Figure 2** — Percent individuals classified as high total (leisure and occupational) activity. High total activity is  $\geq 16$  MET h/wk.

only one-third of participants aged 25–39 were classified as high activity, while 50%–63% of participants in the other age groups remained in the high activity category.

### Physical Activity Attitudes and Beliefs

**Physical Activity in the Community.** In this study, PA was defined broadly as the range of activities that moves your body, similar to that described by Casperson and colleagues,<sup>44</sup> and therefore encompassed sports, exercise, household and occupational activities as well as other daily and leisure activities. Regardless of age, participants described a wide variety of physical activities in the community including team sports (eg, broomball, volleyball, hockey, baseball), individual (eg, walking, running, skating, skiing), traditional (eg, berry picking, fishing, canoeing), and home-related (eg, housework, cooking, looking after the children) activities. Activities such as boating and bingo were also described, particularly among those aged 25–39 and 40–54 years.

**Perceptions of Physical Activity.** The participants' attitudes toward PA were positive and all believed PA promoted good health. Perceptions of PA extended beyond health. For example, the youngest participants commented that PA was fun, while women aged 25–54 described the psychosocial benefits of being active (eg, to meet people, get fresh air, feel better about yourself, get your mind off things, have fun with grandkids). Participants in the oldest age group generally described PA as a way to “be busy” and “not to be lazy.” Although lack of PA in the community and its relationship to being overweight and having T2D and high blood pressure were identified, this was a less frequent observation, identified only by participants in the 40–54 year age group.

When asked to provide self perceptions of PA and identify examples, all participants aged 15–24 years believed they were physically active, however interpretations of PA varied; half identified various sports (eg, volleyball, baseball, swimming), whereas others described house-related activities such as cooking, “cleaning up,” shoveling, and “walking a lot in the house.” Many women aged 25–54 years felt they were either not active, or ‘not active enough’ with most activity described as house-related such as “cleaning the house,” “taking care of the kids,” and “walking around work.” Most elders felt they did some PA and generally described traditional-types of PA (eg, smoking meat, hauling wood, sewing/beading, commercial fishing, and berry picking), in addition to walking.

**Barriers to Physical Activity.** Several barriers to PA were identified; many were similar between age groups, and were related to personal, community-specific, and environmental factors.

Personal barriers to PA identified by all but the elders included lack of time, too tired and childcare responsibilities. All age groups identified laziness, some describing this as a personal barrier to engaging in more structured types of PA (eg, regular walking program). Community specific barriers were also similar among participants 15–54 years and included lack of childcare, encouragement, opportunities for women to be active, and organized PA. Environmental barriers such as cold weather and personal safety (primarily from animals) were common among all age groups. Most women commented they were more active in the summer compared with the winter, mainly due to the weather. Few cultural factors were cited as influencing PA either positively or negatively, regardless of age. Some women in the 2 older

age groups (40+ yrs) indicated PA levels have changed over time because of decreased hunting and trapping, and increased modern conveniences resulting in less physical work (ie, chopping and hauling wood), however many of these factors were not specific to women. Few enablers to PA were raised, but included nice scenery and the small community size conducive to walking.

**Physical Activity Preferences.** The need for “women only” programs to encourage PA was frequently highlighted. Community-wide PA programs such as team sports (ie, volleyball, hockey, baseball, broomball) and activities designed for individuals or groups (ie, walking/jogging club, badminton, yoga, canoeing, hiking, swimming, skating, skiing, and curling) were also suggested for increasing PA. Access to childcare was voiced as an important component for PA programming, and many commented that if activities were organized, people would participate.

## Discussion

The literature documenting increasing levels of physical inactivity among various Aboriginal populations, particularly Aboriginal women, coupled with high rates of obesity and T2D, highlights the importance of understanding circumstances that enable and inhibit PA participation in this population. The one-on-one interviews conducted with a diverse group of women in a First Nations community revealed many similar attitudes and beliefs among all participants. While all participants believed PA was important for health, many felt they did not engage in enough PA. This finding was attributed by the participants to a number of barriers. Of these barriers, childcare responsibilities, including lack of personal time to engage in PA and lack of child care availability were the most salient, similar to previous literature.<sup>19,30</sup> Barriers to PA, such as being too tired, laziness, personal safety, and inclement weather, are consistently reported in the general population,<sup>45</sup> and among various groups of Aboriginal women,<sup>19,30,46</sup> and were echoed in this study, as well as a lack of regularly organized activities. While addressing personal barriers to PA remain a challenge, many community-specific barriers (ie, lack of childcare, opportunity, and organized activity) can potentially be reduced by providing childcare services and offering PA programs regularly throughout the year. The need for ‘women only’ PA programs was also highlighted and thus, weekly group-based activities identified by the participants (eg, volleyball, broomball) that provide a source of social interaction may address the personal barriers. Given many of the women have young children, their participation in regular PA may encourage younger generations to be active and address noted barriers in this study (ie, lack of encouragement) and in the literature (ie, need for role models).<sup>19</sup>

The majority of women over the age of 25 perceived they were not active enough and described most activity in the form of house-related activities. The latter is

consistent with the quantitative findings in that when house-related activities were not taken into account, LTPA and total PA levels decreased. Although precise estimates of energy expenditure are not possible using a subjective measure of PA, the median MET h/wk averaged over the past year in this sample suggests levels of PA that may be associated with health benefits (ie, > 16 MET h/wk; an approximately 30-minute brisk walk daily). These findings need to be interpreted cautiously however, given 1) the limitations of using the Compendium to determine the energy cost of PA,<sup>37</sup> 2) the time frame of the recall (ie, 1 year), and 3) the majority of participants reporting house-related activities as light intensity. Most international guidelines suggest moderate intensity PA to promote and maintain health benefits.<sup>47</sup> While household activities (eg, sweeping, window cleaning, vacuuming) performed at a sufficient intensity (ie, > 3.0 METs) may confer health benefits,<sup>48,49</sup> the results of this study suggest this is less likely in this sample given the reported low intensity of house-related activities. Based on the barriers identified, the data also suggest that the house-related activities serving as the primary type of PA may be more a function of social factors rather than a lack of interest or desire to participate in other forms of LTPA. Many participants highlighted the psychosocial benefits of being active and although this was not fully explored, household activities are typically done alone, indoors and may not be enjoyable when performed out of necessity. The decrease in overall activity when house-related activities were removed suggests programs that support and encourage women to engage in PA outside the home environment, and which are of sufficient intensity to promote health benefits, need to be developed. Given few enablers to PA were identified, incorporating a variety of activities suggested by the participants (eg, volleyball and dance), and taking into consideration age-related differences in PA preferences (ie, sport vs. traditional activities) may encourage greater involvement and increase levels of PA among women in the community who are less active.

While this study adds new knowledge to the literature on PA practices of First Nations women, there are both strengths and limitations. One of the strengths was the mixed methods approach. Because PA is a complex behavior, the benefits of linking quantitative and qualitative data afforded the ability to compare and contrast the results and provided a more in depth understanding of PA practices and the factors that enable and inhibit this behavior. The knowledge gained through a mixed methods approach can be used as a template to better inform and tailor effective culturally appropriate PA programs and interventions for Aboriginal women. This study also helps fill a gap in the literature by using qualitative methods to identify and understand factors influencing levels of PA among First Nations women in Canada.

The use of the Modifiable Activity Questionnaire (MAQ), a reliable and valid instrument for assessing PA levels in adults and adolescents over the age of 15 years,<sup>36,50</sup> is also a strength of this study. The MAQ



overcomes many problems encountered previously in measuring PA in ethnic populations, including Aboriginal peoples,<sup>36,51,52</sup> such as the contributions of different types of activities (ie, leisure and occupational), variability in interpretations of words (ie, 'leisure,' 'physical activity,' or 'exercise'), and interpretations of intensity levels of various activities.<sup>51</sup>

Some limitations of this study must also be acknowledged. The self-reported recall of the PA data and time-frame of the recall required (ie, 1 year), may have resulted in either under- or over-reporting of PA due to recall bias.<sup>53</sup> Future research which assesses PA over shorter time frames, multiple times over a year, may be less susceptible to recall bias,<sup>53</sup> yet still capture seasonal variability of activities. The sample size was small which limits the generalizability of the findings to the entire community. While all eligible females in the community were invited to participate, many did not, thus raising the potential for selection and participation biases. In addition, the method in which MET intensities were derived does not take into account individual differences (eg, age, body weight, cardiorespiratory fitness, etc)<sup>37</sup> which may have under- or over-estimated MET values. However, the Compendium of Physical Activities was developed to facilitate coding of physical activities and to compare across studies. Therefore, the findings of this study can be compared with future research using the Compendium to derive MET values on similar populations. Finally, this study used convenience sampling which limits the generalizability of the findings to other groups of Aboriginal women living in other regions (eg, urban settings or in less remote areas). However a recent review of PA patterns of Aboriginal people in Canada reported findings similar to this study in that women tend to engage in activities that are generally lower in intensity such as walking, childcare and housework.<sup>52</sup>

## Conclusions

Obesity, type 2 diabetes, and inactivity rates among Aboriginal women are growing concerns. While strategies to address these health concerns are needed, it is important to assess cultural specific PA practices, attitudes and beliefs and the various factors influencing PA participation before developing interventions. In this study, many of the barriers to PA identified are modifiable at the community level, and thus health promotion programs that strive to overcome these obstacles may help to increase activity levels among those less active. Recommendations to help improve the level of PA in this population include designing intergenerational PA programs (eg, mom, child, elder, daughter), organizing regularly scheduled activities throughout the year based on the interests of women in the community and provide childcare during program times. The PA programs should emphasize nonhousehold activities for both the mental and physical benefits, as well as focus on increasing the motivation for PA. Improving the PA levels among women in the community not only has the potential for

positive health outcomes for the women participating, but their involvement may have a valuable influence on other members of the family, particularly their children, by fostering the importance of a physically active lifestyle.

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## Notes

<sup>1</sup> The terms 'Aboriginal' and 'Aboriginal peoples' refer to indigenous inhabitants of Canada, including First Nations (individuals registered and not registered under the Indian Act), Métis, and Inuit peoples. In this paper, the term Aboriginal refers generally to the diverse group of indigenous peoples in Canada. Where specific Aboriginal groups are discussed, these terms are identified.

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