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“Unless it’s Productive, Why Waste it?”: Exploring Physical Activity Perceptions and Influences Among Older Adults in Rural Cape Breton, Nova Scotia
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1 Abstract

2 The purpose of this study was to identify factors that influenced physical activity (PA)
3 participation among older adults from rural settings in Nova Scotia, Canada and to
4 explore how the rural context may influence PA participation and promotion. Data were
5 collected via individual semi-structured interviews with 20 older adults ($M_{age} = 77.5$
6 years) from rural areas of Cape Breton, Nova Scotia, Canada and subjected to thematic
7 analysis procedures (Braun & Clarke, 2006). Four themes representing factors that
8 influence the prioritization of PA were identified: (1) Historical context of activity, work,
9 and productivity; (2) Already busy with day-to-day activities; (3) Being/staying on the
10 go; and, (4) Cautionary approach. These findings suggest that PA promotion should be
11 contextually salient, and highlight the need for a shared understanding between rural
12 older adults and PA promoters with respect to what constitutes being “physically active.”
13 Hence, effective promotion of PA among rural older adults may require a shift away from
14 contemporary methods of PA promotion.

15 *Keywords:* Aging, Physical Activity, Rural, Cape Breton, Qualitative, Busy ethic

16

1 “Unless it’s Productive, Why Waste it?”: An Exploration of Physical Activity
2 Perceptions and Influences Among Older Adults in Rural Cape Breton, Nova Scotia

3 Physical activity (PA) plays an important role in maintaining, as well as
4 improving, a variety of health outcomes in older adults (Nocon, Hiemann, Müller-
5 Riemenschneider, Thalau, Roll, & Willich, 2008; Paterson & Warburton, 2010;
6 Warburton, Whitney Nicol, & Bredin, 2006). However, despite the numerous benefits of
7 regular PA, even among those with chronic disease or who are physically frail, rates of
8 participation among older adults are relatively low. In fact, the majority of Canadians
9 aged 60 years and older are physically inactive; approximately 13% achieve 150 minutes
10 of moderate- to-vigorous PA per week and only 20% take 10,000 or more steps per day
11 (Colley et al., 2011). Furthermore, regional disparities in PA participation exist. For
12 example, among Canadians aged 65 and older, rates of leisure-time physical inactivity are
13 lowest in Canada’s most western province (British Columbia - 46.3%) and highest in its
14 most eastern province (Newfoundland and Labrador - 69.2%) (Statistics Canada, 2011).

15 Though a comprehensive examination of why such geographical disparities exist
16 has not been undertaken, studies have explored the relationship between degree of
17 urbanization and health status within Canada. For example, Mitura and Bollman (2003)
18 reported rural residents were more likely to smoke and be overweight compared to urban
19 residents. In addition, lower proportions of rural Canadians reported their health as
20 “excellent” compared to those from urban regions (Mitura & Bollman, 2003). Similarly,
21 Pong, DesMeules and Lagacé (2009) reported that rural Canadians tended to have poorer
22 health than those in urban areas; health status indicators were poorest among those
23 residing in the most rural areas (Pong et al, 2009).

1 With respect to physical activity, a similar rural disadvantage has been reported in
2 the United States, Great Britain and Europe. For example, Wilcox, Castro, King,
3 Housemann and Brownson (2000) reported the frequency, duration and intensity of a
4 variety of aerobic activities engaged in by adults over a two week period. Fifty-six
5 percent of rural and 48.7% of urban American women were sedentary ($p < .001$); 8.5% of
6 rural and 10.2% of urban women were regularly active (Wilcox et al., 2000). Similarly,
7 Van Dyck, Cardon, Deforche and Bourdeaudhuij (2010) used an objective measure of
8 PA, obtained by pedometers, to compare the step counts of rural and urban Belgian
9 adults aged 20-65 and reported that citizens residing in urban areas took significantly
10 more steps on weekdays (9,933) compared to those from rural areas (9,111) ($p < .05$);
11 overall, urban participants took more steps per day (9,323) than rural participants (8,775)
12 ($p < 0.1$) (Van Dyck et al., 2010). Among older adults aged 65+, Morgan, Armstrong,
13 Huppert, Brayne and Solomou (2000) compared the exercise participation of rural
14 Cambridgeshire (N = 1,021) and urban Nottingham (N = 1,020), England. Over a two-
15 week period, urban participants walked significantly more often than rural participants
16 (7.0 hr vs. 4.7 hr, $p < .001$) (Morgan et al., 2000).

17 The findings with respect to health status and physical activity reflect a fairly
18 consistent pattern within the literature; that is, an urban-rural disparity in health status and
19 participation in PA across adulthood. More specifically, the health status of rural
20 populations tends to be poorer than, and participation in leisure-time PA (LTPA) lower
21 than, the health status and rates of LTPA among urban populations (Keating, Swindle, &
22 Fletcher, 2011; Levin Martin, Kirkner, Mayo, Matthews, Durstine, & Hebery, 2005).
23 This is a particularly relevant issue within rural older adult populations; many of whom

1 are ‘aging in place’ (Davenport, Rathwell, & Rosenberg, 2009). Exploring the factors that
2 may help explain this discrepancy and increase rates of PA participation among rural
3 older adults in particular may assist in improving health outcomes.

4 Ecological frameworks provide a way to conceptualize and understand an
5 individual’s behaviour in context by positing that behaviour (e.g., physical activity
6 participation) is best understood as occurring within, impacted by, and influencing, a
7 series of dimensions or systems ranging from micro- (e.g., biological, psychological) to
8 macro- (e.g., climate, societal values and norms) (Sallis, Owen, & Fisher, 2008; Spence
9 & Lee, 2003). A relatively large number of studies that have adopted an ecological
10 approach report quantitative findings with respect to aspects of the physical environment
11 and how these are conducive to, or detract from, PA (e.g., neighbourhood characteristics)
12 (McCormack & Shiell, 2011). Although important, an emphasis on other macro elements
13 (e.g., norms and values related to PA within the larger historical context) is required to
14 broaden current understanding regarding rural older adult PA participation.

15 To contribute to what is currently known in the literature regarding rural older
16 adult PA participation, this study utilized qualitative methods to identify factors that
17 influenced PA participation among older adults from rural settings in Nova Scotia,
18 Canada and to explore how the rural context may influence PA participation and
19 promotion. As such, this study responds to calls from xxxxx, who emphasized the
20 importance of adopting research approaches and methods (e.g. qualitative) better suited
21 to explore factors not easily captured by quantitative data, toward developing a broader
22 understanding of participation in PA among rural older adults.

23

Method

1 **The Case for Physical Activity Research Among Older Adults in Nova Scotia**

2 Data were provided by residents of Cape Breton Island, which is located in NE
3 Nova Scotia, on the east coast of Canada. The province of Nova Scotia has the highest
4 proportion of residents aged 65+ (16.6%) (Statistics Canada, 2012a), more than double
5 the national average of proportion of rural residents (> 40%) (Statistics Canada, 2012b),
6 and the third highest rate of physical inactivity among those aged 65+ in Canada (63.5%)
7 (Statistics Canada, 2011). These trends are associated with a significantly higher
8 prevalence of diabetes and hypertension in Nova Scotia, compared to the national
9 average (Lee et al., 2009; Public Health Agency of Canada, 2011). Cape Breton has a
10 land area of 10,416 km² and population of 135,974, which declined 4.4% from 2006 to
11 2011 (Statistics Canada, 2012c). Specifically, the proportion of adults aged 60 years and
12 older in the Cape Breton region is higher than in urban Nova Scotia (21% vs. 15%); rates
13 of chronic disease such as high blood pressure and diabetes are also disproportionately
14 high in Cape Breton with incidence rates of 25% and 11% respectively (Cape Breton
15 District Health Authority, 2006; Hayward & Colman, 2003).

16 **Recruitment**

17 Quota sampling, a purposeful sampling strategy in which cases are selected based
18 upon particular eligibility criteria (Morgan, 2008), was used to facilitate participant
19 recruitment. ~~Eligible participants were: based on the following criteria: men and women~~
20 (i.) Men or women aged 65+; (ii.) who were community-dwelling, permanent residents of
21 rural Cape Breton communities and had lived in rural NS for the majority (if not entirety)
22 of their life. Consistent with a purposeful sampling approach (Patton, 2002), the lead
23 researcher relied upon personal contacts to recruit participants considered likely to

1 provide information-rich data and insight with respect to the study's purpose. To
2 safeguard against the recruitment of a very narrow range of participants (i.e., only those
3 perceived as "active"), the lead researcher emphasized the importance of speaking with
4 participants who may have had, but also with those who may not have had, a history of
5 physical activity participation. Specifically, community stakeholders, community health
6 board members and attendees of a local fitness class provided the lead researcher with a
7 list of names and contact information of individuals deemed likely to provide a
8 thoughtful and rich account of their perceptions and experiences. Upon receiving this
9 information, the lead researcher extended an invitation to each potential participant via
10 telephone or by personal visit. All recruitment and data collection methods were
11 reviewed by, and received approval from, a University Research Ethics Board and a
12 District Health Authority Research Ethics Board.

13 **Participants**

14 A total of 20 older adults (10 men and 10 women), ($M_{age} = 77.5$ years, age range:
15 68-97 years) were recruited. Participants resided in 14 Cape Breton communities within
16 several rural counties including: Cape Breton, Inverness, Richmond and Victoria.
17 Nineteen participants were currently or previously married. Seven participants who were
18 previously married were currently living alone due to a deceased spouse. Two other
19 participants lived alone. Eleven participants currently lived with a spouse. Half of them
20 had obtained a Grade 12 education or higher, ranging from Grade 5 to a Master's degree.
21 Two participants completed teacher's college but did not pursue a career in teaching.
22 Nine participants pursued post-secondary education at various levels (i.e., university,
23 college and trade school courses).

1 Thirteen participants were employed outside the home prior to retirement. Seven
2 female participants were homemakers. Participants had worked in a variety of
3 occupational fields including education, health care, engineering, maintenance, food
4 preparation, administration, law enforcement, forestry and the fishery. Five participants
5 received military training prior, or during, World War II, and one participant saw active
6 duty in Europe during World War II.

7 **Data Collection**

8 Data were provided during two fieldwork trips to Cape Breton (March 3 – March
9 30, 2009 and October 26 – November 27, 2009). Participants completed individual semi-
10 structured interviews at his or her home, conducted by the lead researcher. Participants
11 were asked questions about his or her place of residence and childhood experiences,
12 health, aging, routine activities, activity preferences, and lifecourse activity. In addition, a
13 portion of the interview was devoted to assessing older adult participants' awareness and
14 perceptions of Canada's Physical Activity Guide to Healthy Active Living for Older
15 Adults (Health Canada, 1999)¹. All interviews were digitally recorded and were, on
16 average, 100 minutes in duration.

17 **Data Analysis**

18 Digital audio files were transcribed verbatim². Participants were assigned
19 pseudonyms and transcripts were stripped of any personal identifying information.
20 Interview data were then subjected to a thematic analysis approach (Braun & Clarke,
21 2006) whereby patterns (themes) were identified and constructed through an inductive,
22 iterative process; moving back and forth between data collection and analysis phases
23 (Braun & Clarke, 2006; Morse, Barrett, Mayan, Olson, & Spiers, 2002) during both field

1 work trips. In this manner, theoretical sampling (Corbin & Strauss, 2007) was undertaken
2 by systematically checking data obtained early on in the process ~~were systematically~~
3 ~~checked and to~~ guide subsequent data collection toward confirming (or challenging)
4 ~~interpretations confirmed via subsequent data collection (Morse et al., 2002). Between~~
5 fieldwork trips 1 and 2, analysis focused on identifying categories that were not yet
6 saturated - the point at which all concepts were well defined and explained (Corbin &
7 Strauss, 2007) and flagging for follow-up any other information deemed potentially
8 important; both informed the design of subsequent interviews during the second
9 fieldwork trip.

10 Toward defining and labeling the final themes produced, all interview data were
11 initially 'broken apart' by reading/reviewing each transcript, followed by generating
12 initial codes created to denote and describe 'chunks' of text deemed
13 meaningful/noteworthy. Once all transcripts had been coded in this manner, the analysis
14 progressed toward searching for, and identifying, preliminary patterns (themes) based
15 upon similar 'chunks' of data across the entire data set. Upon creating an initial set of
16 themes, analysis shifted toward identifying broader patterns in the data – that is,
17 establishing the number of themes deemed sufficient to capture the essence of the main
18 patterns contained within the data set, followed by creating a label and description of
19 each. Through this process, themes deemed sufficiently similar to one another were
20 combined. Analysis 'cycled' through waves of code development/refinement and theme
21 development/refinement, guided by constant comparison (Glaser & Strauss, 1967) toward
22 the final selection of themes. The iterative approach to data collection/analysis as

1 described facilitated saturation whereby all themes were well defined, explained and
2 developed sufficiently to account for variation (Corbin & Strauss, 2007).

3 procedures were concurrent, which enabled us to identify areas that were not yet
4 ‘saturated’ – the point at which all concepts are well defined and explained (Corbin &
5 Strauss, 2007). One way in which saturation was approached was through theoretical
6 sampling (Corbin & Strauss, 2007), by ensuring initial concepts generated in the first
7 fieldwork trip were pursued and explored during the second fieldwork trip.

8 **Validity**

9 Following Morse et al. (2002), techniques for validity and verification were built
10 into the research design including: methodological coherence (ensuring congruence
11 between the research question and the components of the method), the selection of an
12 appropriate sample (participants who best represent or have knowledge of the research
13 topic), concurrent data collection and analysis (iterative interaction between data and
14 analysis) and thinking theoretically (ideas emerging from data and reconfirmed in new
15 data).

16 With respect to methodological coherence, conducting semi-structured qualitative
17 interviews, to obtain richly described data, and a thematic analysis, on data which
18 informed an under researched topic (Braun & Clarke, 2006), aligned with the study’s
19 research questions (focused on identifying factors that influence PA participation and
20 exploring how the rural context may influence PA participation and promotion).

21 We ensured our sample was appropriate by recruiting participants~~These included the~~
22 ~~selection of an appropriate sample~~ who had knowledge of the research topic and could
23 provide ‘information-rich’ data. Concurrent ~~D~~data collection and analysis was addressed

1 [in the manner described previously – by moving back and forth between data collection](#)
2 [and analysis phases. This process also demonstrated ‘theoretical thinking’ by specifically](#)
3 [guiding subsequent data collection to confirm \(or challenge\) current interpretations.](#)
4 ~~procedures were concurrent, which enabled us to identify areas that were not yet~~
5 ~~‘saturated’ – the point at which all concepts are well defined and explained (Corbin &~~
6 ~~Strauss, 2007). One way in which saturation was approached was through theoretical~~
7 ~~sampling (Corbin & Strauss, 2007), by ensuring initial concepts generated in the first~~
8 ~~fieldwork trip were pursued and explored during the second fieldwork trip. Additionally,~~
9 consistent with analytical trustworthiness (Rodham, Fox, & Doran, 2013) and interpretive
10 rigor (Denzin & Lincoln, 2000), the lead researcher engaged in discussion and debate
11 with doctoral supervisory committee members throughout the research process by sharing
12 his field notes and memos, interview transcripts and various data coding procedures
13 toward reaching researcher consensus regarding interpretations and representations. In
14 this way, members of the doctoral supervisory committee acted as ‘critical friends’
15 (Costa & Kallick, 1993; [Faulkner & Sparkes, 1999](#); [Manning, 1997](#)).

16 **Results**

17 **Factors That Influence Activity Prioritization**

18 [Our analysis resulted in the construction of four main themes that represented,](#)
19 [“Factors that Influence Activity Prioritization.” Specifically, this overarching category](#)
20 referred to historical, social, and personal factors that appeared to influence ways in
21 which older adults prioritized activities (including but not limited to PA) and provided
22 insight into key issues that should be considered in the promotion of PA. The following
23 four themes [identified, which](#) represented this [overarching](#) category, [were](#): *Historical*

1 *context of activity, work and productivity; Already busy with day-to-day activities;*
2 *Being/staying on the go; and Cautionary approach.* Each theme is described below and
3 ways in which it may influence PA explained.

4 **Historical context of activity, work and productivity.** Participants' earlier life
5 experiences appeared to influence current patterns of activity participation in terms of
6 how they prioritized work-related activity and productive tasks. Therefore, the

7 ~~concept~~theme of "historical context of activity, work, and productivity" referred to the
8 historical and cultural milieu as it related to work and leisure-time activity participation.

9 Several participants suggested LTPA was a relatively recent concept. Josh explained,

10 Yes, there are more people walking now, just for the sake of walking...In my time
11 you never heard of that. And of course everybody walked wherever they went
12 anyway. But ah...you know, not just for – for the sake of things...

13 Jack offered a similar perspective,

14 We never did any exercise...Now they've got – ice rinks everywhere,
15 eh?...There's places to exercise. There's soccer and baseball, all kinds of games
16 eh? We had nothing. So you can see the difference...what chance did I have to
17 exercise? [I] never knew anything about exercise. No televisions or anything. We
18 never saw that. Today it's altogether different. Didn't know what exercise was
19 really. Someone say, 'exercise.' You-you did walking or running but that's about
20 all you knew. No, I don't think I ever saw – when I was young, ever saw any –
21 any kind of exercise. Maybe never heard the word.

22 The possibility that exercise in particular, and PA participation within a leisure
23 context more generally, could be foreign concepts, directed data collection and

1 subsequent analysis toward investigating reasons which might help to explain this novel
2 finding. Based on our analysis, one A potential reason for participants' unfamiliarity with
3 LTPA/"exercise" was that prioritization of work-related activity ~~was a priority~~. For
4 example, Gary pointed out that during his youth, "We didn't have enough time to be
5 bored, we had to work or do something." Participants' early activity experiences were
6 primarily work-centered. Work tasks were seen to be purposeful and productive
7 activities, whereas PA 'for the sake of it' was largely irrelevant for these participants. For
8 example, Josh suggested the importance of a particular work-related activity for him was
9 due to its "usefulness;" an activity perceived to be purposeful/productive,

10 ...if I can use that energy producing something – I'd rather do that...unless it's
11 productive, you know, why waste it? If you can use the same time or the same
12 energy doing something productive, why do something that doesn't matter [like
13 walking], you know?

14 Of particular interest was how this ~~The significance of this~~ The historical
15 prioritization of purposeful and productive activities ~~appeared to~~ relates to how it may
16 have influenced the ways in which participants were active in their older adulthood. For
17 example, Bernard continued to "...[make] kindling. And [take] the wood in" while Gary
18 emphasized his desire to "keep things in repair around the home." Activities such as these
19 were prioritized in older adulthood and became important components of participants'
20 daily routine.

21 Historically then, for many ~~of these~~ participants, PA was associated with being
22 productive through physical labour. Several participants articulated the importance of

1 such work-related PA. For example, Amanda viewed PA from the perspective of ability
2 to perform work tasks. She said,

3 ...At the time...I knew it was important to exercise to be in shape, to build your
4 muscles...I said [to my sons], 'some day you're going to be working, maybe in
5 the lumberyard or whatever, you're going to need muscles.' So, I guess that's
6 basically what I, and-and my parents were always, you know, for that too.

7 Jack also drew a comparison between work-related activity and exercise from the
8 point of view of health when he said, "A man who's working hard, he doesn't need much
9 exercise." Amanda made it clear that participation in work-related activity remained
10 important to her when she discussed a recent heart attack, "...it was in the summer time
11 and we were busy making hay and they needed me on the tractor. I couldn't go [to rehab
12 exercises for a heart attack]...[the doctor] said it was OK [not to go and to make hay]."

13 In summary, an examination of the historical context in which participants grew
14 up provided insight into participants' current experiences and perceptions of activity.
15 With respect to PA experiences, participants were relatively less familiar with forms of
16 LTPA participation in their youth and adult lives compared to participation in activity
17 within a work context; participants placed particular value upon work-related PA.

18 **Already busy with day-to-day activities.** The ~~concept~~theme "Already busy with
19 day-to-day activities" was constructed based upon discussions with participants regarding
20 their current routines and reflected an examination of the (in)flexibility to introduce new
21 activities in which particular routine activities appeared to be valued over others.
22 "Already busy with day-to-day activities" referred to participants' reluctance to
23 incorporate additional PA into their daily routines because they perceived themselves to

1 be too busy with other activities and lacking time. For example, when asked to comment
2 on Canada's PA Guidelines for Older Adults (Health Canada, 1999) and asked to
3 consider how she might meet the minimum recommendations for endurance, strength and
4 flexibility activities, Amy said,

5 ...well see I'm not looking for anything extra to do. Like my time is really taken
6 up [with activities such as helping with the family business, yard work and
7 walking]. But I suppose if I would be looking, or had extra time, yeah, I would, I
8 would look at it, yes I would.

9 Similarly, Crystal expressed concerns regarding fitness classes becoming a barrier to
10 participating in other activities,

11 But just to go and do routine exercises every day without some kind of feeling
12 that, 'why am I wasting my time at this?' I think it's probably where I was a little
13 bit. Because...I had so many other things on my plate. And I'd be cancelling and
14 everything...I think, when you get to be 70 you probably think, 'Oh, I'm just
15 going to do my own thing.'

16 Amanda also had concerns regarding completing other activities if she were to join a
17 fitness class,

18 Now, it's funny how you asked that because there is an activity group in [my
19 community] and they're doing physical exercises and they're trying to get a group
20 together. They didn't ask me, but I was kind of thinking, ah, maybe I should, you
21 know? But then I got thinking, oh no, then I can't work, I can't, when [my
22 daughter] calls I can't go. So I said no, I'm not going to do that, I'll just go for my

1 walks and, ah, try and do my own. Because, it might interrupt my schedule. But
2 that's the only reason. Otherwise, I would have been interested in doing it.

3 Similarly, when asked about his capability of performing physical endurance,
4 strength and flexibility activities as depicted by Canada's PA Guidelines for Older
5 Adults, Josh remarked,

6 Oh, I suppose that there are probably quite the few that I could do, but again, the
7 willingness to do it, you know, I feel that I have a lot of things I need to do before
8 I go permanently and if I want to get as many of those done as possible. I don't
9 know why, but that's-that's life as far as I'm concerned. But ah, no, I'm not ah – I
10 don't think that I'd be willing to go after activities you know, walking or, doing
11 other types of functions – physical functions...I don't think that there's anything
12 wrong with them. I think they're fine, you know. Especially if you have nothing
13 to keep yourself occupied. But in my case I can't see where there's...time for
14 this...

15 Participants' comments reflected a perceived inability to adopt additional physical
16 activities due to already being busy with other day-to-day activities. Consistent with this
17 perspective, but Gary emphasized highlighting the importance of his current choice of
18 activities, Gary made the following comment,

19 What I'm getting at – I go out in the morning, say nine o'clock and all the things
20 you have to do around a home – prepare for...get everything ready for the
21 summer. And get everything in the fall ready for the winter...well I'm busy
22 enough summer and in the spring and in the summer and in the fall doing all these
23 things that I don't need exercise because I'm active enough to take the place of

1 them because it's not – I don't do just one type of work – today probably I'm out
2 doing something...working from nine o'clock in the morning until one in the
3 afternoon.

4 In summary, although some participants did sporadically participate in some
5 forms of light intensity PA (e.g., walking, yard work), he or she often did not incorporate
6 PA on a regular basis as part of his or hertheir regular day-to-day activity routines
7 because they werehe or she was 'already busy.' Given the value often placed upon these
8 regular day-to-day activities, participants appeared resistant to change. These data, again,
9 speak to the challenges of promoting PA among older adults because those in this study
10 often did not value PA for its own sake.

11 **Being/staying on the go.** In addition to the concept that participants already
12 perceived themselves as too busy and lacking time to incorporate most forms of regular
13 PA into their daily activities, there was also a belief he or she kept 'on the go' (i.e.,
14 “active”) by virtue of participation in these, prioritized, daily activities. In fact,
15 participants generally placed a high value on the need to be 'on the go.' For example, it
16 was clear that Amanda believed she should not be idle nor sit and use her time
17 inefficiently, “If I sit in the kitchen on the couch I'm finished. I'll fall asleep. You know,
18 I don't want that.” Similarly, Amelie explained, “...I just can't sit and do nothing. I can't
19 – you know. Yeah, have to keep going.” Consistent with this philosophy, Larry said of
20 being active,

21 ...[it's] a great thing to do. The old saying is – if you want something done, ask
22 somebody that's busy. If you want something done, ask somebody that's busy

1 they'll do it for you. Somebody that's lazy, that's doing nothing, is not going to
2 do anything.

3 Again, participants valued being active seemingly due to the importance placed on the
4 engagement in purposeful and productive activities. For Gary, it was work rather than
5 PA. He said, "I got to – I feel better when I'm working... Every day since I retired, I – if
6 I feel good enough, I've got something planned... I'd go crazy if I [couldn't] work."
7 Echoing similar sentiments, Josh remarked, "I don't like to see things left undone. And
8 it's almost an obligation in your mind. You feel guilty if you don't do it, ah? Yeah.
9 And...that's upbringing eh? Yeah." From the point of view of participants, it was
10 important not to be idle, to make good use of one's time and to remain engaged with life
11 through activity.

12 It appeared that participants almost feared the consequences of *not* being on the
13 go. For example Tina said,
14 ...["Active"] means I can be on the go all the time. And, that's it. As far as I can
15 see. To be able to run out and be independent and do your own thing. You know,
16 some nights I go to bed, 'what if something came over you really fast?' And ah,
17 you couldn't, you know, you couldn't be independent anymore. That would be
18 terrible.

19 From Tina's perspective, her current activities were a key part of maintaining her
20 independence, which was clearly a vitally important thing to her. Perhaps not surprisingly
21 then, when asked about his or her current level of PA participation, many participants
22 perceived themselves to be "pretty active." For example, Bernard replied, "Hmmm...well
23 I think I'm fairly active. I go out pretty well every day for a walk." However, when

1 prompted, participants used the term “physical activity” very broadly and in such a way
2 as to equate being on the go or “active” with “physically active.” For instance, when
3 referring to his wood working activities, Josh responded, “Well, for my age and my
4 physical condition I’m as active as I can be. I go – I’m all day down there.” Josh
5 reinforced his perception of the physically active nature of his activity by remarking,
6 “...of course you walk around, back and forth – when you’re down there you don’t sit
7 down. You move – you’re going, pretty much all the time...” and made his thoughts on
8 its contribution to health clear, “I feel you can get enough exercise if you do it around
9 home. Do the things you have – need to do.” Similarly, Jacob considered his wife and
10 himself,

11 ...as active as people in our age group. You know, you – there’s exceptions to all
12 these rules. There’s people eighty years old still playing hockey but I mean that’s
13 an exception. Yeah, no, we – we’re out and about. We maintain our own
14 property...grass mowing, painting...

15 Some participants stayed on the go by volunteering in their respective
16 communities, like Carol who said she was, “involved with the hospital auxiliary” and
17 Andy, who said, “I more or less volunteer my time around.” Similarly, Amanda,
18 “help[ed] out the neighbours, [attended] mass everyday...join[ed] whatever [she
19 could]...to help out in the community.” For Crystal, being active included, “do[ing] all
20 my own baking...attend[ing]...community meeting[s] or a church meeting” and for Gary
21 completing, “everything you have to do around the home” for winter was an important
22 part of being active. This included, “putting markers out and putting ropes and stuff
23 around the trees to keep the moose and that from tearing them up” and during the winter

1 working from the basement, “tak[ing] [things] apart and fix[ing] it.” Also working from
2 his basement, Josh indicated he was, “as active as I can be. I’m all day down [in my
3 workshop].”

4 In summary, participants clearly communicated the importance of being/staying
5 on the go and did so by engaging in various forms of tasks and activities. Although we do
6 not discount the value of such engagement, a critical assessment of these findings
7 revealed that participants did not view regular participation in PA as part of this “active”
8 engagement (i.e., being/staying on the go) and were at best, sporadically engaged in
9 mostly light intensity PA. Thus, although participants indicated being idle was not
10 desirable, they did not appear to value regular participation in PA as a way to be “active.”

11 **Cautionary approach.** The previous ~~concepts in this category~~ themes described
12 revealed some of the historical and social complexities that influenced PA promotion for
13 the participants in this study. In addition to these complexities, participants had other
14 personal beliefs about the value of PA and concerns about their capabilities that
15 suggested many took a 'cautionary approach' toward PA; ~~It seemed that participants had~~
16 ~~a “Cautionary Approach” to PA, which meant they were careful to limit their exertion~~
17 ~~and questioned the usefulness of participating~~ their participation in a variety of physical
18 ~~activities due to concerns about~~ their capabilities and the perceived harmful effects.

19 Most participants *did believe* that being physically active was 'good for you.' For
20 example, Bernard said that PA was, “good for your health and it gets your blood flowing
21 good too... get a sweat on, and, if you do it for a while. All of that is good.” Andy
22 recognized the mental benefits of PA, “...not only is it good for the body, it’s good for
23 the mind” and Larry stressed that, “when you’re walking, if you’re smart, you’re thinking

1 about doing something.” *However*, several participants were concerned about their ability
2 to engage in PA due to their age. For example, from Gary’s perspective [Gary was 85
3 years old], “certain exercise[s] you could build up strength but I mean, not me that much
4 now.” Similarly, although Jack said, “...exercise is not going to hurt you. It’s going to
5 help you,” he admitted that, “after you get over 90 I don’t think ah, there’s too much
6 [improvement].” Participants’ views highlighted a paradox – although he or she appeared
7 to value PA and exercise, they also suggested it would probably be pointless for them.~~It~~
8 ~~seemed that participants had a “Cautionary Approach” to PA, which meant they were~~
9 ~~careful to limit their exertion and questioned their participation in a variety of physical~~
10 ~~activities due to concerns about the perceived harmful effects.~~

11 A number of participants were also voiced concernsee about the potential
12 physical risks of PA. For example, when asked about a local fitness centre Wilson
13 remarked,

14 Well I mean, that’s why I don’t like the gym. Ah, the exertion part. Ah...and I
15 don’t know, you see, again, my age – I don’t consider myself old. But ah...I don’t
16 know if exertion would be good for me. You know, that’s the other side of it.

17 Wilson’s concerns appeared to relate to perceptions regarding appropriate activity at his
18 age. Gary expressed similar sentiments when asked to comment on Canada’s PA
19 Guidelines for Older Adults, although it was less clear if his concerns were due to age or
20 health,

21 I couldn’t lift or build up, ah, here, like this, with weights or things because I’m
22 scared I would damage my heart. And this – I’m not supposed to, I’m not
23 supposed to reach over my head. So, I don’t think it would be, at the age I am

1 now, or not my age, just, the state my body is in, that it would, it would help me.
2 I'd be scared it would probably do me more harm than good. I'd be rocking the
3 boat I think if I tried to do push-ups or things like that.

4 Guarding against over-exertion appeared important to others as well. For example,
5 Amanda had this advice for her husband, "I just tell him, you do, what you, what your
6 body tells you. If you're tired, you stop. You know? You don't over exert yourself."
7 Similarly, Larry indicated, "I wouldn't want to ah – overdo it. You gotta know your
8 limitations, that's about the size of it" and Crystal spoke of a senior's fitness class which,
9 "...was a little bit too strenuous."

10 Generally, the comments made by participants were consistent with a view of old
11 age as a barrier to PA participation; that is, participants considered themselves "too old"
12 to be physically active. Old age and ill health were often used in a mutually inclusive way
13 and several participants expressed concerns over specific health problems. For example,
14 when asked if he thought it was too late to start getting back into shape, Jacob responded,
15 ...to whip myself back in shape, I don't know what avenue I'd have to take... I
16 don't want to end up in a pile on the floor up there. Ah, the poor bastard, we
17 didn't know he had a heart problem. Ah, he's dead!

18 Bernard was also concerned about PA in light of his diabetes,
19 ...if I did too much, sweating, start sweating and everything, my sugar may go too
20 low. And if that happens you feel terrible altogether. ...So that would be one thing
21 I'd have to – kind of consider, if I was doing too much altogether.

22 Several participants doubted they were physically able (or at least perceived
23 themselves to be very limited) in terms of performing particular physically active tasks.

1 Jacob expressed this idea very succinctly, “Yeah, well, can I do it? – is the first question
2 comes to mind.” With respect to visiting a local fitness centre, he continued,

3 [The fitness centre] has been there for five or six years. And there’s lots of people
4 around me that go. But I never darkened the door of the place, because I was a
5 little reluctant...I didn’t know if I could – if they put me on a treadmill or
6 something, I know I can’t do that very good, you know.

7 Other participants also seriously doubted their ability to engage in physical activity. For
8 example, Bernard spoke of doing push-ups in the past and when asked about doing them
9 now replied, “Oh, I couldn’t do a lot of them anymore, but I could do maybe – maybe
10 ten. At the most. Or I’d get tired like. My arms and that,” and with respect to taking a 30-
11 minute walk responded, “No, I don’t think I could [go for a walk] for thirty minutes. Not
12 without stopping...on account of my legs. I could do some of it but not that long.”

13 Similarly, Hilda said, “I don’t think I could do thirty minutes but I could – go for a walk,”
14 Jack replied, “I can’t walk” and Jacob responded,

15 I know I’d work awful hard to get up to be able to walk a-a mile. ...that wouldn’t
16 happen overnight. Now whether I’d ever be able to do it I don’t know. Yeah, I’m
17 ah, fifty pounds over my normal weight.

18 Similarly, Gary spoke of running in the past and said,

19 There’s no way I could do that today. There’s no way I could even – on the level,
20 run any distance. In fact, my legs wouldn’t let me do it along with my heart. I
21 notice a difference in my legs down there this year, but, other than that, it’s – you
22 gotta accept I guess what’s dealt out for you.

1 A couple of participants provided particular insight into local older adults' real or
2 perceived limitations with respect to PA participation. Mabel had this to say with regards
3 to participating in a formal PA setting,

4 ...seniors need a little extra motivation. Mostly because some of us feel, well, we
5 really can't do that... I think seniors need to know that it's not like a competition?
6 It's something you're going to do for you? I know the basis for all of activities
7 should be for you, but, I think with older people we feel that maybe we're not up
8 to the task?

9 Andy spoke very frankly about his sincere belief that, "there are a lot of people around
10 here that...round my age that if they tried to do...any strenuous exercise of any kind
11 they'd – they probably wouldn't handle it. I honestly believe it. ”

12 In summary, At least in some cases then, participants appeared to feel incapable
13 of engaging in even light to moderate intensity forms of PA and others expressed concern
14 that at their age, such activity would be pointless. PA for most was considered potentially
15 harmful – risky; the safe option was to, “take it easy.” Although we recognize a certain
16 level of caution toward PA is prudent at any age, it appeared as though participants
17 overestimated the risks associated with even light forms of PA and underestimated their
18 physical capabilities. At the same time, these concerns could not be automatically
19 dismissed as it was likely that many participants had a limited capacity to perform such
20 activity.

21 Discussion

22

1 ~~This study~~We used semi-structured, qualitative interviews to identify factors that
2 influenced PA participation among older adults from rural settings in Nova Scotia and
3 explored how the rural context may influence PA participation and promotion.
4 By presenting quotations from rural older adult participants, our findings revealed a
5 complex representation of factors that appeared to influence rural PA participation and
6 promotion in Cape Breton. The perspectives portrayed by these quotations are often
7 underrepresented within research on PA and aging (Grant, 2010). By highlighting these
8 perspectives, this study responds to calls to expand the gerontological research agenda by
9 incorporating interpretative approaches and grounded knowledge translation (Grant,
10 2010; Grant & Kluge, 2007).

11 **Theoretical Relevance**

12 Several theoretical ideas represented in the literature inform the understanding of
13 ~~Our findings. inform the theoretical understanding of rural older adults' PA perceptions~~
14 ~~in several ways.~~ For instance, as ecological frameworks suggest (Sallis, Owen, & Fisher,
15 2008; Spence & Lee, 2003), it is important to interpret PA perceptions and behaviour
16 through a contextual lens so as to understand the individual in context (in this case, older
17 adults and the historical nature of activity). ~~An important finding is~~By adopting an
18 ecological lens, we considered the interaction between the historical context in which
19 participants were raised and continued to reside, and his or her perceptions about, and
20 preferences for, PA. that the historical context in which participants were raised and
21 continue to reside influenced perceptions about, and preferences for, physical activity. In
22 particular, This context was influential in that participants' previous PA experiences
23 were largely work- as opposed to leisure-based; PA within a leisure context was an

1 unfamiliar concept for some. Consequently, participantshe or she presently prioritized
2 work-related activities over leisure ones. For participants, “work” activities were highly
3 valued, those that were perceived as productive and useful, while relatively less value
4 was placed on “leisure” activities; were often viewed as lacking purpose. Such a This
5 finding supports other studies which report older adults’ preferences for certain activities
6 over others (xxxxx; Dye & Wilcox, 2006; Leavy & Åberg, 2010) and illuminates the
7 importance of not applying a “one-size-fits-all” approach to understanding PA behaviour
8 across populations and settings; one must understand physical activity behaviour in
9 context. As will be discussed later, this finding also has implications for PA promotion.

10 With respect to participants’ prioritization of work/work-related activities over
11 leisure activities, a consideration of Weber’s (1958) theorizing with regards to the
12 “Protestant work ethic” informs theA second way our findings interpretations of our
13 findings; relate to theoretical understanding relates to participants’ prioritization of
14 work/work-related activities over leisure activities; viewing the latter as not a good use of
15 one’s time. This prioritization is consistent with Weber’s (1958) “Protestant work ethic;”
16 particularly, the idea that participation in labour is divine and wasting one’s time
17 immoral. This phenomenon has been reported among older adults elsewhere (e.g.,
18 Bassett, Bourbonnais, & McDowell, 2007). In older adulthood, participants in this study
19 predominantly remained busy/”active” by carrying out various “work” tasks which
20 appeared to be an important part of his or her day-to-day routines toward maintaining
21 health. This finding resembles ds Ekerdt’s (1986) notion of the “Busy ethic” in which older
22 adults emphasized d keeping busy in retirement. Both the Protestant work ethic and Busy
23 ethic were reflected in the historical context of Cape Breton. Participants in this study

1 grew up during a time where demanding physical labour was the norm and priority was
2 placed upon completing tasks deemed necessary to sustain day-to-day family life
3 (Feintuch & Samson, 2010). This is consistent with the findings reported by xxxxx, based
4 upon data provided by older adults in a rural setting and supports other studies that
5 reported the importance of being/staying busy to older adults (e.g., Arcury et al., 2001;
6 Grant, 2008; Terrill & Gullifer, 2010) as well as the importance of engaging in activity
7 perceived to be productive and useful to rural adults (e.g., Eylar & Vest, 2002; Gullifer &
8 Thompson, 2006) ~~to rural adults~~. Such explanations contextualize PA barriers commonly
9 cited by older adults such as being “too busy” (Baert, Gorus, Mets, Geerts, & Bautmans,
10 2011) or not having sufficient time (Conn, Tripp-Reimer, & Maas, 2003; Costello,
11 Kafchinski, Vrazel, & Sullivan, 2011; Schutzer & Graves, 2004; Wilcox, Bopp,
12 Oberrecht, Kammermann, & McElmurray, 2003), ~~and offer support~~ theoretical work and
13 offer understanding as well as guidance with respect to PA promotion strategies.

14 **Implications for PA Promotion**

15 An important next step is to ~~apply~~ consider how ~~the our~~ findings ~~from this study~~
16 ~~to may guide the development of potential~~ PA promotion strategies. Although we
17 acknowledge additional data collection across a variety of rural contexts would broaden
18 understanding of the nature of PA among older adults, we believe ~~our the~~ interpretations
19 we present here reflect one are contextually “grounded;” reflecting perceptions and
20 experiences in a reality of factors that influence older adult PA; a reality that may have
21 relevance to other locations. Therefore, W within this section, we discuss the implications
22 of our ~~research findings~~ for PA promotion.

1 **Promotion of salient physical activities.** Participants' prioritization of work-
2 related activities and preference for activities that were productive and useful has
3 implications for the promotion of PA among rural older adults in rural settings. One
4 obvious implication is that the promotion of traditional/conventional LTPA such as
5 joining a fitness centre, or participating in various sports, will not be particularly effective
6 in increasing older adult PA participation. Activities such as these are not salient for
7 many and participation in such activities may be perceived as time not well spent.
8 Therefore, PA promotional efforts would be better focused on promoting physical
9 activities perceived as relevant and to promote activities within an instrumental or
10 "work," rather than purely a leisure, context. Physical activities need to be contextualized
11 since participants may not be motivated to participate in LTPA, "for the sake of it," as a
12 way to maintain health.

13 In light of the prioritization of "work" tasks that are perceived as productive and
14 useful, appropriate strategies to promote PA should include the promotion of specific
15 activities consistent with a "rural lifestyle" and the promotion of particular physical
16 activities as ones that would aid in the performance of various prioritized, contextually
17 relevant "work" activities. Specific activities that have a physical component and are
18 culturally relevant may include wood piling, hanging clothes on a line, snow shovelling,
19 walking to friends' houses, gardening tasks such as trenching and raking, and domestic
20 tasks such as kneading dough. Beyond promoting specific activities, it is important to
21 highlight how certain physical activities can play an important role in maintaining the
22 ability to perform valued "work" activities into advanced age. For instance, PA
23 promotional initiatives should emphasize how various endurance, strength and flexibility

1 activities can improve one's ability to perform [various valued](#) activities such as those
2 listed above.

3 **Fostering a shared understanding of “physical activity.”** Participants used the
4 term “active” in a very broad and inclusive sense to include a variety of activities outside
5 the definition of “physical activity.” Therefore, although participants viewed PA
6 engagement as beneficial, [they did not adhere to Canadian guidelines with respect to](#)
7 [engaging in endurance, strength and flexibility activities and were often not physically](#)
8 [active at levels sufficient for physical health benefits. Furthermore, participants expressed](#)
9 [concerns with respect to it being too late for PA to offer much benefit. they were often](#)
10 [not physically active at levels sufficient for physical health benefits. Importantly,](#)
11 [however, participants did not desire to sit idly by in their retirement years, content to do](#)
12 [nothing. Rather, participants believed idleness was counterproductive to healthy aging,](#)
13 [conceptualized healthy aging in terms of remaining engaged with life and sought out](#)
14 [opportunities to be/stay “active.” Such activity or “busyness” was perceived to be a](#)
15 [means to maintain physical function, as opposed to participation in PA or exercise. Grant](#)
16 [\(2008\) reported the same phenomenon among older adults \(aged 70+\) in New Zealand](#)
17 [who believed functional health was achieved through being a “busy body” \(p. 825\).](#)

18 [Canada's physical activity guidelines. By virtue of their “busy” and “active” ness,](#)
19 [As promoters of PA in the Canadian context, we adhered to the evidence-based](#)
20 [guidelines developed collaboratively by the Active Living Coalition for Older Adults and](#)
21 [Canadian Society for Exercise Physiology \(Health Canada, 1999\).¹ Discussing these](#)
22 [guidelines \(and the accompanying handbook\) with participants revealed a paradox. That](#)
23 [is, despite the perception that he or she was sufficiently physically active to maintain](#)

1 good health, no participants were previously aware of Canada's PA guidelines for older
2 adults, nor did they demonstrate an informed understanding of the definition of PA.
3 ~~participants perceived themselves to be sufficiently physically active to maintain good~~
4 ~~health. Paradoxically, when shown the Canadian PA guidelines for older adults, no~~
5 ~~participants were previously aware of these guidelines, nor did they demonstrate an~~
6 ~~informed understanding of the definition of PA.~~ This corroborates the findings of others.

7 For example, Evans (2011) and xxxxx also reported older adults' unfamiliarity of
8 Canadian PA guidelines for older adults. With respect to perceptions of PA, many older
9 adults believe they are sufficiently active (Crombie, Irvine, Williams, McGinnis, Slane,
10 Alder, & McMurdo, 2004). This runs contrary to national-level data which suggests the
11 majority of older adult Canadians are insufficiently active (Colley et al., 2011; Statistics
12 Canada, 2011) but is consistent with concerns regarding frequent overestimates of self-
13 reported activity among individuals (Dishman, Heath, & Lee, 2013).

14 - Findings such as these illuminate the importance of educating older adults
15 regarding the activities that constitute "physical activity" and the health benefits
16 associated with regular participation in PA. Furthermore, promoting awareness of current
17 Canadian PA guidelines for older adults (Tremblay et al., 2011) should be considered
18 fundamental to promoting PA among rural older adults. However, PA promotion needs to
19 be sensitive with respect to the value placed upon an active engagement with life, as this
20 is important in its own right and not to be discounted.

21 Our findings also invited a critical assessment of the information presented within
22 the guide's accompanying handbook (Health Canada, 1999). Although we believe the
23 handbook was an important accompaniment, as it targeted older adults specifically,

1 contextually relevant/salient physical activities for rural older adults (such as those
2 previously described), were conspicuously absent. Furthermore, Canada’s current PA and
3 sedentary behaviour guidelines handbook (Canadian Society for Exercise Physiology,
4 2015) addresses all age groups more generally (as opposed to offering an older adult-
5 specific handbook). Consequently, compared to the original handbook, information
6 specifically pertaining to older adults has been drastically reduced. As was the case in the
7 previous handbook, contextually relevant information for rural older adults (and for all
8 rural Canadians for that matter) remains absent in the current handbook.

9 Since our findings suggest there is a disconnect between traditional/conventional
10 portrayals of PA, (as represented in the handbook by structured exercise classes and the
11 use of fitness equipment), and its salience for rural older adults, we believe it is important
12 for materials which accompany the PA guidelines to be inclusive of rural older adults’
13 preferences; for example, work-related, productive physical activities. In summary, we
14 believe it is important to increase awareness of current PA guidelines among rural older
15 adults but also to improve the relevance of the supplemental information currently
16 available.

17 ~~participants did not desire to sit idly by in their retirement years, content to do~~
18 ~~nothing. Rather, participants believed idleness was counterproductive to healthy aging,~~
19 ~~conceptualized healthy aging in terms of remaining engaged with life and sought out~~
20 ~~opportunities to be/stay “active.” Such activity or “busyness” was perceived to be a~~
21 ~~means to maintain physical function, as opposed to participation in PA or exercise. Grant~~
22 ~~(2008) reported the same phenomenon among older adults (aged 70+) in New Zealand~~
23 ~~who believed functional health was achieved through being a “busy body” (p. 825).~~

~~Findings such as these illuminate the importance of educating older adults regarding the activities that constitute “physical activity” and the health benefits associated with regular participation in PA. Furthermore, promoting awareness of current Canadian guidelines for older adults (Tremblay et al., 2011) should be considered fundamental to promoting PA among rural older adults. However, PA promotion needs to be sensitive with respect to the value placed upon an active engagement with life, as this is important in its own right and not to be discounted.~~

Facilitating sustained behaviour change. Although efforts to educate older adults [and promote awareness of PA guidelines](#) are essential, they will likely not be sufficient to bring about long-term behaviour change (Brawley, Rejeski, & King, 2003; King, 2001). Indeed, data from this study illuminated the complexity of this issue. For example, in addition to considering the type and salience of PA, as well as its conceptualization, one must consider participants’ beliefs regarding aging and PA. Our findings indicated that although participants perceived themselves as “active,” they approached any PA in an [overly](#) cautious manner. For example, there were a limited set of [mostly light-intensity](#) activities that participants perceived as realistic and appropriate for someone their age; participants also questioned the health benefits associated with PA at their age. Consequently, participants placed priority on activities perceived to be relatively low risk; those perceived unlikely to cause harm or exacerbate current health conditions. Participants were particularly concerned about over-exertion.

Several studies (e.g., xxxxx; Booth et al., 2002; Grant, 2008; Leavy & Åberg, 2010; Wilcox, Oberrecht, Bopp, Kammermann, & McElmurray, 2005) revealed older participants’ scepticism regarding the health benefits of PA at their age as well as

1 concerns regarding overexertion and being “too old” for PA (xxxxxx; Booth et al., 2002;
2 Wilcox et al., 2005). Participants’ concerns regarding physical overexertion and current
3 medical conditions that would be exacerbated with additional PA, as well as doubts
4 regarding their physical capabilities to participate in PA, were also reported by
5 McGannon, Busanich, Witcher and Schinke (2014) and O’Brien Cousins (2000). In
6 O’Brien Cousins’ (2000) study, women aged 70+ identified various health risks of PA
7 and cited concerns regarding aggravating current medical conditions with PA. Similarly,
8 in a study conducted by Evans (2011), some female participants were concerned that too
9 much exercise could damage their heart.

10 In light of participants’ views and concerns, efforts must be taken to enable older
11 adults to consider alternative conceptualizations of aging with respect to PA participation.
12 This is not to suggest older adults’ physical limitations should be trivialized . However,
13 our findings suggested participants underestimate their physical capabilities and may not
14 recognize regular physical activity offers health benefits at any age. Since participants
15 Among participants in this study considered, maintaining physical independence to
16 bewas paramount, ~~and~~ PA promotion initiatives that highlight PA’s role in maintaining
17 physical function should hold potential to ~~bring about alternative conceptualizations~~
18 ~~of~~ change older adult’s perceptions regarding PA participation in older adulthood. By
19 adopting such an approach~~In this manner~~, older adults may be more willing to consider
20 alternative conceptualizations of what it means to be “active” and adopt a wider variety
21 of physical activities considered appropriate.

22 **Strengths and Limitations**

23 **Strengths**

1 This study had a number of strengths. For example, themes were constructed from
2 information-rich, thickly described data provided by older adult participants across
3 several rural counties. An equal number of older adult men and women were represented,
4 across a wide age range. Another strength was this study's emphasis on the applicability
5 of themes and concepts to ~~local~~ PA promotion strategies at both community, regional and
6 national policy levels. ~~Perhaps most importantly, this study presented quotations from~~
7 ~~rural older adults and interprets them with a focus on adoption at both community and~~
8 ~~regional policy levels. In this way~~ By obtaining thickly described data and emphasizing
9 their applicability to PA promotion, this study responds to calls to expand the PA and
10 aging research agenda by incorporating interpretative approaches and grounded
11 knowledge translation (Grant, 2010; Grant & Kluge, 2007).

12 **Limitations**

13 Despite the strengths identified, it is important to acknowledge several limitations.
14 For example, as previously mentioned, data collection took place across a wide, relatively
15 large geographical area across many communities. Consequently, the iterative process of
16 data collection and analysis was, at times, limited; at times this also limited the ability to
17 theoretically sample (Corbin & Strauss, 2007). Researcher flexibility was important, in
18 this case, to maintain a balance between the iterative process of data collection and
19 analysis, theoretical sampling and completing interviews within a limited time frame.
20 Furthermore, we acknowledge that although we believe saturation was achieved, it is
21 possible that continuing our research indefinitely may have contributed to our
22 understanding of one or more themes.

1 Another limitation related to group interview participant recruitment. An older
2 adult group interview was held but low participation (N = 2) limited their usefulness. An
3 additional limitation related to participants' perceptions regarding their PA engagement.
4 Although obtaining objective measures of PA was not the focus of the study and beyond
5 its scope, we acknowledge the importance of such data to compliment data such as those
6 obtained in our study.

7 A final limitation concerned the interpretations from this study. They must be
8 approached with due caution since the data provided may not represent the perceptions of
9 the hard to reach (and likely sedentary) particularly well; whose insight may be
10 particularly valuable. Although PA participation among participants was limited, it
11 appeared participant recruitment may have resulted in a large proportion of older adult
12 participants judged by key informants to be "active." Furthermore, given the purpose of
13 this study and its methodology, we acknowledge that although we believe our findings
14 make a unique contribution to the field, readers are cautioned against generalizing across
15 all rural contexts, as it is yet unclear to what extent our findings may be regional-specific.
16 This is, of course, an important question but beyond the scope of the present study.

17 **Future Directions**

18 As alluded to in the previous section, many questions remain unanswered at the
19 conclusion of this study. As stated, an important one is, "To what extent are the
20 interpretations applicable to older adults in other rural contexts?" The answer is currently
21 unclear and future research should investigate the relevance of themes and concepts we
22 have presented to older adults in other rural contexts. Furthermore, it would be prudent to
23 examine the relevance of these themes and concepts among urban older adults. To what

1 extent are the findings and suggestions for PA promotion rural context-specific? Another
2 important question relates to the concordance between participants' reported and actual
3 PA – What are the objectively measured rates of PA among rural older adults in Cape
4 Breton? Finally, with respect to the current body of work, research should progress
5 toward developing an integrative and comprehensive theoretical framework to guide
6 future rural PA promotion. This study makes a particular contribution to broadening our
7 understanding of PA participation and promotion among older adults in rural regions
8 such as Cape Breton.

9 **Conclusion**

10 This study identified factors that influenced PA participation among rural older
11 adults in Nova Scotia, and explored how the rural historical context may influence PA
12 participation and promotion. The historical context in which participants were raised was
13 influential in that participants prioritized work-related activity over leisure. Therefore, it
14 is important to consider what physical activities may be salient for rural older adults
15 when planning PA initiatives or interventions. For example, it appears prudent to shift the
16 focus away from the promotion of conventional (i.e., leisure-time) PA promotion among
17 rural older adults. Furthermore, with respect to PA promotion, it is also important to
18 consider the way in which rural older adults conceptualize “activity” and “physical
19 activity” and his or her expectations with respect to PA and aging; that is, does one
20 perceive PA as inappropriate due to age? It is likely that these findings and strategies are
21 relevant to other rural settings but to what extent, and to which particular regions, is
22 currently unclear. Therefore, future studies should investigate how the factors identified

- 1 and proposed strategies in this study may inform the development of local PA promotion
- 2 initiatives within other rural contexts.
- 3

1 Notes

2 ¹ This study used old guidelines (Health Canada, 1999) because it was conducted prior to
3 the release of the 2011 guidelines (Tremblay et al., 2011).

4 ² Interview transcripts were not strictly “verbatim,” but “relatively verbatim” accounts, as
5 elements such as nonverbal communication were not captured (Poland, 1995, p. 307).

6 Consistent with Poland (1995), quotations were edited to remove “ums”, “uhs”, etc. The
7 authors share the view of MacLean, Meyer and Estable (2004) that these conversation
8 fillers can detract from content and portray participants as inarticulate.

9

10

11

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