Factors Associated with the Extent of Recreation and Social Participation at Older Adult Centres in Ontario

By

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Introduction: Social participation is considered essential for successful aging and has been shown to reduce social isolation and loneliness and improve health and well-being. Older adult centres (OACs) provide recreation and social activities tailored to seniors, as well as opportunities to volunteer and socialize. Although widely available, the extent to which older adults use OACs, relative to other community organizations, to meet these needs is unknown.

Purpose: The present study examined factors associated with recreation and social participation at OACs in Ontario. By examining users and non-users, patterns of centre use, transportation, and trips outside the home, this study aimed to better understand the extent to which OACs represent the primary venue for recreation and social activities among participating seniors.

Methods: This study employed secondary analysis of two datasets from the Older Adults' Centre Association of Ontario. The Building Bridges to Tomorrow Project (BBTP) consisted of 2,239 users and 540 non-users from 24 OACs. Through guided interviews, users answered questions on attendance, participation and satisfaction with recreation programs, as well as background and health information. Non-users answered the same background questions, as well as ones on recreation needs, and perceptions of and interest in OACs. The Multi-Centre Guided Evaluation Project (MC-GEP) involved 295 centre users from 12 OACs who completed a two-week travel diary documenting all out-of-home travel. Participants also completed questionnaires and scales to assess balance confidence, life-space mobility, loneliness, and social support.

BBTP Results: OAC users were older, less educated, fully retired, and rated their overall health and level of physical activity higher. People who volunteered in the community were less likely to be OAC users. Among centre users, those living alone and in more urban locations were more likely to attend the centre daily, while those using other recreation facilities were less likely to do

so. More intense participation was found for women, those who lived alone, those with less education, low-income seniors and those living in urban areas close to the centre. Among non-users, OACs were frequently described as central meeting places in the community that promote social participation; however, ageist stereotypes also emerged with respect to who attends these facilities and the types of activities that are available.

MC-GEP Results: Two-thirds of the sample reported the centre was their primary place for recreation, leisure and social activities. Having post-secondary education, being a current driver, and attending other community centres significantly reduced the odds of reporting the centre as a primary place, while loneliness increased the odds of doing so. The diaries showed that 27% of trips away from home included a stop at the centre; post-secondary education and participation at other community centres significantly reduced the extent to which the centre was a focal point, while loneliness increased it.

Conclusions: Ageist attitudes were prevalent among non-users and centres should consider innovative and cost-effective ways they can combat these images through through community partnerships and updated marketing and promotional efforts. The current study suggested that nearly a quater of centre users experienced high levels of loneliness; however, more research is needed to explore how the centre environment and ongoing participation impacts loneliness. Additionally, three-quarters of centre users attended other community-based facilities, often to access programs or facilities not available at their centre. Despite this, the local OAC was still their primary place for recreation and social activities, especially for those without post-secondary education, those who experienced loneliness, and those at greater risk for social isolation (e.g., living in rural areas, non-drivers). Further research using standardized measures is needed to empirically demonstrate benefits of OAC participation.

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To my family, thank you for always supporting my dreams, and for teaching me the importance of hard work. Devin, thank you for your companionship, love, and support. This journey would not have been possible without you.

Dedication

This thesis is dedicated to my grandma, Elsie McDougall, who introduced me to my first older adult centre.

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Chapter 1: Introduction

Nearly six decades ago, Activity Theory postulated that high participation in social activities helps to promote and maintain well-being in older adulthood (Baltes & Carstensen, 1996; Havinghurst, 1961). Maintaining close relationships and participating in social activities are still widely regarded as essential components of successful aging (McLaughlin, Connell, Heeringa, Li, & Roberts, 2010; Rowe & Kahn, 1997), and have been shown to improve quality of life (Levasseur, Desrosiers, & Noreau, 2004) and reduce morbidity and mortality among older adults (e.g., Pynnonen, Tormakangas, Heikkinen, Rantanen, & Lyyra, 2012).

Despite the importance of social participation for older adults, there is no agreed upon definition of this construct in the gerontological literature (Levasseur, Richard, Gauvin, & Raymond, 2010). Other terms that have been used interchangeably with social participation include social engagement, social connectedness, social integration, and community involvement or engagement. As noted by Levasseur and colleagues (2010), lack of conceptual consensus as well as method variance makes it difficult to compare across studies.

The present study is primarily interested in social participation that involves interactions with other people in the community, in particular at older adult centres. Specifically, this study examined the factors associated with more frequent recreation and social participation at OACs in Ontario. To set the stage for this study, this chapter begins with a review of the importance of social participation in combatting social isolation and loneliness among older adults. The next section reviews what is known about the types of recreation and social activities that are most common among older adults. This is followed by an overview of the added benefits of engaging in activities outside the home, which in turn is dependent on one's mobility and transportation options.

1.1 Social Isolation and Loneliness

Reduced participation in social activities has been linked to social isolation (Nicholson, 2012) and loneliness (Queen, Stawski, Ryan, & Smith, 2014) in older adults. Social isolation occurs when there is a lack of social relationships and/or a low level of engagement in social activities (Courtin & Knapp, 2017; Newall & Menec, 2019; Scharf & de Jong Gierveld, 2008; Wenger & Burholt, 2004). Loneliness, on the other hand, is a subjective phenomenon that reflects an overall dissatisfaction with the level and perceived quality of social engagement (Courtin & Knapp, 2017; De Jong Gierveld, 1987; Newall & Menec, 2019; Victor, Scambler, Bowling, & Bond, 2005). Instruments measuring these constructs focus on the structure (i.e., who people have relationships with) and function (i.e., characteristics of interactions between people) of social relationships, as well as subjective perceptions, including perceived availability, or adequacy/satisfaction (Valtorta, Kanaan, Gilbody, & Hanratty, 2016). Newall and Menec (2019) argued that social isolation and loneliness need to be examined in tandem, as a person may be socially isolated but not lonely (or vice versa) depending whether a discrepancy exists between the number and quality of social relationships they have versus what they want.

The 2008/2009 Canadian Community Health Survey estimated that a quarter of Canadian seniors felt isolated from others and wished they could participate in more social activities (Gilmour, 2012). This study also found that as the number of reported activities increased, the likelihood of reporting loneliness decreased (Gilmour, 2012). Data from the Canadian Longitudinal Study on Aging (CLSA), meanwhile, found that 5.1% of seniors were socially isolated, and that 10.2% experienced loneliness; while both social isolation and loneliness were linked closely to personal characteristics (such as lower income and more chronic conditions), those who were socially isolated were more frequently clustered in neighbourhoods with a high

proportion of low-income seniors (Menec, Newall, Mackenzie, Shooshtari, & Nowicki, 2019). Another study of Manitoban seniors found that around a quarter were lonely, and that loneliness correlated with older age, female sex, lower education, living alone, poor self-rated health and more chronic conditions (Newall, McArthur, & Menec, 2015). Differences in prevalence rates across studies is likely due to variations in measurement. For instance, the CLSA measured loneliness using a single item from a depression scale, while the Canadian Community Health Survey used the three-item UCLA loneliness scale (Gilmour, 2012).

Several studies have found associations between social isolation and/or loneliness and higher risk of: depression (e.g., Fiori, Antonucci, & Cortina, 2006), cognitive decline (e.g., Barnes, Mendes de Leon, Wilson, Bienias, & Evans, 2004), disability (e.g., Escobar-Bravo, Puga-Gonzalez, & Martin-Baranera, 2012; Perissinotto, Stijacic Cenzer, & Covinsky, 2012), mortality (e.g., Perissinotto et al., 2012; Steptoe, Shankar, Demakakos, & Wardle, 2013) and increased health care utilization (Newall et al., 2015). In fact, social isolation may be worse for health than smoking, obesity, or physical inactivity (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Holt-Lunstad, Smith, & Layton, 2010). In their meta-analysis of 70 prospective cohort studies over the past 30 years, Holt-Lunstad and colleagues (2015) concluded that mortality increased by 26% for those experiencing loneliness and by 29% for those reporting social isolation after adjusting for age, health, and level of physical activity. Participation in recreation and social activities may be key to combatting social isolation and loneliness in older adults and for enhancing overall health and well-being.

1.2 Recreation and Social Activities of Older Adults

There are several ways that older adults can be socially active. For instance, social participation may occur informally through visits with friends or family and other enjoyable

outings, as well as formally through structured or scheduled group activities at community locations (Pristavec, 2016). Based on their analysis of the aging literature, Levasseur et al. (2010) proposed a taxonomy of social activities built on varying degrees of interaction with others, as follows: (1) daily activities (e.g., eating) that are done at home in preparation of going out and engaging with others; (2) activities done alone but with others around (e.g., walking in the neighbourhood); (3) interacting with others but without doing a specific activity together (e.g., socializing with friends or family); (4) activities with others (usually recreation activities that are structured, and purposeful in nature); (5) helping others (i.e., volunteering); and (6) contributing to society (e.g., civic duties). This section examines the recreation and social participation patterns among older adults, including frequent and infrequent activities and changes in participation over time, as well as predictors and benefits of participation. This section concludes with a discussion on barriers to social participation.

1.2.1 Participation Patterns

The Aging in Manitoba study showed that the most common "everyday activities" reported (in the past week) among older adults were light housework or gardening (95%), telephone conversations with friends or relatives (93%), reading or writing (90%), and visiting friends (84%) or family (83%). Formal activities, such as recreation groups (18%), mass activities like bingo or clubs (16%), and service groups (12%) were less common (Menec, 2003). Another study of Manitoban seniors similarly found that while most had a recreation (94.4%) or exercise facility (79.2%) in their neighbourhood, half to two-thirds reportedly never used these facilities (Menec, Brown, Newall, & Nowicki, 2016).

In a sample of 520 seniors from Quebec, almost everyone reported visiting family and friends, shopping, and eating at restaurants at least once per month; however, formal activities

with others were less frequent (Richard et al., 2013). For instance, around 11% participated in discussion groups, 15% took courses, one quarter volunteered, and one third attended activities at a community centre (Richard et al., 2013).

Other data from the 2008/2009 Canadian Community Health Survey (Gilmour, 2012) showed that 20% of seniors did not frequently participate in any social activities; 23% frequently participated in in only one, 19% in two, and 14% in three; only 6% participated in six or more. Frequent participation in activities with friends and family were most often reported among older men (54%) and women (51%), followed by church (37% of men and 31% of women), sports (25% of men and 27% of women), volunteer work (25% of men and 24% of women), and education (25% of men and 23% of women); other activities like participating in clubs and associations (e.g., community associations) were less frequent (18% of both men and women).

Two longitudinal studies suggest that declines in participation over time are not universal and may be activity dependent. For instance, a 10-year longitudinal study in Sweden showed that participation in culture/entertainment (i.e., movies, eating out), outdoor-physical (e.g., gardening, walking), and formal group activities generally declined; however, doing things with friends, and recreation activities (i.e., dancing, bingo, music) were maintained (Silverstein & Parker, 2002). Moreover, not all seniors reported declines in activities: for recreation activities, 10% reported more frequent participation and 77% reported no change; with respect to formal groups/clubs, 19% participated more frequently and 45% reported no change. Across the sample, only 45% exhibited a net loss in activity participation; 36% showed a net increase, and 19% reported no change in overall activity participation rates.

A study of 380 Canadian seniors (Strain, Grabusic, Searle, & Dunn, 2002) similarly found that the most popular activities at baseline (i.e., reading, watching television, shopping) remained

popular after eight years; however, other activities (i.e., eating out, walking, travel, church, playing cards and movies/sports) showed a decline of at least 20%. Being younger, having more education, rating one's health as good or excellent, and no ADL/IADL impairments at baseline were associated with a greater likelihood of continuing activities (Strain et al., 2002).

1.2.2 Predictors of Participation

The literature has often reported that older women participate in more social activities than older men (e.g., Agahi, Lennartsson, Kareholt, & Shaw, 2013; Buchman et al., 2009; Janke, Davey, & Kleiber, 2006; Lee, Jang, Lee, Cho, & Park, 2008; Menec, 2003; Pristavec, 2016) and several other demographic characteristics have been shown to impact social participation in old age. For instance, several studies have reported that younger age, higher education and better socioeconomic status (SES) predicted greater participation in both formal (e.g., clubs, culture events, church, and group recreation) and informal (e.g., visits with friends, restaurants) social activities (Buchman et al., 2009; Halenkamp et al., 2016; Janke et al., 2006; Pristavec, 2016) Younger age and having more education were also found to increase the likelihood of continuation in activities over eight years, while loss of a marital partner showed a negative association (Strain et al., 2002).

Halenkamp and colleagues (2016) also found that those with two or more chronic conditions were less likely to eat out, attend public and cultural events, take part in a club, participate in organized activities, and go on day trips. These authors also showed that low depression, low anxiety, and high mastery predicted more frequent participation for those with and without multi-morbidities. Mendes de Leon (2003) similarly found that those with fewer chronic conditions, and better cognitive and physical functioning had higher levels of participation in 11 different social and productive activities. Meanwhile, in Strain's analysis of

activity participation in Canadian seniors, those who rated their health as the same or better after eight years, as well as those who had the same or fewer ADL/IADL impairments, were more likely to have continued doing certain activities, including walking, travelling, going to movie theatres and spectator sports, and shopping (Strain et al., 2002).

1.2.3 Benefits of Participation

The positive effects of participating in recreation and social activities for health and well-being have been well documented for older adults, and findings suggest that participation promotes longevity (Glass, Mendes de Leon, Marottoli, & Berkman, 1999). As presented below, recreation and social participation have been positively linked to functional abilities including cognition, self-rated health, and various aspects of psychosocial well-being including quality of life and depression.

Buchman et al. (2009) examined frequency of participation in six social activities (i.e., restaurants, sporting events or bingo, day-trips, visiting friends, participating at a senior centre, and attending church) and found that lower rates of participation were associated with more rapid declines in motor function. Another study showed that for each additional social activity engaged in, the risk of developing ADL impairments, IADL impairments, and mobility disabilities (i.e., difficulties walking up/down stairs, walking a half mile and/or doing heavy housework) are reduced by 43%, 31%, and 29% respectively (James, Boyle, Buchman, & Bennett, 2011). Mendes de Leon (2003) obtained similar findings showing that seniors who were more active in social or productive activities (including: movies, sporting events, shopping, games, gardening, cooking, travel, groups, volunteering, paid word, and church) reported less disability.

Self-rated health has also been associated with recreation and social participation. For instance, a study of seniors in two Canadian French-speaking communities found that self-rated

health was higher for older adults who had a high level of social participation at church, social clubs, and shopping malls, as well as a strong network of friends and family (Zunzunegui et al., 2004). Similarly, Sirven and Debrand (2008) found that taking part in any five social activities (volunteer work, training courses, sports/social clubs, religious services, and civic activities) was associated with higher self-rated health in a sample of 26,788 individuals aged 50+ from 11 European countries; sport and social clubs had the greatest impact on self-rated health, while religious activities had the lowest impact. In another study of 8,586 South Korean seniors, older women and men who participated in at least one type of social activity were more likely to report good health (Lee et al., 2008). In this study, recreation and social activities included: meetings (e.g., social clubs, sports, interest groups, etc.), religious participation, and volunteering.

Participation in recreation and social activities has been found to promote better cognitive functioning. For instance, in a Swedish study of older adults aged 75+, frequent engagement (i.e., daily to weekly) in mental (e.g., painting, drawing, writing, reading), social (e.g., movies, art, travel, games, social groups), or productive (e.g., gardening, volunteering) activities reduced the odds of developing dementia over 6.5 years (Wang, Karp, Winblad, & Fratiglioni, 2002). In another study following older adults for up to 12 years, greater participation in social activities (i.e., restaurants, sporting events, games, day-trips, volunteering, visiting with friends, and participating in groups like senior centres) was associated with less cognitive decline, and the rate of decline was 70% lower in people who were frequently socially active compared to those who were infrequently active (James, Wilson, Barnes, & Bennett, 2011).

Previous research has also demonstrated that participating in social activities can improve well-being (Paggi, Jopp, & Hertzog, 2016). For instance, findings from the Aging in Manitoba study showed that activity participation positively predicted life-satisfaction (Menec, 2003;

Menec & Chipperfield, 1997). Meanwhile, Silverstein and Parker (2002) found that those who engaged in recreation-expressive activities evaluated their life more positively 10 years later.

Isaac, Stewart, Artero, Ancelin, and Ritchie (2009) found that compared to older adults with low levels of social activity, those with moderate to high participant were less likely to report depressive symptoms; these authors also found among depressed older adults, those with high levels of social participation were 2.5 times more likely to experience improvements in their symptoms over a two year period. Glass, De Leon, Bassuk, and Berkman (2006) similarly found that higher social participation (measured through engagement in 11 productive, social, and recreation activities) was associated with lower depression, and that greater participation slowed increases in depressive symptoms among those who had no depression at baseline.

1.2.4 Barriers to Participation

Older adults may face barriers to participating in recreation and social activities. For instance, in a survey of Canadian seniors (Gilmour, 2012), nearly one in four (24%) reported that they would have liked to have participated in more social, recreation, or group activities in the past year; this was especially true for younger seniors (aged 65-74) and women. The main reasons cited by women and men, respectively, for limited participation were health problems (35% and 33%), followed by being too busy (16% and 28%), family obligations (10% for both), not wanting to go alone (16% and 9%), and transportation (11% and 4%). Other factors, including cost and accessibility of activities (e.g., location, scheduling) were reported by less than 10% of men and women. Goll and colleagues (2015), meanwhile, conducted interviews with 29 seniors in order to examine barriers to social participation. In addition to illness and disability, these seniors reported a lack of acceptable social opportunities, loss of contact with friends and family, as well as fears of social rejection and being viewed as too old.

As noted above, access to acceptable activities impacts the extent to which older adults are able to participate in social activities; furthermore, as discussed in the subsequent section, restricted life-space mobility and challenges related to transportation have been associated with reduced engagement in recreation and social activities.

1.3 Importance of Mobility

Mobility, which refers to the ability to move freely through one's environment (Baker, Bodner, & Allman, 2003; May, Nayak, & Isaacs, 1985; Stalvey, Owsley, Sloane, & Ball, 1999; Webber, Porter, & Menec, 2010), is essential for continued social participation in activities beyond one's home. Mobility enables contact with people and places in the broader community, and promotes physical and psychological benefits associated with 'being out and about' (Metz, 2000). Not surprisingly, higher levels of mobility have been consistently associated with greater participation in social activities (e.g., Barnes et al., 2007; de Guzman, Lagdaan, & Lagoy, 2014; Rosso, Taylor, Tabb, & Michael, 2013).

It is increasingly recognized that movement throughout one's environment (i.e., life-space) is the result of a complex interplay of physical, cognitive, psychological, and environmental factors (e.g., Myers, Cyarto, & Blanchard, 2005; Patla & Shumway-Cook, 1999; Webber et al., 2010). The framework by Webber and colleagues (2010), shown in **Appendix A,** illustrates that as a person moves further from their home (i.e., as the environment becomes more complex), demands on physical, cognitive, psychological, environmental and financial resources increase. Biographical factors (gender, culture and life experiences) also influence these five mobility determinants, which in turn are interrelated. For example, finances can influence transportation availability (e.g., owning a personal vehicle), as well as access to community facilities. These

determinants of mobility, as well as the implications for social participation, are addressed below in the summary of the research on life-space mobility and transportation, respectively.

1.3.1 Life-Space Mobility

Life-space mobility refers to a person's purposeful movements throughout their environment, both inside and outside of the home, irrespective of the mode of travel (Baker et al., 2003; May et al., 1985; Stalvey et al., 1999). Life-space is conceptualized as a series of concentric zones expanding from inside the home to areas immediately outside (e.g., porch, yard, garage), to the neighbourhood, town, and regions beyond (e.g., the province, the country).

Older age, female sex and less education (biographical factors) have been consistently associated with a constricted life-space (e.g., Al Snih et al., 2012; Allman, Baker, Maisiak, Sims, & Roseman, 2004; Baker et al., 2003; Barnes et al., 2007; James, Boyle, Buchman, Barnes, & Bennett, 2011; Peel et al., 2005; Polku et al., 2015; Rantakokko, Iwarsson, Portegijs, Viljanen, & Rantanen, 2015; Sartori et al., 2012; Stalvey et al., 1999). Research has also suggested that unmarried seniors and those living alone have restricted life-space (e.g, Curriero et al., 2013; Phillips, Dal Grande, Ritchie, Abernethy, & Currow, 2015), although this finding is not consistent (e.g., Al Snih et al., 2012; Allman, Sawyer, & Roseman, 2006; Byles, Leigh, Vo, Forder, & Curryer, 2015).

Higher incomes have been associated with increased life-space (e.g., Peel et al., 2005; Phillips et al., 2015; Polku et al., 2015; Rosso et al., 2013; Sawyer & Allman, 2010; Xue, Fried, Glass, Laffan, & Chaves, 2008). Similarly, those who perceived their incomes to be insufficient were more likely to report a constricted life-space (Curcio et al., 2013; Rantakokko et al., 2015).

Poor physical health, poor self-rated health, the presence of comorbidities, ADL/IADL impairments, and depression have consistently predicted a smaller life-space (e.g., Al Snih et al.,

2012; Baker et al., 2003; Curcio et al., 2013; Phillips et al., 2015; Polku et al., 2015; Portegijs, Iwarsson, Rantakokko, Viljanen, & Rantanen, 2014; Shah et al., 2012; Xue et al., 2008). Poor cognitive function has also been associated with a smaller life-space (Allman et al., 2004; Barnes et al., 2007; Peel et al., 2005; Polku et al., 2015; Rantakokko et al., 2015; Sartori et al., 2012; Sawyer & Allman, 2010; Stalvey et al., 1999; Xue et al., 2008), and life-space was found to predict future cognitive decline (Crowe et al., 2008).

Research shows that seniors who are socially isolated were more likely to be constricted to the home or neighbourhood zones (Barnes et al., 2007; Shah et al., 2012; Shimada et al., 2010). Furthermore, those with restricted life-space tended to participate more frequently in home-based social activities like talking to friends on the telephone or using the Internet (Rosso et al., 2013). Conversely, participating in more formal social activities was found to be associated with reduced odds of having a restricted life-space (Barnes et al., 2007; de Guzman et al., 2014).

1.3.2 Transportation

Social participation outside the home is dependent on safe and affordable transportation. For instance, older adults with difficulties getting to where they wanted to go had more restricted life-space (Allman et al., 2004; Allman et al., 2006; Peel et al., 2005; Sawyer & Allman, 2010). Transportation problems have also been identified as the primary reason for reduced social participation by 11% of female and 4% of male Canadian seniors (Gilmour, 2012).

Among older Canadians, driving oneself is by far the preferred mode of transportation, particularly for men, followed by being a passenger in a private vehicle (Turcotte, 2012). Driving oneself has been associated with greater life-space mobility (O'Connor, Edwards, Wadley, & Crowe, 2010; Shah et al., 2012; Stalvey et al., 1999), while those who were primarily passengers or public transit users tended to have a smaller life-space (Viljanen, Mikkola, Rantakokko,

Portegijs, & Rantanen, 2015). Furthermore, having a valid driver's license and access to a vehicle has been positively linked to the likelihood of Canadian seniors leaving their home to participate in social or productive activities such as volunteering (Turcotte, 2006, 2012).

Research has found that even when recreation facilities, libraries, and exercise facilities are located within their neighbourhood, most seniors who attend get there by driving or receiving rides versus walking (Menec et al., 2016). Data from the Canadian Community Health Study also showed that a greater proportion of drivers (73%) participated in social activities in the past week compared to: those with and without a license who were primarily passengers (69% and 53% respectively); walkers (66%); and public transit users (61%; Turcotte, 2012). Other research has shown that participation in social activities was greater for those who drove a car (compared to those who did not) and for those who used public transit (compared to those who did not; Halenkamp et al., 2016). Research on Quebec seniors similarly found that those who depended on others for rides had more limited social participation compared to those who used more independent and spontaneous forms of transportation such as driving, walking, and public transit (Dahan-Oliel, Mazer, Gelinas, Dobbs, & Lefebvre, 2010).

Self-imposed driving restrictions by older adults, often mediated by reduced confidence, is considered a precursor to driving cessation (e.g., Blanchard & Myers, 2010; Rudman, Friedland, Chipman, & Sciortino, 2006). When transitioning to non-driving, many older adults restrict their driving by driving less frequently, shorter distances from home, going to fewer destinations, and avoiding unfamiliar roads, highways, and times of the day, including rush hour and nighttime (Baldock, Mathias, McLean, & Berndt, 2006). These self-regulatory driving practices may in turn reduce or limit access to community venues and recreation or social activities. For instance,

in a study following drivers over two years, those who had reduced their driving frequency had lower participation in both formal and informal social activities (Pristavec, 2016).

Ceasing driving altogether has, in turn, been associated with reduced out-of-home mobility and social engagement (see Chihuri et al., 2016 for review). For instance, compared to those who had ceased driving, frequent drivers (i.e., drove 5+ times per week) were more likely to engage in formal and informal social activities (Pristavec, 2016). Marottoli and colleagues (2000), meanwhile, found in their eight year study that activity participation generally declined with age but reductions in out-of-home activity were three times greater for seniors who had ceased driving. Other studies show that driving cessation was associated with declines in productive activities such as paid work or volunteering (Curl, Stowe, Cooney, & Proulx, 2014), and that former drivers spent more time doing solitary activities at home (Liddle, Gustafsson, Bartlett, & McKenna, 2012) or abandoned social participation altogether (Al-Hassani & Alotaibi, 2014).

Pristavec (2016) examined the role of "ride receipt" in social participation and found that regardless of driving status, those who were always driven by others had higher levels of social participation in both formal and informal activities compared to those who never received rides. Interestingly, gaining ride receipts (i.e., reporting more rides after two years) was not related to increased social participation. This could be because many older adults are hesitant to ask for rides from friends and family (Davey, 2006), especially for non-essential activities like social outings (Ahern & Hine, 2012); thus, the older adults in this study may be primarily receiving rides to meet basic needs (Pristavec, 2016).

1.4 Summary and Overview

Broadly defined, social participation reflects engagement in activities that involve other people (Levasseur et al., 2010), and is considered an essential component of successful aging

(McLaughlin et al., 2010; Rowe & Kahn, 1997). Participation in social activities tends to decrease with age (e.g., Lee et al., 2008; Pristavec, 2016); however, research has consistently demonstrated that ongoing participation is important for promoting physical, mental, and cognitive well-being among older adults.

This study focused specifically on social participation at older adult centres (OACs), which are community venues that provide tailored recreation and health activities, opportunities to socialize with staff and peers, as well as volunteer roles. In fact, OACs feature prominently in the most recent provincial action plan as a key strategy for promoting meaningful social participation and combatting social isolation in community-dwelling seniors (Government of Ontario, 2017). Thus far, however, there has been little empirical research which has examined the extent to which seniors in Ontario attend OACs for recreation and social reasons, rather than go to other community-based facilities that offer similar programs and opportunities.

The primary aim of the present study was to examine factors associated with recreation and social participation at OACs in Ontario. Additionally, this study explored the extent to which OACs were a primary venue for such activities by examining characteristics of users versus non-users, patterns of centre use, and out-of-home travel and community participation. **Chapter Two** reviews the published research on senior centres. **Chapter Three** provides background on the sponsoring organization, the Older Adult Centres' Association of Ontario (OACAO).**Chapter Four** outlines the objectives, sample recruitment, data collection procedures and secondary analyses of the two OACAO datasets selected for this study. The findings concerning each database are presented in **Chapters Five** (Study 1: Building Bridges to Tomorrow Project) and **Six** (Study 2: Multi-Centre Guided Evaluation Project), and discussed in **Chapter Seven**.

Chapter 2: Research on Older Adult Centres

As described in **Chapter One**, social participation reflects one's involvement in activities (such as recreation) often carried out with other people in the community (Levasseur et al., 2010). Reduced participation in recreation and social activities has been linked to social isolation and loneliness (Nicholson, 2012; Queen et al., 2014), which is in turn associated with higher a risk of mortality (Holt-Lunstad et al., 2015). Thus, it is no surprise that continued participation in recreation and social activities is essential for promoting overall health and well-being among older adults.

Older Adult Centres (OACs) are community-based facilities that provide programs and services tailored to the needs of local seniors. They offer a variety of social opportunities, including socializing with others (such as staff, volunteers, and other members), recreation activities, and volunteerism, and are thought to be key for promoting social wellness.

This chapter reviews the published research that has been conducted at OACs, which are often referred to as senior centres. Most of this research been done in the United States; thus, findings discussed below will pertain to US-based senior centres, unless otherwise specified. This review begins with a brief discussion of the organizational structure, resources, and challenges of OACs. The second section focuses on the types of programs and services provided. Participation patterns, including who attends, are discussed next, followed by a review of the benefits of participation, and summary and implications.

2.1 Organizational Structure and Resources

Research on the organizational structure and resources of senior centres is limited but suggests that there is significant variability with respect to facilities and budgets, and that many

centres, especially those in smaller or rural communities, face operational challenges, including limited staff and small and/or outdated space.

2.1.1 Operational Characteristics

A national survey of 246 senior centres found that centres had been operating on average for 12 years; about 75% were open five days per week, while only 13% operated on weekends (Krout, 1988, 1989). A multi-state survey of 755 organizations (Krout, 1984) revealed that two thirds were a sub-unit of another agency; 71% operated in separate facilities, while 29% shared space with other organizations such as community centres (44%), churches (16%) and multi-purpose service agencies (16%). Funding came from federal (29%), state (11%), county (10%), and municipal (26%) sources; only 2% charged member dues (Krout, 1984).

Studies by Krout found that community size was important. Senior centres in smaller communities were more likely to be located in dedicated buildings, but had less square footage (Krout, 1984, 1994). Rural centres also had smaller operating budgets and fewer paid staff (Krout, 1984, 1987).

2.1.2 Operational Challenges

Early research found that most centres (70%) reported moderate (54%) or severe (16%) limitations in their ability to provide programs due to the size of their facility (Krout, 1984); this issue was more common in rural centres (Krout, 1994). More recent research, however, has identified additional challenges. For instance, in a national survey of 376 senior centres, concerns included facility maintenance, operating budgets, and rising transportation costs (Pardasani & Goldkind, 2012). Reaching baby boomers was another significant concern among 12 senior centre directors, who discussed struggles retaining their membership and marketing programs to younger seniors, especially amidst increasing competition in older adult recreation programs

with other community organizations like the YMCA (Bobitt & Schwingel, 2017). In another study of 155 senior centres, directors identified budgetary restraints and space (limited and requiring renovation) as major issues, but reaching younger seniors and offering a greater variety of high quality programs were also noted (Pardasani & Sackman, 2014). In this study, directors said that with additional funds, they would grow their recreation program offerings (100%), make capital improvements to the facility (57%), offer more health programs (17%), expand transportation services (16%), and increase operating hours (4%; Pardasani & Sackman, 2014).

2.2 Programs and Services

Studies in the 1980's with 755 senior centres showed that centers offered, on average, 29 distinct programs/services, comprising 11 recreation activities and 18 social services (Krout, 1985, 1987). More recent research indicates there has been substantial growth in the diversity and complexity of programs/services provided by senior centres (e.g., Pardasani, 2004a; Pardasani & Thompson, 2012). This section examines the changing models of program and service provision at senior centres and reviews the available research on the breadth of offerings, including cultural diversity and differences between urban and rural centres.

2.2.1 Models of Program and Service Provision

Early research identified two basic models of service provision by senior centres: 1) a social agency model; and 2) a voluntary participation model (Litwin, 1987a; Taietz, 1976). In the social agency model, programs were primarily geared to meeting the needs of frail and poor seniors, while the voluntary participation model focused on attracting higher educated and more active older adults through recreational activities (Litwin, 1987a; Taietz, 1976). Several studies reported that, not surprisingly, many centres offered a mix of both types of programs (Ferraro & Cobb, 1988; Havir, 1991; Litwin, 1987b; Pardasani, 2004a; Sabin, 1993).

More recently, Pardasani and Thompson (2012) worked with a task force of 21 directors of senior centres to identify innovative and strategic approaches being used to promote participation among older adults. For this study, a nationwide survey was completed by 187 senior centres, with follow-up from 35 organizations thought to represent the most innovative programs (Pardasani & Thompson, 2012). The results identified six approaches:

1) Community Centres – provide recreation, art & culture, education, and intergenerational programs to all ages; programs are publicly funded and supported by membership dues;
2) Wellness Centres – provide health & wellness, meals, arts & culture, and recreation to adults age 50+; funded through membership fees;
3) Lifelong Learning/Arts Centres – provide education, travel, culture, and performing art events to adults age 50+; funded through membership/service fees;
4) Continuum of Care - provide recreation, arts & culture, fitness, meals, caregiver respite, adult day programs, home support, and transportation to healthy adults age 50+ and seniors who are frail and homebound; funded through service fees and private insurance;
5) Entrepreneurial Centres – provide vocational training and placement, hand-crafted goods for sale, recreation, arts & culture, fitness, meals, and education to adults age 50+; funded through fundraising and other income-generating events;
6) Café Programs – provide café-style meals (breakfast and/or lunch), health information, and entertainment to adults age 50+; funded through participant fees and fundraising.

Except for the Continuum of Care model (which tended to attract more frail seniors over the age of 75), these models were found to attract younger seniors who desired programming to support physical and mental wellness (Pardasani & Thompson, 2012). Although all six models described above strived to meet the needs of all older adults (including vulnerable seniors),

modern facilities and innovative programs supported a new image of more active older adults participating in senior centres (Pardasani & Thompson, 2012).

2.2.2 Types of Programs and Services Offered

Initial research found that centres offered more social services than recreation activities (Krout, 1985). In comparison, Pardasani (2004a) identified 44 different programs offered at 220 senior centres. The most frequently offered programs, by category, were:

- Nutrition - education (78%); on-site meals (73%); home-delivered meals (48%);
- Recreation - field trips (86.3%); bingo (81%); cards (81%); arts & crafts (69%); educational courses (69%); discussion groups (62%);
- Health - education (73%); exercise/fitness (72%); screening (61%);
- Social services - information and referral (83%); consumer protection information (63%);
- Volunteering - at the centre (64%); in the community (42%); training (36%).

More recently, Pardasani and Sackman (2014) examined the offerings at 155 senior centres, all of which provided lunch programs: core recreation and health programs (i.e., those offered by at least 90% of centres) included: cards, bingo, dominoes, parties, movie club, discussion groups, trips, volunteer opportunities, walking club, exercise, and health and nutrition education. With additional resources, centres reportedly wanted to offer more performing arts programs (e.g., piano, drama, fashion shows), recreation activities for the hearing and/or visually impaired, as well as English-language and computer classes.

A recent systematic review of health services at senior centres in the US and South Korea found a variety of programs, including: health promotion for physical health, nutrition, cognition, and immunization; safety (falls and accident prevention); and chronic disease management (Song

et al., 2017). The authors concluded that health promotion programs appeared to be the most widely offered health programs at senior centre.

2.2.2.1 Urban versus Rural Senior Centre Differences

Only a few older studies were found that examined the impact of community size or location (i.e., urban versus rural) on the nature and extent of senior centre programming. An analysis of 755 senior centres found that the total number of activities offered was higher in more urbanized areas (Krout, 1987), and urban centres were more likely to offer education and cultural programs, leadership opportunities, recreation programs, and volunteer opportunities. In an analysis of 424 senior centres over four years, a greater proportion of urban compared to rural centres increased the number of activities (80% versus 29%) and services (69% versus 33%) offered (Krout, 1994).

2.2.2.2 Culturally Diverse Programming

Research suggests that culturally responsive programming at senior centres positively impacts participation rates among ethnic seniors (Lai, 2006; McCaffrey, 2008; Pardasani, 2004b); however, the extent to which centres provide culturally diverse programs, or programs in languages other than English, varies. For instance, a survey of 220 senior centres in New York state found that only about 20% offered cultural programs or programs in alternate languages (Pardasani, 2004a, 2004b). In another study of 155 senior centres in New York city, however, several were found to offer programs in other languages, including Spanish (75%), Mandarin (26%), Russian (22%), Polish (13%) and French (9%; Pardasani & Sackman, 2014). Pardasani (2004b) found that centres offering culturally and linguistically diverse programs had a higher proportion of minority staff and participants and suggested that bilingual staff was essential for offering bilingual programs.

2.2.2.3 Frequency of Activity and Service Offerings and Program Implementation

In general, availability and/or frequency of programming at senior centres has not been well researched. One examination of 194 senior centres found that fitness programs (e.g., exercise, dance, walking, yoga) tended to be offered on an ongoing basis several times per week, while creative programs (e.g., crafts, visual arts, music, language groups) were usually offered once a week (Tobias et al., 2014). In this study, health services (e.g., arthritis self-help, stress management classes) were offered less frequency, with many offered on a one-time basis.

Research at 500 senior centres showed that 90% had a staff member, such as a director or activities coordinator, responsible for selecting and implementing programs (Casteel, Nocera, & Runyan, 2013). The main driver of program offerings was participant interest (Bobitt & Schwingel, 2017; Casteel et al., 2013); however, lack of staff, lack of time, and the absence of program-specific knowledge or experience was found to limit program provision (Zachary, Casteel, Nocera, & Runyan, 2012). Some senior centre directors also reported that they generally did not offer evidence-based programming because they were not convinced of their effectiveness and lacked sufficient funding (Bobitt & Schwingel, 2017). Directors also felt evidence-based programs were incongruent with the centre's priority of creating a dynamic environment for active seniors and instead felt they were more suitable for long-term care and assisted living settings, or for more sedentary seniors.

2.3 Participation at Senior Centres

In the US, it has been estimated that between 10 to 30 percent of older adults participated at their local senior centre in the past year (Ashida & Heaney, 2008; Calsyn, Burger, & Roades, 1996; Calsyn & Winter, 2000; Krout, Cutler, & Coward, 1990; Schneider, Ralph, Olson, Flatley, & Thorpe, 2014). Similar estimates have been observed in Canada (Lai, 2006; Strain, 2001). In

contrast, attendance rates were almost 50% among Norwegian seniors (Boen, Dalgard, Johansen, & Nord, 2010). This section provides an overview of the published research on who participates in, attends, or uses senior centres, indicators of participation (e.g., frequency of use, duration, nature and extent) and documented benefits.

2.3.1 Who Attends Senior Centres?

In general, studies suggest that senior centre participants tend to be older, female, live alone and earn lower incomes (e.g., Boen et al., 2010; Lai, 2006; Pardasani, 2010; Turner, 2004). In a direct comparison of 722 users and 561 non-users, Pardasani (2010) found that men, non-white, and urban-dwelling seniors were under-represented in senior centre populations, while those earning less than $25,000 per year, and who lived alone were more likely to attend. This study also found that over half of the centre users were over age 75 (compared to 37% of non-users) and only 12% were under age 65 (versus 39% of non-users).

Krout, Culter & Coward (1990) analyzed data from a national US sample of 13,807 seniors, 13.7% of whom attended a senior centre in the past year. They found that being female, lower income, living alone, and being more socially engaged (through volunteerism, religious activities, and social gatherings) predicted attendance at senior centres, while those with poor health, ADL and IADL difficulties, or from rural areas were less likely to attend. This study also reported a curvilinear relationship between centre utilization and age and education: the youngest and oldest seniors were less likely to participate, as were those with the most and least education.

Similar findings with respect to some, but not all these variables, were seen in a random sample of 4,903 seniors, 8% of whom attended a centre (Calsyn & Winter, 2000). In this study, significant predictors of attendance were older age, residing in a county with fewer urban blocks,

being more socially active, having better mental health, fewer ADL impairments, as well as greater awareness and use of social services for seniors.

In a study with 1,399 older adults from the Winnipeg area, 21% of whom reported attending a senior centre in the past six months, centre participation was predicted by being female, earning less than $1,000 per month, having fewer IADL limitations, living alone, and living in a rural community (Strain, 2001). The author also found that participation rates were higher among rural (27%) versus urban (16%) dwellers, and predictors of participation differed for these two sub-groups. For urban dwellers, being female, having fewer IADL impairments, living alone, and having more close friends predicted participation; however, none of these factors were significant in the rural sample. This may suggest that rural dwellers have fewer options for recreation and social activities or that these centres have more wide-spread appeal compared to urban locations which may create more targeted programming (Strain, 2001).

Senior centre use among racial and ethnically diverse older adults has been the topic of several studies; however, findings are mixed. Although some found no impact of race/ethnicity on participation (Calsyn et al., 1996; Calsyn & Winter, 2000), others find centre users tend to be Caucasian (Gavin & Myers, 2003; Pardasani, 2010). One study on seniors living in public housing, however, reported that racially diverse seniors were more likely to attend (Schneider et al., 2014). In a Canadian study examining centre use among 1,537 Chinese immigrants living in seven cities (30% of whom reported attending in the past year), attendance was predicted by having a stronger Chinese ethnic identity and lower English proficiency (Lai, 2006).

2.3.1.1 Interest in Joining a Senior Centre

Only a few studies have examined factors related to interest in joining a senior centre. For instance, Schneider and colleagues (1985) randomly sampled 200 seniors in two counties that

had recently opened seven centres and found that 32% had attended at least once; significant predictors of joining were being female and attending church on a weekly basis.

Another study of 126 older adults living in a neighbourhood with a recently built senior centre found that higher intentions to participate were seen in women, those without a high school diploma, those with few friends and family in close proximity, and those with lower perceived level of social connectedness (Ashida & Heaney, 2008). Follow-up with 111 participants after 14 months found that only 19% (n=21) were still participating at the centre. Reasons for not continuing to attend included: not knowing what programs and services were offered (21%), being too busy (21%), health problems (14%), attending a different centre (8%) and lack of interest (6%); only two individuals reported transportation as a barrier.

Strain (2001) followed 956 Manitobans over four years and found that only 8% had joined over the follow-up period. Younger age, living alone, and having a greater desire for more contact with friends and family were significant predictors of joining a centre over four years.

2.3.2 Indicators of Participation

In addition to examining the proportion of seniors who use senior centres, studies have also examined patterns of participation. The most common indicator studied has been frequency of participation (i.e., how often people attend the centre); other indicators included: adherence (i.e., number of years attending), intensity (i.e., number of hours at the centre), as well as the extent and nature of participation (i.e., number and types of activities).

2.3.2.1 Frequency

Several researchers have examined frequency of participation among senior centre users, with some studies reporting much higher rates than others. Studies from the US suggest that older adults attend centres around three times per week (Litwin, 1999; Turner, 2004, 2006;

Walker, Bisbee, Porter, & Flanders, 2004); however, one study of 623 older adults from 15 senior centres found more frequent participation, with nearly half attending daily, and one third attending two to three times per week (Ralston, 1991). These findings are all contrary to those reported in a Canadian study, where frequency of participation over a six month period ranged from one to 96 times, for an average of 24 visits or approximately once a week (Strain, 2001).

Several studies have explored sociodemographic and health characteristics related to frequency of participation, although the findings are mixed. For example, Strain's (2001) study reported that those living alone made more visits to the centre but age, sex, education, income, self-rated health, chronic conditions, IADL limitations, and residence (i.e., urban versus rural) were not. On the other hand, Sabin (1993) and Miner, Logan, and Spitze (1993) found several variables associated with more frequent attendance, including: older age, lower education, lower income, and living alone. In these studies, self-rated health and ADL/IADL impairments were not significant; this is in contrast to findings from a small study of 48 participants at one centre, where those with poorer health had higher frequency of attendance (Ferraro & Cobb, 1988).

Although Miner and colleagues (1993) reported no racial differences, other studies have found lower attendance rates among racial or ethnically diverse seniors. For instance, Schneider & colleagues (2014) reported that, overall, 63% of the 319 surveyed users attended at least once per week; however, the proportion of those with weekly attendance was lowest for Chinese participants (38%), followed by Black participants (58%). Lai (2001) also reported low attendance rates in a random sample of Chinese seniors who attended the only Chinese senior centre in Calgary: 25% visited more than once per week, 11% went once per week, and the remaining less often. Although another study found that non-white females were actually more likely to participate on a weekly basis than white females (77% versus 47%; Tang, Heo, &

Weissman, 2011), the sample was small (n=85) and consisted of predominantly non-white seniors (n=70).

Strain's (2001) study reported that number of close friends and family and desire for contact with social network was not associated with frequency of centre use; however, other studies have suggested that social engagement is important. For instance, Walker et al. (2004) found that participation in faith-based activities (e.g., attending church) strongly predicted frequency of attendance. Two other studies found that both higher participation in social activities (including volunteerism, church, and visits with friends/family) predicted "frequent" participation (Miner et al., 1993; Sabin, 1993). Krout (1991) also found that more contact with friends was associated with higher centre use.

Several studies found that living close to the centre positively impacted frequency of attendance (Krout, 1991; Miner et al., 1993; Ralston, 1991). Walker and colleagues (2004) also found that availability of transportation was positively associated with attending the centre more often, and that participants expressed a desire for more options and improved on-site parking.

2.3.2.2 Adherence

Research suggests that seniors tend to maintain long-term associations with their centre. For instance, Litwin (1999) reported that participants remained at their centre on average for 6.4 years (range up to 25 years). Turner (2004), meanwhile, found that 51% had been attending their centre for five years or more; another 30% between one and five years. Ralston (1991) reported similar findings, wherein 49% of respondents had been attending more than four years, 24% for three to four years, and 27% for one to two years; this study also found that older age was positively associated with adherence.

In a study of 235 older adults by Krout (1991), 29% of whom have been attending the centre for 10+ years, length of membership was not associated with demographic characteristics, health, accessibility (e.g., transportation, distance to centre) or social contact. Ferraro and Cobb (1988), on the other hand, found that membership length was positively associated with life satisfaction, and living with others. With respect to racial differences, Tang et al. (2011) found that length of membership was similar for white and non-white females (average 5.9 and 5.6, respectively), but was inversely associated with functional limitations and chronic conditions.

The studies reviewed above basically asked members to self-report how long they had been at attending their centre. Only a few studies have employed more systematic records to examine adherence longitudinally. For instance, in the study by Strain (2010), senior centre participation among 956 Canadian seniors was recorded in 1991 and then again 1995. Over the four-year period, 11% continued their participation in a senior centre, while 13% ceased participation (i.e., were participants in 1991 but not in 1995); 8% were joiners, and the remaining 68% did not attend a centre at either time point. The author found no significant group differences in baseline demographic or health characteristics between those who continued and those who ceased attending; however, there was a trend for those with more friends at baseline to cease participation over the next four years (Strain, 2001).

Ecclestone, Myers, and Paterson (1998), meanwhile, tracked 541 participants from 12 different older adult programs in the same location for three years. They found that adherence and attendance rates tended to decline over time, and that seniors leave, rejoin and switch classes regularly. In this study, participants who tried multiple programs were significantly more likely to remain at the centre over the long-term.

2.3.2.3 Intensity

Only three studies were found that examined intensity of participation with respect to the number of hours individuals spent at a senior centre per visit, or per week. In one study, frequent attenders (i.e., those attending three days per week) were found to spend approximately four hours at the centre each visit (Rhynes, Hayslip, Caballero, & Ingman, 2013). In Tang et al.'s (2011) study, non-white women were found to spend significantly more time at the centre than their white counterparts (10.9 hours per week versus 4.2 hours per week). Another study found that women who lived alone spent more time at the senior centre than those who lived with others (3.4 versus 3.1 hours per visit; Aday, Kehoe, & Farney, 2006).

2.3.2.4 Activities

Centre participation has also been examined with respect to the number of activities engaged in per visit (Walker et al., 2004), and/or the total number of activities (Aday et al., 2006; Ferraro & Cobb, 1988; Gitelson, Ho, Fitzpatrick, Case, & McCabe, 2008; Krout, 1991; Ralston, 1991). A few studies have also examined the most popular types of activities at centres (Turner, 2004, 2006), and explored factors that impact participation rates (Swan, Turner, Shashidhara, & Sanders, 2013), including attendance and dropout patterns (Gavin & Myers, 2003).

Walker et al. (2004) surveyed 298 centre attendees and found that they engaged in an average of 2.7 activities per visit. In this study, 88% engaged in zero to five activities, and 7% engaged in five to ten. When looking at overall participation rates, Gitelson (2008) found in a sample of 1,119 centre congregate dining participants that 16% participated in only the meal program, 29% participated in one additional activity, 21% participated in two additional activities, 34% participated in three or more additional activities.

Krout (1991) reported much higher levels of activity participation in his sample of 235 senior centre attendees, where participants, on average, engaged in five different activities. Participation rates were higher in white attendees, those with better self-rated health, higher morale, higher contact with friends, and those in urban communities; however, only associations with race and morale remained significant when accounting for other variables (Krout, 1991). Ralston (1991), meanwhile, reported that centre users engaged in 3.7 activities, but in this study, only higher education emerged as a significant predictor of activity participation. In studies of older women attending senior centres, race did not impact participation levels (Tang et al., 2011), but those who lived alone attended more activities compared to those who lived with a spouse (10.9 versus 7.8 activities; Aday et al., 2006).

Some studies have surveyed participants with respect to the type of activities they do at the centre. For instance, a multi-centre, state-wide survey of physical activity programs at centres found that 56% of the 1,482 survey respondents participated in chair exercises, 55% in general fitness classes, and 37% in dance or aerobics classes (Swan et al., 2013). Another study of 856 senior centre members found that 86% participated in physical fitness programs, 66% played cards/table games, 61% participated in centre trips, and 54% engaged in volunteer work (Turner, 2004). Similar participation rates in cards/table games and trips was reported in a later study by Turner (2006) with 740 centre participants. This study also reported that: 55% attended health assessments, 51% participated in fitness, 44% in chair exercises, 27% in dance/aerobics programs, and 20% in computer classes (Turner, 2006).

In the studies above, participation rates were retrospectively self-reported, and thus may not reflect actual attendance rates. Only one study was found to track enrollment, attendance, and drop-out patterns in tai-chi and line dancing programs at six senior centres and two community

centres in Southern Ontario (Gavin & Myers, 2003). This study found that for both programs, enrollment was highest in the fall, with a small decline in the winter, and a sharp decline in the spring. Average attendance for tai chi was slightly higher compared to line dancing (72% versus 68%), but rates varied by season, with the lowest attendance observed in the spring for tai chi versus the fall for line dancing. For both programs, drop-out rates were lowest in the spring and highest in the fall and winter, but line dancing had a significantly lower average dropout rate compared to tai chi (10% versus 23%).

2.4 Benefits of Participation

There is a growing body of research examining the benefits of belonging to senior centres. For instance, Turner and colleagues (2006) interviewed 740 older adults from 21 senior centres and found that 76% to 89% reported that the various programs were helpful to them. Gitelson et al. (2008) also found that having a nutritious meal at the centre was important to participants, as was making new friends, having fun, and feeling like a part of a group.

Much of the research to date on benefits of senior centre participation has focused on four areas: (1) nutritional benefits of congregate meal programs; (2) physical benefits, including enhanced physical activity levels and improved physical functioning as a result of various exercise programs; (3) health benefits (knowledge and/or changes in behaviours) associated with various health promotion initiatives; and (4) social benefits, often as a result of centre use in general as oppose to specific programs.

2.4.1 Nutritional Benefits

Congregate meal programs are a prominent feature of many US-based senior centres due to federal support and funding from the Older American's Act (Gergerich, Shobe, & Christy, 2015; Lloyd & Wellman, 2015). Research has described several positive outcomes of congregate

meal programs offered at senior centres (Dichiera, Cotugna, & Vickery, 2002; Gitelson et al., 2008; Swan, Severance, & Turner, 2016). For instance, a study of 1,119 older adults from 19 senior centres who attended lunch programs ranked receiving a nutritious meal as the most important benefit of the centre (Gitelson et al., 2008). Another survey of 51 senior centre attendees found that 56% found the nutritional quality of the meals as better than what they would consume at home (Dichiera et al., 2002). Similar findings were reported by Swan et al. (2016) who examined 989 seniors from 28 centres that provided meal programs: 58% reported that the program helped improve their diet, while 39% believed eating at the centre improved their overall health.

2.4.2 Physical Benefits

Many older adults report participating senior centre programs to be more physically active. For instance, interviews with 15 senior centre attendees revealed that many did not engage in regular physical activity prior to joining and that exercising at the centre helped them feel more relaxed and physically fit (Taylor-Harris & Zhan, 2011). Gavin and Myers (2003) also found that the most common reason cited for joining a tai-chi or line dancing class was for fitness benefits such as improved balance and coordination.

Findings on whether centre participation actually increases physical activity are mixed. In a study of 742 centre participants, Swan et al. (2013) found that 58% had reportedly increased their physical activity level over the past year, and that increases were predicted by being male, living alone, attending the centre for at least one year, and participating in each of the three examined fitness classes: fitness, dance and chair exercises. Another study, however, found that weekly step counts did not differ between those who used the centre's fitness facility and those

who attended the centre but had never used the fitness facility (Turner, Schmitt, & Hubbard-Turner, 2016). Importantly, neither study accounted for physical activity outside the centre.

Several studies have also found that fitness-based interventions offered at senior centres have positive impacts on weekly step counts (Fitzpatrick et al., 2008; Sarkisian, Prohaska, Davis, & Weiner, 2007), as well as physical functioning as measured by chair stands, sit-and-reach tests, and/or walk-speed tests (Hand, Cavanaugh, Forbes, Govern, & Cress, 2012; Li et al., 2008; Sarkisian et al., 2007). Another study examined the impact of an exercise program led by a physical therapist for older adults with reduced mobility living near one of three senior centres (King et al., 2002). In this study, the control group exercised at home, while the intervention group exercised at the centre three times per week for the first six months, followed by once per week for the next six months, and then at only at home for the final six months. The authors found that physical function improved in the intervention compared to the control group at three, six, and 12 months, but not at 18 months (King et al., 2002), suggesting that the structured exercise class at least once per week at the centre was required to sustain benefits.

2.4.3 Health Benefits

Several studies have demonstrated benefits of attending health programs at senior centres (see Song et al., 2017 for review). Benefits have been observed for outcomes such as health literacy, preventive health/self-management behaviours, and/or health risk indices (e.g., blood pressure, weight) in a variety of programs, such as: diabetes self-management (Speer et al., 2008), weight loss (Haber, Looney, Babola, Hinman, & Utsey, 2000; West et al., 2011), blood pressure monitoring (Shellman, 2000; Truncali, Dumanovsky, Stollman, & Angell, 2010), immunization education (Krieger, Castorina, Walls, Weaver, & Ciske, 2000), cancer screening (Sun, Basch, Wolf, & Li, 2004), alcohol consumption (Fink, Beck, & Wittrock, 2001), chronic

disease self-management (Leveille et al., 1998), disability/injury prevention (Sweeney & Chiriboga, 2003; Wallace et al., 1998), advanced directive seminars (Murphy, Sweeney, & Chiriboga, 2000), and falls prevention (Baker, Gottschalk, & Bianco, 2007; Li et al., 2008; Reinsch, McacRae, Lachenbruch, & Tobis, 1992).

2.4.4 Social Benefits

Senior centre participants frequently describe the strong interpersonal connections they develop with other members and staff (McGovern, Brown, & Gasparro, 2016) and research has consistently reported that the social environment created at senior centres is important for fostering friendships, reducing feelings of loneliness, and encouraging ongoing participation in centre programs. For instance, one study of 257 senior centre attendees found that 80% felt that the centre had improved their lives because of the social support provided (Fulbright, 2010). In a case study analysis of three centres, facilities were viewed as social gathering spots and participants believed they created opportunities to spend time with others, especially for those who experienced loneliness or did not have a spouse or family close by (Havir, 1991). In this study, even non-members viewed the centres as friendly places for socializing and connecting.

In focus groups and interviews with senior centre attendees, participants described their appreciation that the centre was for older adults only, noting that they were more comfortable than in community organizations for all ages and felt the environment and staff were more responsive to their needs, fostering a sense of belonging (Hickerson et al., 2008). Similar feelings emerged from interviews with 15 African-American attendees, who discussed how the close friendships they made at the centre encouraged their participation in specific programs and helped them overcome barriers (Taylor-Harris & Zhan, 2011). Other studies have also found that

making friends at the centre encouraged participation in activities (Aday et al., 2006; Gavin & Myers, 2003).

The importance of friendships at senior centres was explored in several studies, with all finding that attendees reported making new several friends at their centre (Aday et al., 2006; Fulbright, 2010; Litwin, 1999; Turner, 2004). In one study of 856 seniors: 56% reported that the people at the centre were the only people they spent time with during the day, and 90% indicated that the personal connections they made with others at the centre were important to them (Turner, 2004). Fulbright (2010), meanwhile, studied 257 older adults from nine centres and found that among those who reported making friends (94%), 88% felt they could rely on those friends in a time of need and 76% felt their life had improved as a result of these friendships.

Aday et al. (2006) examined the impact of living arrangements (alone versus with a spouse) on senior centre friendships among women. While the two groups did not differ in the total number of close friends made, 60% of women who lived alone had to rely on a centre friend, compared to only 40% of those who were married. Both groups of women also reported spending time with their centre friends in other settings, but those who lived alone were more likely to go shopping, eat out, play games, and go to church with those friends. Other activities, including social events, visiting on the phone and volunteer work did not differ between groups.

Two studies by Fitzpatrick and colleagues indicate that centre-based social support may positively impact physical and mental health. For example, the study by (Fitzpatrick, McCabe, Gitelson, & Andereck, 2006) which examined 1,026 attendees of seven centres found that perceived social benefits were greatest for those who: lived less than eight miles from the centre, participated in the meal program, and earned lower incomes. Fitzpatrick, Gitelson, Andereck, and Mesbur (2005), meanwhile, examined the relationship between centre-based social support

(from peers or staff) and physical and mental health in a sample of 186 seniors from two centres in Southern Ontario. They found that support through caregiving (e.g., assistance with chores, hugs, and sharing fears/worries) but not friendship per se (e.g., having a good time, someone to listen to or confide in) resulted in better physical and mental health, and happiness.

2.5 Summary and Implications

While there is a substantial body of research on senior centres, the majority of the studies were conducted in the 1980's and 1990's in the United States; only a handful of studies have been conducted in Canada (Lai, 2001, 2006; Strain, 2001) and only two examined participation at centres in Ontario (Fitzpatrick et al., 2005; Gavin & Myers, 2003). Changing demographics, largely due to the baby boomers, and a shift towards more innovative and diverse older adult centre programming (Pardasani & Thompson, 2012) warrants further research into who attends senior centres and the role they play in promoting recreation and social participation.

Several studies have identified characteristics that predict self-reported attendance at a senior centre (e.g., Calsyn & Winter, 2000; Krout et al., 1990; Strain, 2001); however, participants usually self-define what a senior centre is and were not asked to identify the specific centre they attend. Furthermore, participation is often reported as any visit in the past six months or one year, without considering whether they are regular attendees (versus attending a one-off special event). Thus, more research with direct comparisons between known users and non-users is warranted.

With respect to patterns of participation, most studies have focused on how long people have been members and how often they attend. Only three studies (Aday et al., 2006; Rhynes et al., 2013; Tang et al., 2011) have examined how much time people spend at the centre. Research has also rarely examined participation rates within the wide range of programs available at

centres (Pardasani, 2004a; Pardasani & Sackman, 2014), and instead focus on the total number of activities participants use without considering what the activities are (e.g., Aday et al., 2006; Krout, 1991; Ralston, 1991; Walker et al., 2004), or examine participation in one or two specific programs, predominately exercise (e.g., Gavin & Myers, 2003; Swan et al., 2013). In order to understand how older adult centres are used for recreation and social participation among older adults, it is necessary to have a full understanding of how much time they spend at the centre, and what activities they engage in.

Importantly, almost all of the studies examining patterns of participation among senior centre users rely on retrospective self-report and thus reported rates may not reflect true participation levels. Although Gavin and Myers (2003) tracked individual attendance in specific programs, this is not usually the case in other organizations and/or programs (Myers, 1999). Ideally, senior centres should be recording not only individual attendance in all of their programs, but also tracking how much time people spend at the centre each visit, to account for those who come early or stay late to socialize with others (without participating in programs).

Research on the benefits of senior centre participation tend to predominantly focus on perceived benefits, especially for social health. This is likely because most centres do not use standardized measures to assess centre/program outcomes at baseline and after some amount of participation. Although there have been several empirical studies examining the benefits of certain physical activity or health interventions delivered at senior centres, it is important to remember that these interventions may not reflect the regular circumstances that centres usually operate under. For instance, the fitness intervention examined by King and colleagues (which was found to be beneficial) was delivered by a physiotherapist; however, centres would not likely be able to hire specialized staff to deliver fitness programs on a regular basis due to costs

(Pardasani & Sackman, 2014). Bobitt and Schwingel (2017) also found many senior centres do not offer evidence-based programs as part of their regular calendar due to excessive costs associated with facilitating the programs, and the beliefs that these programs lack effectiveness, are not innovative, and will not be of interest to their membership.

It is not clear from the literature how senior centres are used for social engagement in relation to other facilities in the community that offer similar programs. There is some evidence suggesting senior centres may be preferred by older adults as they cater specifically to this age group (Hickerson et al., 2008), thus minimizing fears of social rejection and ageism (Goll et al., 2015). Some senior centre directors, however, have noted increased competition from other organizations, like YMCAs, in attracting younger and more active seniors (Bobitt & Schwingel, 2017). To better understand the extent to which senior centres are focal points for recreation and social participation, it is necessary to also examine other venues people access for such activities.

This chapter reviewed the published research on senior centres. To set the stage for this study, **Chapter 3** provides background on the the Older Adult Centres' Association of Ontario (OACAO) and describes the major internal projects they have conducted to learn more about their member centres and participants.

Chapter 3: Project Background

As described in **Chapter 2**, older adult centres are community venues that offer opportunities recreation and social participation for seniors. Unlike in the United States, there is no national organization for OACs in Canada; however, there are four provincial organizations that provide support for local centres (Dubé, Myers, Sheppard, & Friedman, 2016), and the Older Adult Centres' Association of Ontario (OACAO) is the Ontario organization that advocates on behalf of and provides resources to 180 OACs and associate members.

In addition to support from the OACAO, there is also provincial funding available to Ontario OACs through the *Seniors Active Living Act* (formally the *Elder Persons' Centre Act*). Centres funded under this program must provide activities and services that promote social engagement, and active and healthy living for persons who are primarily seniors. To receive funding, organizations have to demonstrate their programming: fills a need in the community; provides maximum benefits to seniors; supports age-friendly community initiatives; and incorporates a social inclusion strategy to reduce social isolation and loneliness (Ministry of Seniors Affairs, 2017). In Ontario, there are 303 funded Seniors Active Living Centres, 177 of which are members of the OACAO.

The OACAO has conducted several province-wide projects to: 1) profile older adult centres and their participants; 2) gather evidence to advocate for the importance of these centres in the lives of Ontario seniors; and 3) secure on-going support from the provincial government. This chapter begins with a brief overview of the OACAO (history and goals), followed by a description of the objectives and methods of each of the four major projects conducted to date. The third section describes and compares the main findings across these projects with respect to what has been learned about senior centres in Ontario, the programs and services they provide,

and their participants. The final section discusses the limitations of these projects and sets the stage for further secondary analyses of two of these datasets to learn more about OAC centres and their participants.

3.1 History and Goals of the OACAO

The OACAO began in 1973 and is non-profit provincial organization that strives to be a recognized leader in the development of resources, services, and supports for community-based older adult centres (OACs). The OACAO is divided into eight provincial regions (see **Appendix B**) and estimates that their membership of 180 organizations serves over 200,000 seniors.

As stated on their website (www.oacao.org), the goals of the OACAO are to be: (1) a trusted, credible, well-respected, efficient, and effective organization; (2) a self-sustaining, stable, funded organization; (3) a recognized leader in resources/supports for community based OACs; (4) an effective advocate to all levels of government on issues pertaining to OACs; and (5) support OACs in meeting government reporting requirements and setting standards to assure that OACAO member centres deliver quality experiences to older adults in their community. While the OACAO does not directly serve older adults, the organization undertakes initiatives that support OACs in promoting the health and wellness of Ontario seniors.

The OACAO has four membership categories: full member centres, associate agencies, individuals (e.g., student, senior, volunteer), and senior clubs/senior councils. The cost of membership varied across categories, ranging from $75 (for individuals) to over $300 (for full membership). The cost of full membership ranged from $300 to $650, depending on the centre's annual operating budget.

The OACAO is staffed by an executive director (ED), an administrative assistant and a communication specialist, and is governed by a board of directors (BOD). The BOD consists of

23 individuals: seven executive members elected at the annual meeting of the association, and 16 regional representatives including one staff member and one senior from each region. The BOD participates in OACAO-led initiatives and generally advises and supports staff as needed.

3.2 Description of OACAO Major Projects

The executive committee of the OACAO has initiated several large-scale projects to better understand and serve their membership. The four main projects completed to date are: (1) the biennial OACAO Member Profile Surveys; (2) Building Bridges to Tomorrow: A User Profile of Older Adult Centres in Ontario; (3) the OACAO Elderly Person Centre (EPC) Impact Survey; and (4) the Partnership Grant Program (PGP) on Building Evaluation Capacity. This section provides a description of the objectives and methods, while findings are presented in **Section 3.3.**

3.2.1 Member Profile Surveys

Starting in 1998, the OACAO has been conducting biennial Member Profile Surveys (MPS) of their centres. In general, the MPS has examined: (1) centre characteristics such as hours of operation and staffing levels; (2) funding and participant fee structure; (3) participant characteristics; (4) program and service delivery; (5) governance; (6) issues faced by centres; and (7) use of OACAO resources and requests for additional support. In the most recent MPS, completed by 71 centres in 2015 (see **Section 3.2.4**), a new section was added to examine evaluation practices (such as strategic planning, routine data collection, tracking and use of standardized measures). Recent iterations of the MPS have been conducted electronically using SurveyMonkey with response rates of 50% to 60%.

Prior to 2015, the OACAO executive committee oversaw the administration and analyses of the MPSs and produced reports for dissemination to their member centres. These reports contained basic descriptive results, primarily in graphic form. In 2015, the MPS was

administered as part of the PGP: Building Evaluation Capacity project (see **Section 3.2.4**), and more detailed analyses were conducted to examine differences between centre type (non-profit and municipal), size (small, medium and large), and affiliations (stand-alone compared to part of a community centre or support agency). Several questions from the 2015 MPS were added to the annual centre membership renewal form so that the OACAO could maintain a more up-to-date profile of their members without re-administering the MPS every two years.

3.2.2 Building Bridges to Tomorrow Project

The three-year Building Bridges to Tomorrow project (BBTP), which began in 2007, was funded by the Ontario Trillium Foundation. The aims of the project were to:

1. **Identify how the OACAO could better support OACs**: Due to the diversity of the OACAO membership (i.e., with respect to type, size, and location), the OACAO wished to examine how effective their current programs and services were at meeting the needs of OACs and how best to engage those centres who were not currently members.
2. **Examine which types of seniors attend older adult centres:** While the OACAO has always advocated for the significant role OACs play in the health and wellness of Ontario seniors, this project aimed to better understand the benefits of participation.
3. **Examine which seniors do not attend senior centres:** The OACAO wished to better understand how seniors not attending an OAC meet their health, social, and leisure needs.

The final report (OACAO, 2010) described data from 2,354 centre users and 692 non-users collected at 24 centres via questionnaires completed during an in-person interview by trained project volunteers (see **Section 4.2** for a detailed overview of centre and participant recruitment, volunteer training, and questionnaire development). This report contained two sections pertaining to centre members and non-members, respectively. Findings (primarily frequencies

and distributions) were displayed graphically. There were no statistical comparisons between various types of centre users (e.g., men versus women) or between centre users and non-users.

3.2.3 EPC Impact Survey

In 2013, the OACAO conducted a survey of 35 member centres that received provincial *Elderly Person Centre* (EPC) funding (now called *Seniors Active Living Centre* funding) to examine centres' impact on the health and well-being of participating seniors, including reduced isolation, improved wellness, and enhanced ability to make healthier choices (OACAO, 2013).

The EPC Impact Survey, spearheaded by the OACAO Metro Region Working Group, was administered via SurveyMonkey and was available in English, French, Spanish, and Chinese. A total of 4,600 older adults completed the e-survey, which consisted of 17 questions that examined (in order): participation levels and rates; perceived benefits of participation; and demographic information. Perceived benefits were assessed three ways: participants were asked to rate the extent to which they agreed (on a five-point scale from strongly agree to strongly disagree) that coming to the centre has made them: 1) feel more connected to other people; and 2) become more socially active. Participants were also asked to rate their level of agreement (on the same scale) regarding nine statements that reflected potential benefits of coming to the centre. The statements, beginning with "*As a result of participating at the centre…,"* were as follows: 1) I have maintained or improved my health; 2) I am more physically active; 3) I have a more positive attitude; 4) I feel more confident; 5) I have better ability to handle stress; 6) I am better able to manage my chronic diseases (e.g., diabetes, arthritis, heart disease, osteoporosis); 7) I have new knowledge about how to manage my health; 8) I have new skills to manage my health; and 9) I am more involved in learning related activities.

The project team prepared a report of descriptive findings. Based on the findings, they concluded *that "EPCs play a key role for older adults in Ontario […] and provide key outcomes in the area of health and wellness [thus making] an important contribution within the health care sector in Ontario"* (OACAO, 2013 p. 16). The OACAO and its member centres have referenced the findings and conclusions of this project frequently in subsequent grant applications and advocacy initiatives with the Ontario government.

3.2.4 Partnership Grant Program: Building Evaluation Capacity

The Partnership Grant Program (PGP) on Building Evaluation Capacity was a two-year (2015 to 2017) project funded by the Ontario Ministry of Citizenship and Immigration that aimed to enhance program evaluation capacity at the local, regional, and organizational levels of the OACAO. This four-phase project was conducted by external evaluation consultants (including the present author) and guided a Project Advisory Committee (PAC), which included the OACAO executive director, and five others (staff or advisory board members from various OACs) who were highly active within the OACAO. A brief description and overview of each phase is provided below.

3.2.4.1 Phase 1: Assessing Existing Evaluation Capacity

As described in **Section 3.2.1**, questions on current evaluation practices were piggybacked onto the 2015 MPS. Additionally, follow-up interviews were conducted with 16 participating managers to better understand: 1) facilitators and barriers to doing evaluation; and 2) perceived need and demand for evaluation training and resources.

The findings from the 2015 MPS revealed that few centres were collecting detailed information on the seniors who attended their programs; however, there was substantial interest

in having common data collection tools (e.g., a standardized background questionnaire designed for OACs) and recommendations for outcome measures (Sheppard, Myers, & Dube, 2016).

3.2.4.2 Phase 2: Introductory Evaluation Training

Phase 2 was dedicated to developing and delivering basic training on program evaluation via six in-person workshops (99 centre personnel from 55 OACs) and a two-part webinar series (50 centre personnel from 28 OACs). The workshop and webinar content focused on understanding basic evaluation concepts, learning how to develop program rationales and objectives, implementing or refining routine data collection and tracking procedures, and strategies for obtaining participant feedback. This was followed by illustrations of more in-depth evaluation projects, including needs assessment, process evaluation, outcome evaluation, and cost analysis. All examples, exercises and pre/post quizzes were tailored for OACs.

3.2.4.3 Phase 3: Guided Evaluation Projects

Phase 3 focused on Guided Evaluation Projects (GEPs) where three centres completed short-term (3 to 4 months) evaluation projects with the assistance of the PGP evaluation consultants. In addition to the individual centre projects, a multi-centre GEP (MC-GEP) was conducted with 12 centres to: 1) examine the acceptability and feasibility of various data collection approaches and instruments; 2) develop strategies that work in OACs for recruiting participants and collecting data; and 3) enhance the evaluation capacity and confidence of centre staff and volunteers through hands-on experience with recruitment and data collection.

One data collection tool created by the PGP project team and used in the MC-GEP was a common background questionnaire (BQ) for OAC participants. The BQ was pilot tested with 41 seniors from five PAC centres prior to being included. The final version, which was translated into French, contained 25 questions. An accompanying user manual was created to illustrate data

coding and entry. A “centre-use” questionnaire was also created by the PGP project team to gather additional data of interest to OACs, such as modes of transport participants use to get to the centres, patterns of centre use, and friendship development.

Based on a review of previous OACAO projects, communications with the BOD, PAC, and evaluation workshop attendees, the PGP project team conducted a review of published outcome measures that addressed primary areas of interest, including loneliness, social isolation and support, and general physical functioning and wellbeing. In addition to psychometric evidence, the PGP project team looked for measures that were developed for older adults, were easy and quick to complete, and ideally, were available in English and French. The measures that were endorsed by the PAC and included in the MC-GEP were: (1) the Activities-Specific Balance Confidence Scale; (2) the Vitality Plus Scale; (3) the Life-Space Assessment; (4) the UCLA 3-Item Loneliness Scale; and (5) the Medical Outcomes Study Social Support Survey. The MC-GEP also included a less traditional method of data collection (namely individual travel diaries). These measures are described further in **Chapter Four**.

The MC-GEP was completed at 12 centres with 295 older adults. A detailed description of centre and participant recruitment, and data collection strategies are provided in **Section 4.3**. Following the completion of the MC-GEP, the PGP project team: 1) created a bank of additional background questions for centres to consider; 2) developed a handbook of recruitment and data collection strategies, including possible ways to integrate data collection into commonly used client management systems; and 3) provided recommendations regarding the various outcome measures, including when to administer and how to use the data. It is important to note that while the OACAO retained copies of all data collected, participating centres were not asked to analyze their data (unless they wished to do so) as this was not the main purpose of the exercise.

3.2.4.4 Phase 4: Intermediate Evaluation Training

In final phase, a two-day intermediate level evaluation training workshop was delivered to 14 OAC staff members who had previously attended the introductory training. Main topics included recruitment and data collection strategies, as well as data management, analyses and interpretation for different types of evaluation projects (routine monitoring, needs assessment, process, outcome, and cost evaluations).

3.3 Findings from the OACAO Projects

The primary findings from the major OACAO projects are presented below. Results have been integrated across projects, where appropriate, to provide the most comprehensive and up-to-date profile of OACAO member centres and their participants. This summary does not include the participant data from the MC-GEP, which was not analyzed at the time of the project.

3.3.1 Profile of Member Centres

The most recent findings from the 2015 MPS (Sheppard et al., 2016) were based on 71 completed surveys (56% response rate). Sixty percent of centres were non-profits and 34% were municipal; 38% identified as stand-alone, while 42% reported being part of a community support agency or community centre. With respect to size, 36% self-classified their centre as "small" (i.e., serving ≤ 200 seniors), 33% as "medium" (i.e., 201 to 1,000 seniors), and 31% as "large" (i.e., over 1,000 members). EPC funding was received by 77% of the sample.

All centres were open a minimum of four days per week (average of 5.8 days per week); small centres were open fewer days per week. Centres had an average of 2.9 full-time staff (range: 0 – 27) and 4.1 part-time staff (range: 0 – 57). Four centres had no paid staff and were run entirely from volunteers. All centres had at least 10 volunteers (average: 151.5; range: 10 –

730); not surprisingly large centres had more staff and volunteers. Centres served an average of 136 individuals per day (range: 12 – 750) and 888 per year (range: 60 – 7115).

Operating budgets ranged from $13,050 to over $3,600,000 (average: $316,497); large centres had bigger budgets. Centres reported that approximately 36% of their operating budget was from non-government sources like membership fees and fundraising (range: 0% - 81%). Non-profit centres relied more heavily on non-government funds, accounting for 50% of their operating budget (compared to 21% observed in municipal centres).

3.3.2 Profile of Seniors who Attend OACs

The data indicates that more older women than men attend OACs, with estimates ranging from 68% female in the 2013 EPC Impact Survey (OACAO, 2013) to 77% in the most recent MPS (Sheppard et al., 2016). About 40% were aged 65-74; only 15% were under the age of 65 (OACAO, 2010; Sheppard et al., 2016) and just 3% were over 90 (OACAO, 2013). Members were not highly educated: less than 10% had undergraduate or graduate degrees; about a quarter had completed college; while 30 to 40% had completed high school (OACAO, 2010, 2013).

All the OACAO projects to date have indicated that OACs are not serving many ethnic seniors, despite the fact that visible minorities were the fastest growing segment of the aging population in Ontario, with a 35% increase from 2006 to 2011 (Laher, 2017) . For instance, the BBTP found that only 4% identified as a visible minority, and only 9% indicated that English was not their first language. In the EPC Impact Survey, only about 40% of respondents reported that they were born outside of Canada. In the 2015 MPS, 30% of centres reported that although there were notable ethno-cultural minorities in their catchment areas, these groups were not well represented in their centre population.

3.3.3 Programming at OACs

The 2015 MPS indicated that most centres (94%) conducted programming in English, 11% in French and 20% in other languages (Sheppard et al., 2016). Many offered programs in the evenings (73%) and on weekends (65%). Most offered activities such as group games (96%), fitness (95%), lectures and seminars (91%), arts & crafts (88%), skill building courses (84%), congregate dining (82%), and day trips (81%). Health services offered most often were: health promotion (73%), foot care (60%), falls prevention (51%), elder abuse prevention (43%) and chronic disease management (42%).

The 2015 MPS findings revealed that program and service offerings varied by centre characteristics. For instance, municipally-run centres were more likely to offer physical activities, while non-profits were more likely to offer ethno-cultural programming, and programming in other languages. Small centres, meanwhile, were less likely to offer physical activity, overnight trips, and intergenerational programing. Service provision was also influenced by centre characteristics: large centres were more likely to offer foot care and hearing clinics, while small centres were less likely to offer blood pressure clinics. Similarly, non-profits were more likely to offer alternative health care and falls prevention compared to municipal centres. Stand-alone status (i.e., stand-alone versus part of another organization) was not found to impact program or service provision at centres.

3.3.4 Patterns of Participation at OACs

Older adult centres tended to attract long-term members: about half of participating seniors had attended their centre for more than six years and nearly a quarter for more than 10 years (OACAO, 2010, 2013). With respect to frequency of attendance, half the participants came to the centre between two and three (OACAO, 2013) or two to four days per week (OACAO, 2010);

about 10% attended once a month or less (OACAO, 2010, 2013). Over two-thirds of members reportedly spent between two and four hours at the centre each visit (OACAO, 2010).

3.3.5 Satisfaction and Perceived Benefits of Participation

In the BBTP (OACAO, 2010), OAC users generally considered membership costs and program fees to be reasonable (61% and 68% respectively). A quarter to a third considered program and membership fees inexpensive (25% and 37%, respectively; OACAO, 2010). Only 2% thought membership fees were too expensive.

Centre location, accessibility, maintenance, equipment, and hours of operation received the highest satisfaction ratings (8.5 or higher on a 10-point scale). Quantity, quality and timing of recreation and health programs, meanwhile, received ratings of 8 out of 10 or higher. Parking, program space, and building signage received the lowest ratings from 7.2 to 8.2 out of 10.

Most seniors in the BBTP agreed (i.e., average rating between 4 and 4.5 on a 5-point scale) that coming to the centre allowed them to socialize with people and make fulfilling friendships; ratings were slightly higher for females versus males.

The EPC Impact Survey (OACAO, 2013), meanwhile, found that over 80% agreed or strongly agreed that as a result of attending the centre, they felt more connected to other people and were more socially active. Two-thirds also indicated that attending the centre helped them have a more positive attitude, improved their health, allowed them to be more physically active, and more confident. However, only half of respondents indicated that participating at the centre gave them knowledge and skills to better manage their health and chronic diseases.

3.4 Summary and Implications

As described in this chapter, the OACAO has conducted several province-wide projects that have shed light on the characteristics of senior centres, the types of programs offered at

centres, the characteristics of seniors who use those programs, and the perceived benefits of attendance and participation. One limitation that must be acknowledged is that not all older adult or senior centres in Ontario are members of the OACAO. Currently there are 303 Seniors Active Living Centres in the province, 177 of which are members of the OACAO. Unfortunately, it is not known how many other senior centres there are in Ontario.

Prior to modernizing and expanding the EPC program (into what became the Seniors Active Living Centre program), Ontario Seniors' Secretariat conducted a review in 2015 of the 263 funded organizations (149 of which were members of the OACAO at the time). Comparisons of all OACAO member centres (including those without EPC funding) to findings from the OSS EPC review suggest that differences between groups with respect to participants serviced and programs offered are minimal, as both report serving predominately female seniors aged 65 to 85, and offer a variety of recreation programs including fitness, cards, music, and special events. Furthermore, staffing and volunteer levels are similar, with the OACAO and the EPC review noting that centres have a range of full- and part-time staff and rely heavily on volunteer support. Thus, findings indicate that OACAO projects are representative of those receiving EPC funding in general; however, there may be other older adult or senior centres in the province that do not receive provincial funding and are also not members of the OACAO.

The BBTP surveyed both users (i.e., members) and non-users (i.e., non-members) of OACs. While similarities and differences between these samples were described in the ensuing report (see **Section 3.3.6**), these observations were purely descriptive (e.g., observed differences in frequency); no statistical comparisons were made by the BBTP team. Furthermore, approximately 17% of the non-user sample reported attending and/or volunteering at another older adult centre, indicating that the sample and ensuing descriptive results were not reflective

of true non-users. New analyses are needed to remove those who attend or volunteer at a different older adult centre from the non-user sample and compare users and non-users to determine if observed differences noted by the BBTP team are significant and meaningful.

The BBTP collected a wide range of data on sociodemographic characteristics and centre participation patterns, including membership length, frequency of attendance, hours per visit, volunteerism, program participation, and transportation to the centre; however, findings were largely presented in separate sections (i.e., one section on sociodemographic characteristics and another on centre participation and volunteerism) with very few attempts to compare patterns of participation in relation to specific sociodemographic characteristics. Among the comparisons that were made, most focused membership length and transportation to the centre among different age groups and locations (i.e., urban, suburban, rural); all comparisons were descriptive in nature, with no statistical comparisons made to identify the factors that impacted centre participation patterns. Additional analysis of this dataset is warranted to better understand participation patterns among centre users, including the socio-demographic and health characteristics that impact usage.

One limitation of the surveys conducted by the OACAO is that centre and program attendance was self-reported. The BBTP is further limited by the fact that centre participation was measured as categorical variables with response options encompassing a range of participation (e.g., 2-4 hours per visit or 2-4 days per week). Ideally, this data would be collected and reported by centre staff/volunteers or program instructors and reflect actual participation. Although the MC-GEP does not have data for centre-level attendance records, the travel dairies show actual attendance at the centre and in specific programs as reported by participants, providing more accurate insight into centre participation patterns.

The majority of OACAO projects that examined benefits of participation (e.g., the EPC Impact Survey) did so using retrospective reports of perceived benefits, which are subject to recall (memory) bias, social desirability bias, and the effects of cognitive dissonance (Myers, 1999). Use of standardized outcomes measures are essential for demonstrating benefits or impacts of participation. The MC-GEP introduced centres to various standardized outcome measures related to social and physical health. As this data was collected at one point in time among those who already used the centre, it is not possible to assess benefits; however, the data will provide a profile of centre members on the various outcome measures and shed light on how factors related to social and physical health influence centre participation patterns.

Chapter 4: Methods

This chapter describes the overall study rationale and objectives. As this project consisted of secondary analyses of two databases, each sub-study is described separately, including the objectives, study protocol and data collection procedures, and data handling and analyses.

4.1 Study Rationale and Objectives

As described in **Chapter 1**, participation in recreation and social activities promotes physical and mental well-being in older adulthood and is an important component of successful aging. Older adult centres (OACs) are community focal points for providing recreation (e.g., exercise, gardening, crafts) and opportunities for socialization for older adults. While there has been a substantial body of research carried out at senior centres (**Chapter 2**), almost all of it has been conducted in the United States, predominately in the 1980's and 1990's; very few studies have been conducted in a Canadian context, and only one in Ontario-based centres.

While advocacy agencies like the OACAO strongly believe that OACs play a vital role in the lives of participating seniors, research is needed to examine how seniors use OACs to meet their needs relative to programs/services offered by other community-based organizations. Therefore, **the overarching aim of the present project was to explore the factors associated with recreation and social participation at OACs in Ontario.** By comparing the characteristics of OAC users and non-users (first database) together with examining patterns of use and out-of-home travel (second database), this project addressedthe extent to which OACs are a focal point for recreation and social engagement among Ontario seniors.

This dissertation project constituted secondary analyses of two datasets collected and owned by the OACAO: 1) the Building Bridges to Tomorrow Project (BBTP) database; and 2)

the Multi-Centre Guided Evaluation Project (MC-GEP) database. The specific objectives and detailed methodology for each project are provided below.

4.2 Building Bridges to Tomorrow Project Database

As described in **Chapter 3**, the BBTP was a province-wide survey conducted from 2008-2009 with OAC members (referred to as "users") and non-members (referred to as "non-users"). A brief overview of objectives and methodology was provided in **Section 3.2.2**. While the OACAO produced a report graphically depicting survey responses (OACAO, 2010), results were solely descriptive, and no statistical analyses were reported. Further analysis of this rich dataset, which was beyond the scope of the original project, is warranted. The primary objectives of this secondary analysis were to:

1) Compare users and non-users; and
2) Examine OAC participation rates (frequency of attendance, hours per visit, and activity engagement) and compare frequent versus infrequent users.

The following sections outline the centre and participant recruitment strategies, data collection processes and materials, as well as data handling and analyses. Information on the methodology was obtained from the final BBTP report as well as through discussions with the OACAO Executive Director and the leader of the BBPT team.

4.2.1 Senior Centre Recruitment and Training

An expression of interest form was circulated to the OACAO membership using their listserv, inviting them to participate in the BBTP. The form requested information pertaining to type of centre (i.e., municipal or non-profit), total membership size, annual operating budget, number of volunteers, and types of programs.

A total of 24 centres completed the project. Three other centres expressed interest, but ultimately did not participate due to time constraints. As an incentive, all participating centres were given a database with their centre's data and a report containing a descriptive profile of their members.

Centres were responsible for recruiting volunteers to collect the data. Each volunteer was asked to administer 10 to 15 questionnaires (estimated to take about 5 to 7 hours in total). The number of volunteers required by each centre was based on the amount of data they were asked to collect (see **Section 4.2.2** below). A total of 325 volunteers across the 24 centres were involved in the project. All volunteers attended a six-hour, in-person training session delivered at their centre by two members of the BBPT team. Each session provided an overview of the: (1) BBPT; (2) sample recruitment; (3) user and non-user questionnaires; and (4) interview techniques. Attendees were also given an opportunity to practice conducting the interviews to promote confidence and consistency in data collection.

4.2.2 Sample Size Calculations and Participant Recruitment

The desired sample size of users and non-users was calculated for each centre. For users, sample size calculations were based on the total number of members at the centre, using a 95% confidence level and 7% confidence interval. The non-user sample size was set as 20% of the centre user sample. For example, a centre with a membership of 1,400 older adults was asked to recruit a sample of 172 users and 34 non-users.

Centre volunteers were responsible for recruiting convenience samples of users and non-users. There was no standardized recruitment strategy; volunteers used various methods they thought would work best at their centre. Common strategies were promoting the survey through flyers at the front desk and making announcements in programs. Volunteers were encouraged to

recruit a diverse group of users for the project, including both younger and older seniors, men and women, as well as seniors who attended different programs and on different days of the week. For non-users, volunteers used word of mouth and snowball sampling to identify older adults, especially baby boomers, who did not attend their OAC. Volunteers typically recruited friends, colleagues and seniors from their condo or apartment building. Volunteers also recruited through other organizations such as retired teachers' associations, or clubs/volunteer groups.

4.2.3 Data Collection Procedures and Materials

4.2.3.1 Consent and Confidentiality

Each participant was given an information letter that outlined the purpose of the BBPT and how their data would be used. Participants were informed that all data would be kept confidential, accessible only to the OACAO and associated research staff. Participants were also told they could skip any question and/or terminate the interview at any time. Upon completion, each survey was placed into a sealed envelope. The information letters for users and non-users are presented in **Appendix C.**

4.2.3.2 Centre User and Non-User Questionnaires

The centre user and non-user questionnaires were developed by the BBPT team. First, they agreed on the types of information they needed to address their primary research questions. Next, they identified best practice guidelines on designing surveys as well as examples of similar questions. Prior to finalizing the surveys, members of the OACAO board of directors was asked to review. As there was one bilingual centre participating in the project, both surveys were translated into French.

The centre user questionnaire (see **Appendix C**) contained 57 questions that examined:

- Attendance at the centre and other community organizations (10 questions);

- Participation in and satisfaction with centre recreation and health programs (9 questions);
- Volunteerism at the centre (5 questions);
- Satisfaction with the centre, including cost, infrastructure, and staff (7 questions);
- Motivations for attending the centre (1 question);
- Health including health status and how centre has impacted health (8 questions);
- Demographic characteristics such as sex, living arrangements, and income (17 questions).

The non-user questionnaire (**Appendix C**) contained 38 questions that examined:

- Recreation and leisure needs, including participation in community-based organizations, and volunteerism (11 questions);
- Perceptions of OACs (4 questions);
- Motivations for leisure participation (1 question);
- Health including health status and how leisure participation impacts health (6 questions);
- Demographic characteristics identical to those asked in the user-survey (16 questions).

4.2.3.3 Data Collection Process

Questionnaires were administered via in-person interviews in which the trained volunteer read the questions and response options out loud. As several questions on both surveys used 10-point rating scales, interviewers were given a laminated copy of the rating scale to assist respondents. Interviews took place in a quiet area at the centre. Some volunteers scheduled appointments with participants ahead of time, while others were more impromptu (for example, participants were approached after programs). Interviews with centre users took about 30 minutes, while those with non-users took about 15 minutes.

Data collection took place over a six-month period (2008-2009); each centre took about a month to collect their data. In total, 2,412 OAC users (i.e., members) and 680 non-users (i.e.,

non-members) from seven OACAO regions completed the BBTP surveys. These numbers differ slightly than those reported in the BBTP report due to the fact that the report excluded 58 users and included 12 duplicates in the non-user sample[1].

4.2.4 Data Handling and Analysis

The centre user and non-user data was coded by the BBPT team and entered into two separate SPSS databases. A centre identification number (from 1 to 24) was assigned to each participant to identify respondents from the same centre. A combined database of users and non-users was created by the present author to directly compare these two groups.

The following sections describe the data analysis for each of the stated objectives in **Section 4.2**. All analyses were conducted using SPSS Version 25. The matrix in **Appendix D** lists the variables and data sources (i.e., survey questions) that were examined for each of the study questions.

4.2.4.1 Comparison of OAC Users and Non-Users

Centre users and non-users were compared with respect to: (1) demographic characteristics; (2) health; and (3) community participation, including volunteerism and use of other community facilities. Comparisons were made using appropriate chi-squared tests (for categorical variables) or independent samples t-tests (for continuous variables). Comparisons were limited to questions that were similar in both surveys. Variables showing significant bivariate associationswere entered into a hierarchical logistic regression analysis to identify factors that predicted general participation in an OAC (i.e., yes/no). The first step included demographic characteristics; the second step added health characteristics, and the final step

[1] BBTP Report indicated 2354 users and 692 non-users.

included community participation variables. Prior to running the regression, multicollinearity was assessed, and significant outliers/influential data points were examined for removal.

Mixed-methods were used to explore non-user perceptions of OACs, including possible interest in future participation. Non-users were asked to describe the image that pops into mind when they think of an older adult or senior centre, and a content analysis (Sandelowski, 2000) was conducted to examine these perceptions. To become familiar with the data, all comments were read and re-read. Next, initial codes were generated by categorizing the data into topic areas (i.e., what senior centres' are, who attends, and what people do there); within each topic area, subthemes were identified. Interest in future participation at a centre was examined in relation to participant characteristics (e.g., demographic and health characteristics) using appropriate chi-squared tests (for categorical variables) or independent samples t-tests (for continuous variables). Significant findings at the univariate level were entered into a logistic regression predicting interest in future attendance.

4.2.4.2 Comparison of Frequent and Infrequent Users

Centre participation was examined as a function of frequency of attendance, hours per visit, hours per week, program participation, volunteerism, and interest in attending more with better transportation. For each indicator of participation, users and non-users were compared on: (1) demographic characteristics; (2) health; (3) community participation (e.g., use of other community facilities); and (4) transportation. Comparisons with categorical variables were examined using chi-squared tests, while comparisons with continuous variables were examined using independent samples t-tests or one-way analysis of variance (ANOVA) with pairwise comparisons using a Bonferroni correction. Factors showing significant associations were used to build binomial or multinomial logistic regression models that predicted higher levels of

participation, with separate analyses for frequency of attendance, hours per visit, hours per week, and recreation program preference. Prior to completing the regression analyses, multicollinearity was assessed, and significant outliers/influential data points were examined for removal.

4.3 Multi-Centre Guided Evaluation Project Database

As described in **Chapter 3,** the MC-GEP examined the feasibility and acceptability of centre-driven strategies for sample recruitment and data collection, as well as the administration of various tools tailored for OACs (e.g., common BQ) and standardized outcome measures. While participating centres received a descriptive summary of their data, analysis of the data across centres was beyond the scope and timeline of the PGP project. Therefore, the primary objectives of this secondary analysis across centres, were to:

1) Profile centre users with respect to demographic and health characteristics, as well as indicators of well-being and mobility;
2) Characterize the out-of-home mobility and activity patterns of OAC users; and
3) Identify characteristics associated with actual OAC participation.

4.3.1 Senior Centre Recruitment

Two 30-minute recruitment webinars were hosted in Fall 2016 with 12 members of the OACAO board of directors and the PGP Project Advisory Committee. Additional recruitment occurred during the 2017 OACAO Intermediate Evaluation Training Workshop with 14 participants. All 26 individuals were affiliated with an OAC in some capacity (e.g., managers, staff, board members). The pitch included the rationale for the project, target sample size and possible recruitment strategies, as well as a detailed description of the data collection tools.

A total of 14 centres expressed interest in the project (nine from the webinars and five from the workshop). Two centres later withdrew due to recruitment challenges and a lack of staff time

to devote to data collection. Therefore, data was collected for a total of 12 centres located across Ontario. Similar to the BBPT, participating centres were given a database with their centre's data, as well as a profile of their membership in the form of an infographic.

4.3.2 Participant Recruitment

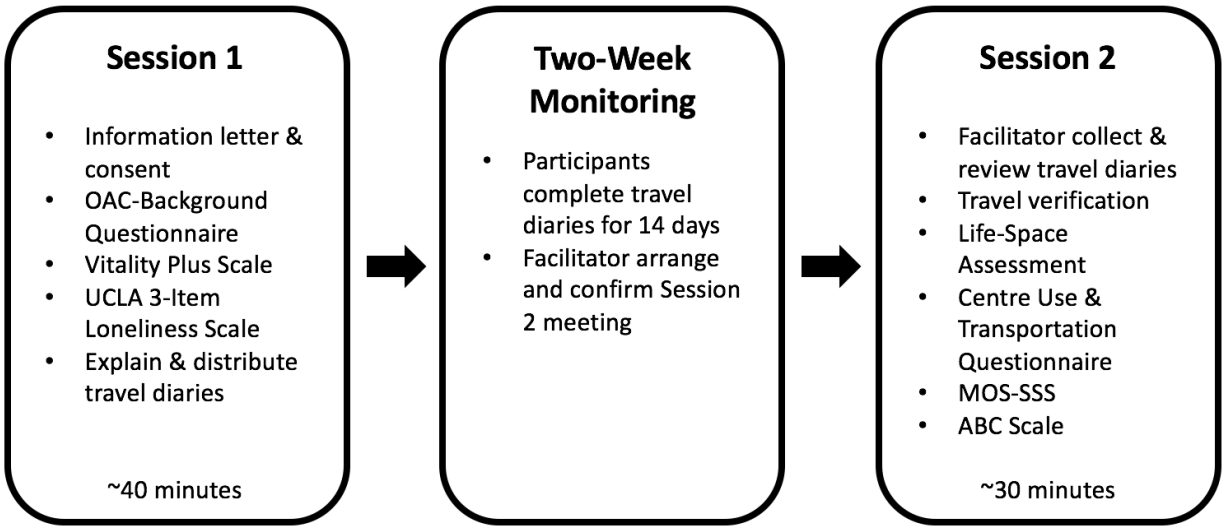
Each centre was asked to recruit a convenience sample of at least 20 older adults. They were encouraged use strategies they thought would be effective, including flyers, word-of-mouth, and/or announcements at membership meetings or classes. Centres were instructed to recruit only those who had been attending for at least six months (to allow time to get acquainted with the staff, volunteers and programming), and to aim for a mix of younger and older seniors, men and women, as well as those who attended on different days of the week and participated in different programs to increase sample diversity.

4.3.3 Data Collection Protocol and Materials

Project facilitators (usually the program coordinator or manager) were given a Facilitator's Guide that provided detailed information on the study protocol, recruitment tips, guidelines for informed consent, and instructions for administering each of the data collection instruments.

Figure 4.1 illustrates the three-step data collection protocol. There were two in-person sessions scheduled approximately two weeks apart, with a monitoring period to collect real time, daily travel data in-between. Sessions one and two both took place at a quiet place in the centre (e.g., board room or multi-purpose room) and were held in small group formats. Data collection began in November 2016 and ended in May 2017; each centre took approximately one month to collect their data.

Figure 4.1 MC-GEP Data Collection Protocol



OAC = Older adult centre; MOS-SSS = Medical Outcomes Study Social Support Survey; ABC Scale = Activities-specific Balance Confidence Scale.

4.3.3.1 Session 1

The first session took approximately 40 minutes. Each participant was given an information letter (similar to that used in the BBPT) that outlined the purpose of the project as well as information on confidentiality and how their data would be used. Participants were then asked to complete, in order, the OAC-BQ, the VPS, and the UCLA 3-item loneliness scale (see **Appendix E**). All measures were self-completed; however, the facilitator was available as needed. Following the completion of these tools, the travel diaries were described, and the facilitator reviewed the examples and instructions. Participants were encouraged to begin the travel diaries on the day of the initial meeting.

OAC Background Questionnaire: As described in **Section 3.2.4.3,** the OAC-BQ was one of the products developed and pilot tested in the PGP project. The OAC-BQ consisted of 25 questions covering: (1) use of the centre; (2) activities outside the centre; (3) health; and (4) demographics. The fifth section for new members was not administered, as all GEP participants were members at their centre for at least 6 months.

Vitality Plus Scale: The VPS is a 10-item measure of psychophysical well-being, which is primarily influenced by level of physical activity/inactivity (Myers et al., 1999). Items included things such as sleep, energy levels, and appetite, and were scored on a five-point likert scale. Scores ranged from 10 to 50, with higher scores represent greater well-being. As per the developer's instructions, total scores were calculated only for those who answered at least seven of the 10 items; for those who skipped certain items, participants' mean score was substituted for up to three missing values. The VPS has shown excellent test re-test reliability (ICC = 0.87), and strong associations with measures of physical functioning, including walking speed (r = .43), performance on the Timed-Up-and Go (TUG; r = -.58), and functional subscale scores from the SF-36 (r = -.65, p < .001; Myers, 1999).

UCLA 3-item Loneliness Scale: The UCLA 3-item Loneliness Scale was developed through exploratory and confirmatory factor analysis of the 20-item revised UCLA Loneliness Scale (Hughes, Waite, Hawkley, & Cacioppo, 2004). The selected items examine how often someone felt a lack of companionship, left-out, and isolated from others. Items were scored on a three-point likert scale (hardly ever, some of the time, and often); scores range from three to nine, where higher scores indicate greater loneliness. Steptoe and colleagues (2013) classified Scores between three and five as average or low loneliness, and scores of six or greater as high loneliness. The 3-item scale has been shown to have good internal consistency (alpha = 0.72), and scores have been associated with depression, marital status, living arrangements, volunteerism all in the expected direction (i.e., good convergent validity).

4.3.3.2 Travel Monitoring Period

A two-week diary was used to document the travel patterns of OAC participants. Similar travel diaries have been used in prior studies with seniors to examine the role of driving in overall travel patterns (Gooderham, 2014; Sousa, 2014).

The materials used for this study (i.e., template, instructions, and examples) can be found in **Appendix F.** For 14 consecutive days, participants were asked to document each trip they made outside of their home (excluding yard work or taking out the garage). For each trip, participants recorded the purpose (e.g., shop for groceries, attend the OAC), mode of travel, distance to their destination, the time they left and returned home, as well as the general weather conditions. For trips to the OAC, they were asked to describe the activities they took part in and approximate times they arrived and/or left the centre if they made multiple stops. Travel diary materials were distributed at the end of session one and collected at the beginning of session two.

4.3.3.3 Session 2 Materials and Instruments

The second session (see **Appendix G**) was completed after the two-week monitoring period and took approximately 45 minutes. At the beginning, a staff member reviewed each diary while participants filled out a four-item verification form to determine: (1) if they had any difficulties completing the diary; (2) if their travel patterns over the past two weeks were typical; (3) if they usually used the modes of travel described in their diary; and (4) if there were any special circumstances (e.g., events, illnesses) over the past two weeks that may have altered their travel patterns. After participants submitted their diaries, they completed several additional measures and questionnaires, including the Life-Space Assessment, Transportation & Centre Use Questionnaire, Medical Outcomes Study Social Support Scale, and the Activities-specific Balance Confidence Scale.

Life-Space Assessment: The life space assessment (LSA; Baker et al., 2003) measures self-reported movement over four weeks throughout five levels of life-space: (1) rooms in the home but outside of the bedroom; (2) areas outside the home such as the porch, or driveway; (3) places in the neighbourhood; (4) places outside the neighbourhood but within the town; and (5) places beyond town. For each level, respondents report how often they achieved it and whether they relied on a mobility device or another person (Baker et al., 2003).

Assistance from mobility equipment included using a cane or walker, wheel chair or scooter, ramp or lift, even if the devices are used only "sometimes" or "just in case." Examples of personal assistance included help getting out of bed or having someone to drive them. If the individual *could* do it on their own if help was not available, they would be considered independent for that level.

The developers recommend that respondents use their own interpretation of 'neighbourhood' and 'town'; however, they offered the following guidelines: 'within one's neighbourhood' represents areas within one half of a mile of home (60% of older adults agreed with this definition); 'within one's town' represents areas outside one's neighbourhood but within 10 miles of home; and 'outside one's town' represents areas 10 or more miles from home (92.5% of older adults agreed with definition; Sawyer, Allman, & Bodner, 2008).

As per the developer's instructions, responses were corrected for inconsistencies related to distance travelled and the use of equipment or personal assistance. For instance, if someone noted they travel beyond their neighbourhood daily, by definition, they achieve earlier levels of life-space daily as well. Similarly, if someone uses equipment to achieve a lower level of life-space, they require that equipment to achieve all subsequent levels.

The most widely-used method for scoring the LSA is the composite life-space (LS-C) score (e.g., Baker et al., 2003). O It is computed by summing the multiplication of the life-space achieved (1-5) by frequency of attainment (1 = less than 1x per week; 2 = 1-3x per week; 3 = 4-6x per week; 4 = daily) and by the degree of independence (2 if independent; 1.5 if equipment needed, and 1 if personal assistance needed). Based on these scores, can be classified as restricted (i.e., movements confined to the neighbourhood, LS-C < 60) or unrestricted (i.e., movements extend beyond the neighbourhood, LS-C > 60). Generally, these two scores have been shown to be reliable and the LSA has demonstrated good test re-test reliability (ICC = 0.96), with strong associations with measures of physical functioning, functional abilities, cognition, and health (see **Section 1.3** for review).

For the MC-GEP, the original LSA was modified in two ways. First, respondents were asked to report their movements over the past two weeks (as opposed to four weeks) to reduce recall bias and correspond with the timeframe for the travel diaries. Secondly, unlike in the original, for this study, respondents were asked to specify the normal mode of transport they used to travel through life-space zones outside of the home (i.e., zones three to five). The modified LSA used in the current project is shown in **Appendix G.**

Transportation & Centre Use Questionnaire: This questionnaire was designed by the PGP project team to capture areas of interest that were not included in the background questionnaire such as: driving status, centre participation patterns, centre friendships, and infrastructure issues (e.g., parking). Centre participation and infrastructure questions were adapted from the BBTP survey, while support questions were drawn from previous research on senior centres (e.g., Aday et al., 2006). Given the limitations of the categorical data collected in the BBTP survey, attention was paid to quantify centre use.

Medical Outcomes Study Social Support Scale: The Medical Outcomes Study Social Support Scale (MOS-SSS), developed by Sherbourne & Stewart (1991), consists of 19 items that examine the functional aspects of social support, including (1) emotional/informational support; (2) affectionate support; (3) positive social interactions; and (4) tangible support. The final item of the scale represents an overall functional social support index. Although the scale was not developed specifically for older adults, it was designed to be brief and easy to understand. Research by Statistics Canada with over 3,000 Canadian adults aged 58 to 99 found that the scale displayed high Cronbach's alphas (all subscales greater than 0.9) and that the four factor model described above was an adequate fit for the data (Robitaille, Orpana, & McIntosh, 2011).

For the MC-GEP, three of the four subscales (i.e., emotional/information support, affectionate support and positive social interaction) and the overall functional social support item were used. The tangible support subscale (four items, measuring support for tasks such as meal preparation or household chores) was not considered relevant by the PGP advisory committee, as most centres do not offer these types of support services. The 15-item version of used in the GEP is shown in **Appendix G.** For each item, participants rated how often (on a 5-point rating scale) each type of support was available to them at the centre if they needed it. Higher scores indicate higher levels of social support.

As per the developer's instructions, five different scores were calculated: (1) an emotional or information support score (8 items); (2) an affectionate support score (3 items); (3) a positive interactions score (3 items); (4) a functional social support index (1 item); and (5) an overall support index (average score across all items). For each, average scores were computed and converted to a 0-100 scale using the following formula (Sherbourne & Stewart, 1991):

$$100 \times \frac{(\text{observed score} - \text{minimum possible score})}{(\text{maximum possible score} - \text{minimum possible score})}$$

Scores were computed if 70% of the items in the sub-scale or the overall measure were rated. Individual mean scores were substituted when items were skipped; the exception was the single item on functional support (where no score was given if the item was skipped).

Activities-Specific Balance Confidence (ABC) Scale: The ABC scale asks individuals to rate their level of confidence in their ability to maintain their balance in 16 different balance challenging situations (Myers, Fletcher, Myers, & Sherk, 1998; Myers et al., 1996; Powell & Myers, 1995). If respondents usually use a mobility aid or assistance from others in specific situations, they were instructed to rate their confidence as if they were using those supports.

The original ABC scale asked participants to rate their level of confidence on an 11-point rating scale by writing in the corresponding number from 0% to 100%. Rasch analysis, however, has shown that collapsing responses into five categories (0%, 25%, 50%, 75%, 100%) yielded better probability curves (Arnadottir, Lundin-Olsson, Gunnarsdottir, & Fisher, 2010; Franchignoni, Giordano, Ronconi, Rabini, & Ferriero, 2014; Sakakibara, Miller, & Backman, 2011). Further research in patients with Parkinson's disease found similar results with Rasch analysis and demonstrated that a 5-point checklist format had good test-retest reliability and was easier for older adults to complete (Crizzle, Myers, Roy, & Almeida, 2015). Further work by the developer has led to minor wording changes to some of the items to improve clarity.

The present study used the modified 16-item ABC scale with the 5-point rating checklist. Average ratings therefore ranged from 0 to 100, with higher scores indicating better balance confidence. Following the developer's instructions, total scores were computed only if at least 12 out of the 16 items were answered.

4.3.3.4 Centre Follow-Up Interview

Telephone interviews by the present author were conducted with the individual at each centre who facilitated data collection. Given the original purpose of the MC-GEP, interviews also solicited feedback on recruitment strategies, data collection protocols, strategies to foster buy-in among participants, and the perceived utility of each outcome measure for future use. Individuals also provided some background information on their centre, including operating hours, membership size, daily attendance, staff and volunteer levels, membership fees, available facilities, parking, and transportation; activity calendars were also provided.

4.3.4 Translation of Data Collection Materials

One centre served both English-speaking and Mandarin-speaking older adults. Therefore, a bilingual staff member at the centre translated all participant materials using a translation-back translation process and the final translations were checked by a second staff member. The OACAO provided a small stipend to support the translation process.

4.3.5 Data Handling and Analysis

Data collected at each centre was sent to the OACAO, who assigned unique identifiers to each centre and participant. The present author then cleaned, coded, and entered the data into a database using SPSS Version 25 for the secondary analysis.

The following sections describe the data analysis for each of the stated objectives in **Section 4.3**. The matrix in **Appendix H** lists the variables and data sources that were examined for each of the study questions concerning the MC-GEP dataset.

4.3.5.1 Profile OAC Users on Indicators of Well-being and Mobility

Data was examined to create a profile of OAC users with respect to indicators of well-being (i.e., through scores on the VPS and UCLA Loneliness Scale) and mobility (i.e., through

scores on the LSA and the ABC Scale). Scores on these standardized measures were examined in relation to participant characteristics and health indicators.

4.3.5.2 Characterize Out-of-Home Mobility Patterns of Centre Users

While the LSA scores provided an overall indicator of out-of-home mobility, the travel diaries specifically examined: (1) number of trips; (2) purpose of trips (see below); (3) time spent out-of-home; (4) mode of transportation; and (5) distance from home.

Each activity listed under trip purpose was analyzed according to two coding systems: the first system classified trip purposes according to 24 specific activities outlined in **Appendix I**; the second system collapsed trip purposes into seven broad categories including: recreation, informal social gatherings, errands, volunteering/helping others, medical appointments, out-of-town travel, and other. Each category was counted once per trip, but multiple categories were counted if the trip had multiple purposes. Some examples are shown in **Table 4.1**.

Table 4.1 Examples of Coding Trip Purposes

	Activities	**Code – System 1**	**Code – System 2**
Trip1	- Centre for aerobics - Post office - Home hardware - Book club	- Centre - Household Errands - Club/Group	- Recreation - Errands
Trip 2	- Hair appointment - Lunch with friends at restaurant - Grocery Store	- Personal errand - Restaurant - Household Errand	- Errands - Informal social gatherings
Trip 3	- Library - Visit art gallery - Grocery Store	- Recreation facility - Art/Culture Event - Household errands	- Recreation - Errands

4.3.5.3 Identify Characteristics Associated with Actual OAC Participation

Data from the Transportation and Centre Usage Questionnaire was used to create a general profile of centre participation patterns, while the travel diary data (averaged to one week) provided insight to actual centre participation. Data from the travel diaries was examined with

respect to number of visits to the OAC and hours spent there per visit and per week, and activity participation. Measures of centre participation were examined in relation to demographic and health characteristics to identify factors that were associated more frequent participation.

Social connections and support at OACs were also examined, including centre friendships and the types of activities they do with these friends outside of the centre, as well as perceived availability of social support. Social support was examined in relation to demographic and health characteristics, as well as with centre participation.

Several indicators were used to explore the different ways the centre could serve as the primary place for social participation, including: (1) whether participants reported the centre as their primary place (yes/no); and (2) the extent to which the centre was a focal point in out-of-home travel (measured via the travel diaries). Indicators were examined in relation to personal characteristics (i.e., demographics, health, and community participation) and centre-related variables, including membership length, distance travelled, and perceived social support.

A hierarchical logistic regressions was conducted to identify the characteristics that best predicted whether the centre was a primary place for social engagement; after testing assumptions (including linearity and multicollinearity) and examining significant outliers/influential data points, variables with significant associations (at the univariate level) were examined in the regressions; demographic and health characteristics were entered first, followed by community participation (step 2) and centre-related factors (step 3).

To examine the extent to which the centre is a focal point in out-of-home travel, three separate indicators from the travel diaries were examined: 1) the proportion of trips from home that included the centre; 2) the proportion of time away from home that was spent at the centre; and 3) the proportion of trips for recreation that were to the centre. Separate hierarchical linear

regressions were conducted for each outcome, including only those variables with significant associations at the univariate level; demographic and health characteristics were entered first, followed by community participation (step 2) and centre-related factors (step 3). Prior to carrying out the regressions, assumptions were examined, including linearity (i.e., independent variables are collectively and individually linearly related to the dependent variable), homoscedasticity of residuals (i.e., equal error variances), multicollinearity, normality (i.e., residuals approximately normally distributed), and outliers/influential points.

Chapter 5: Results – Building Bridges to Tomorrow Project

As described in **Chapter 4**, data for the BBTP was collected from 2,412 users and 680 non-users from 24 participating centres across Ontario. This chapter begins with a justification for why specific types of respondents (both users and non-users) were removed from the dataset prior to analysis. Following sample refinement, the characteristics of centre users and non-users, respectively, are presented, and compared. Significant variables were then subjected to regression analyses to examine possible predictors of centre use.

Patterns of centre participation (frequency of attendance, hours per visit, estimated hours per week, recreation participation and centre volunteerism) are then examined to compare frequent and infrequent centre users. This chapter concludes with a mixed-methods exploration of non-user perceptions of older adult centres, including possible interest in future participation. The key findings are shown in the text, while supplemental data can be found in **Appendix J.**

5.1 Sample Exclusions

The final sample of users and non-users, and their regional distribution, is shown below. This section describes how the sample was refined for secondary data analysis.

Table 5.1 Distribution of Centres, Users, and Non-Users by Region (presented as frequency (%) by region).

Region	Centres	Users	Non-Users
Central	7 (29.2%)	723 (32.2%)	146 (27.9%)
Eastern	1 (4.2%)	91 (4.1%)	28 (5.2%)
Golden Horseshoe	5 (20.8%)	559 (25%)	107 (19.8%)
Grand River	2 (8.3%)	183 (8.2%)	31 (5.7%)
Metro	4 (16.7%)	281 (12.6%)	120 (22.2%)
Northern[1]	2 (8.3%)	137 (6.1%)	25 (4.6%)
South West	3 (12.5%)	262 (11.7%)	81 (15%)
Unknown	---	3 (0.1%)	2 (0.4%)
Total:	**24**	**2,239**	**540**

Note: Data shown represent values after data cleaning.
[1] Two northern regions collapsed

5.1.1 Centre Users

As the primary focus of this dissertation was on regular OAC users, respondents who skipped question 1.2 (frequency of attendance; n=49) were excluded. Related, those who reported attending less than once per month (n=124) were also excluded, as they likely only attended for special events (e.g., Christmas party) or accompanied family or friends. **The total sample of centre users was therefore 2,239**. Comparisons of demographic and health characteristics for those who were included versus excluded are shown in **Appendix J**.

5.1.2 Non-Users

Non-user surveys were completed by 680 respondents at 23 OACs; one northern centre (which only recruited 20 members) did not recruit any non-users. Although these respondents did not attend the specific OAC centre under examination, several noted on the survey that they did attend (Q1.1; n=51) or volunteer (Q1.10; n=49) at another OAC. Twenty-two people reported doing both. These 121 subjects were thus excluded. Furthermore, those aged 50 and under (n=19) were also excluded, since OACs typically have a minimum age requirement over 50. **The sample of non-users was therefore 540**. Comparisons of demographic and health characteristics for those who were included versus excluded are shown in **Appendix J**.

5.2 Centre Users versus Non-Users

Users and non-users are compared on demographic and health characteristics, and community participation and transportation. Findings from the univariate comparisons were then used to build a hierarchical regression model predicting senior centre participation.

5.2.1 Demographic and Health Characteristics

Demographic and health characteristics for users and non-users are presented in **Table 5.2**. Centre users were significantly older ($\chi^2(3) = 140.445$, $p < .001$), had proportionally more women than men ($\chi^2(1) = 18.463$, $p < .001$) and were more likely to live alone ($\chi^2(2) = 18.198$, $p < .001$) compared to non-users. Centre users were more likely to be high school graduates, while non-users were more often post-secondary graduates ($\chi^2(2) = 18.395$, $p < .001$). Relatedly, centre users were more likely to be low income, while non-users were more likely to earn over $70,000 per year ($\chi^2(2) = 35.138$, $p < .001$). Non-users were also more likely to be working ($\chi^2(1) = 163.818$, $p < .001$). While residential location did not impact centre participation, housing was significant: users were more likely to live in an apartment or condo while non-users were more likely to live in a house ($\chi^2(2) = 7.433$, $p = .024$).

Overall, users and non-users were in relatively good health with an average of two chronic conditions (2.15 ± 1.64, range 0 – 9 for users and 2.10 ± 1.70, range 0 – 7 for non-users); in both groups, arthritis (44% and 42.6%) and high blood pressure (41.4% and 39.6%) were most common. While average self-rated health was similar (3.90 ± 0.73 for users and 3.80 ± 0.78 for non-users), users were more likely to rate their health as good or excellent, while non-users were more likely to rate their health as poor or fair ($\chi^2(1) = 5.961$, $p = .015$). For physical activity levels (average rating: 3.32 ± 0.78 for users and 3.09 ± 0.86 for non-users), non-users were also more likely to report low to very low levels, while users were more likely to report high or very high levels ($\chi^2(2) = 50.422$, $p < .001$).

Table 5.2 Demographic and Health Characteristics of Centre Users and Non-Users (presented as frequency (%) by category)

	Centre Users (n=2,239)	**Non-Users** (n=540)
Gender***	**n=2,112**	**n=517**
Men	537 (25.4%)	180 (34.8%)
Women	1,575 (74.6%)	337 (65.2%)
Age***	**n=2,148**	**n=523**
51-65	315 (14.7%)	190 (36.3%)
66-75	907 (42.2%)	202 (38.6%)
76-85	747 (34.8%)	107 (20.5%)
86 or older	179 (8%)	24 (4.6%)
Living Arrangements***	**n=2,208**	**n=532**
Alone	916 (41.5%)	172 (32.3%)
Spouse	1,079 (48.9%)	314 (59%)
Other Friends/Family	213 (9.6%)	46 (8.6%)
Highest Education***	**n=2,130**	**n=526**
Less than High School	373 (17.5%)	100 (19%)
High School	873 (41%)	163 (31%)
College or University	884 (41.5%)	263 (50%)
Employment***	**n=2,170**	**n=526**
Retired	1,960 (90.3%)	362 (68.8%)
Working	210 (9.7%)	164 (31.2%)
Annual Income***	**n=1,758**	**n=467**
Under $25,000	457 (26%)	93 (19.9%)
$25,000 - $69,999	1,087 (61.8%)	268 (57.4%)
$70,000 and Over	214 (12.2%)	106 (22.7%)
Residential Location	**n=2,200**	**n=531**
Urban/Suburban area	1,956 (88.9%)	478 (90%)
Rural Area	244 (11.1%)	53 (10%)
Dwelling Type*	**n=2,215**	**n=533**
House	1,419 (64.1%)	373 (70%)
Apartment/Condo	706 (31.9%)	146 (27.4%)
Other (e.g., mobile home)	90 (4.1%)	14 (2.6%)
Self-Rated Health*	**n=2,195**	**n=535**
Very Poor / Poor / Fair	555 (25.3%)	163 (30.5%)
Good / Excellent	1,640 (74.7%)	372 (69.5%)
# Chronic Conditions	2.15 ± 1.64 (0 – 9)	2.10 ± 1.70 (0 – 7)
Physical Activity Level***	**n=2,190**	**n=533**
Very Low / Low	201 (9.2%)	103 (19.3%)
Moderate	1,207 (55.1%)	289 (54.2%)
High / Very high	782 (35.7%)	141 (26.5%)

Note: Missing data indicated by the n's for each variable. Percentages shown by user/non-user group. Significant group differences: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

5.2.2 Community Participation and Transportation

Due to differences in survey questions, direct comparisons between users and non-users were limited. Just under three-quarters of centre users (70.3%) attended another facility in the community (other than their OAC), including church (41% of all users and 61% of those who attended another facility), another older adult centre (17.4% and 25.8% respectively), private clubs (12.9% and 19% respectively) and legions (12.4% and 18.4% respectively). Around 70% of non-users also participated in community-based facilities, including church (26.9% of all non-users and 38.5% of those who attended community facilities), recreation facilities (14.1% and 20.2% respectively), fitness centres (12.8% and 18.3% respectively), and private clubs (10.4% and 14.9% respectively). Users were more likely to attend church ($\chi^2(1) = 44.955$, $p < .001$), and there was no difference in private club usage; however, other comparisons were not possible as the list of facilities was not consistent between surveys.

Twenty percent of users volunteered in their community (outside of their OAC) compared to 50.9% of non-users ($\chi^2(1) = 221.481$, $p < .001$). While non-users identified where and how often they volunteered, centre users were only asked about frequency of volunteerism at their specific centre (not at other community locations), precluding further comparisons.

Non-users (but not centre users) were asked about their level of interest in various recreation programs (see **Table 5.3**), over half desired trips and travel (55.6%) and physical fitness (54.4%); health and wellness, special events, arts, and computers were also popular.

Table 5.3 Interest in Recreation and Leisure Programs among Non-Users (presented as frequency (%) by program type)

Program Type	**Non-Users** (n=540)
No interest in any programs	56 (10.4%)
Physical activity	294 (54.4%)
Arts	202 (37.4%)
Education	173 (32%)

Program Type	**Non-Users** (n=540)
Computers and Technology	201 (37.2%)
Health and Wellness	242 (44.8%)
Special Events	229 (42.4%)
Trips and Travel	300 (55.6%)
Other Programs	28 (5.2%)

While the non-users did not report any information on transportation, centre users reported on how far they lived from their centre, as well as their primary mode of transit. Most users lived close to their centre, with one third living within 2km and only 13% living more than 11km away. The primary mode of transportation to and from the centre was driving oneself (71.8%). Although respondents could check all that apply, nearly 90% (n=1,930) reported one primary mode of transportation. Of these, 72.4% drove, 9.7% walked or biked, 9.4% used public transit, and 8.5% used 'other' transit options, including receiving rides from others (n=77) or using specialized transit services (n=87). **Appendix J** shows the demographic and health profile of centre users by distance travelled to the centre and primary mode of transportation.

5.2.3 Predicting Participation at a Senior Centre

A hierarchical binomial logistic regression was performed to identify the factors that best predicted participation at a senior centre. Only significant findings from the univariate analyses (above) were entered in the model. The final model (see **Table 5.4**) was significant ($\chi^2(18) = 366.366$, $p < .001$), explained 29% of the variance in senior centre participation (Nagelkerke $R^2 = .287$). Those who were over age 66, female, with high school education or greater, earned less than $70,000 per year, were retired, reported good to excellent health, reported moderate to high physical activity levels, and attended church were more likely to be senior centre users. Those who volunteered in the community were less likely to do so.

Table 5.4 Predictors of Older Adult Centre Participation

	Demographic Characteristics		**Demographic and Health Characteristics**		**Demographic and Health Characteristics, Community Participation**	
	OR (95% CI)	***p***	**OR (95% CI)**	***p***	**OR (95% CI)**	***p***
Age *(ref = age 51-65)*						
Age 66-75	**2.39 (1.77 – 3.24)**	**<.001**	**2.23 (1.64 – 3.03)**	**<.001**	**2.07 (1.51 – 2.89)**	**<.001**
Age 76-85	**3.44 (2.38 – 4.98)**	**<.001**	**3.17 (2.18 – 4.61)**	**<.001**	**2.84 (1.92 – 4.20)**	**<.001**
Age 86 or older	**3.14 (1.77 – 5.56)**	**<.001**	**3.39 (1.89 – 6.09)**	**<.001**	**2.76 (1.51 – 5.08)**	**.001**
Gender *(ref = men)*	**1.53 (1.20 – 2.04)**	**.001**	**1.51 (1.15 – 1.98)**	**.003**	**1.39 (1.05 – 1.85)**	**.024**
Living Arrange. *(ref = alone)*						
With Spouse	1.15 (0.86 – 1.55)	.344	1.12 (0.83 – 1.51)	.463	1.01 (0.73 – 1.38)	.973
With Others	1.46 (0.88 – 2.42)	.139	1.43 (0.86 – 2.39)	.171	1.43 (0.84 – 2.46)	.187
Education *(ref = no high school)*						
High School Graduate	**1.86 (1.29 – 2.68)**	**.001**	**1.74 (1.20 – 2.52)**	**.004**	**1.94 (1.32 – 2.86)**	**.001**
Post-Secondary Graduate	**1.86 (0.13 – 2.34)**	**.009**	**1.52 (1.00 – 2.11)**	**.050**	**1.51 (1.03 – 2.22)**	**.036**
Income *(ref = earn > $70,000)*						
Earn $25,000 - $69,999	**1.56 (1.12 – 2.18)**	**.009**	**1.68 (1.20 – 2.36)**	**.003**	**1.61 (1.12 – 2.32)**	**.010**
Earn < $25,000	**1.84 (1.20 – 2.83)**	**.005**	**2.08 (1.34 – 3.21)**	**.001**	**2.20 (1.38 – 3.53)**	**.001**
Work Status *(ref = retired)*	**0.33 (0.24 – 0.47)**	**<.001**	**0.30 (0.22 – 0.41)**	**<.001**	**0.37 (0.23 – 0.44)**	**<.001**
Housing *(ref = house)*						
Apartment/Condo	1.01 (0.75 – 1.33)	.993	1.09 (0.92 – 1.46)	.560	0.98 (0.72 – 1.32)	.827
Other Dwelling	1.52 (0.63 – 3.71)	.350	1.69 (0.70 – 4.10)	.244	1.90 (0.77 – 4.71)	.164
Health Status *(ref = poor)*			**1.52 (0.12 – 2.05)**	**.007**	**1.55 (1.13 – 2.13)**	**.006**
Physical Activity *(ref = low)*						
Moderate			**1.88 (1.30 – 2.72)**	**.001**	**1.76 (1.20 – 2.62)**	**.004**
High			**2.63 (1.71 – 4.04)**	**<.001**	**2.53 (1.62 – 3.96)**	**<.001**
Volunteer *(ref = no)*					**0.23 (0.28 – 0.30)**	**<.001**
Attend Church *(ref = no)*					**1.62 (1.23 – 2.14)**	**.001**
Nagelkerke R^2	.161		.194		.287	

N=1,750

5.3 Patterns of Centre Participation

Centre participation was examined in relation to frequency of attendance, hours per visit, hours per week, recreation program preference, and centre volunteerism. In the following sub-sections, each measure of centre participation is examined in relation to demographic and health characteristics, and community participation and transportation to identify factors that predict more frequent participation.

Table 5.5 presents an overview of centre participation patterns. Respondents tended to be long-term members of their centre, with over half attending for six or more years; only 6% had become members in the past year. Long-term members were more likely to be older ($p < .001$), men ($p = .030$), retired ($p < .001$) and have no post-secondary education ($p = .004$). Long-term membership was also associated with more chronic conditions ($p = .003$).

Half the sample attended their centre two to four times per week and a quarter went once per week. Most (67.5%) attended for two to four hours per visit, for an estimated average of 7.43 ± 5.39 hours per week. Users participated in 2.86 ± 1.68 types of recreation programs and just over half (57.9%) volunteered at their centre.

Spearman rank correlations were used to examine the relationships between centre participation variables (see **Appendix J**). Generally, there were positive but weak associations (all *rho's* < .3) between the variables under study.

Table 5.5 Overview of Centre Participation Patterns among Users (presented as mean ± SD or frequency (%) by category).

	Centre Users (n=2,239)
Length of Membership	**n=2,235**
Less than 1 year	133 (6%)
1-5 years	899 (40.2%)
6-10 years	659 (29.5%)
11+ years	544 (24.3%)
Frequency of Attendance	**n=2,239**
1-3 times per month	241 (10.8%)
Once per week	541 (25.2%)
2-4 times per week	1,274 (56.9%)
5+ times per week	183 (8.2%)
Hours Per Visit	**n=2,225**
Less than 2 hours	390 (17.5%)
2-4 hours	1,502 (67.5%)
5+ hours	333 (15%)
Hours Per Week[1]	**n=2,225**
Frequent Users (≥ 5 hours/week)	1,302 (58.5%)
Infrequent Users (< 5 hours/week)	923 (41.5%)
Average hours/week	7.43 ± 5.40
Recreation Participation	**n=2,239**
# of Recreation Program Types (variety)	2.86 ± 1.68 (0 – 11)
Volunteer at Centre	**n=2,067**
Yes, volunteer at centre	1,197 (57.9%)
No, do not volunteer at centre	870 (42.1%)

[1] Calculated by converting frequency of attendance and hours per week into continuous variables (see Table 5.10)

5.3.1 Frequency of Attendance

First, univariate associations between frequency of attendance and demographic and health characteristics, community participation and transportation are examined. Significant factors were then explored in a multinomial logistic regression predicting frequency of attendance.

5.3.1.1 Associations with Participant Characteristics

Associations with participant characteristics, including demographic and health characteristics, community participation, and transportation are shown in **Table 5.6**. Men attended the least and the most often ($\chi^2(3) = 12.554$, $p = .006$). Those who lived alone or with

other relatives and non-relatives ($\chi^2(6) = 28.878$, $p < .001$) and low-income seniors ($\chi^2(6) = 23.699$, $p = .001$) were more likely to attend daily. Those still working attended only a few times per month ($\chi^2(3) = 11.079$, $p < .011$). Rural dwellers were more likely to attend a few times per month ($\chi^2(3) = 37.989$, $p < .001$) as did those who lived in "other" dwellings ($\chi^2(6) = 27.106$, $p < .001$); those who lived in a house were significantly less likely to attend daily. Those with poor/fair health were more likely to attend only a few times per month ($\chi^2(3) = 10.519$, $p = .015$) while those with high to very high physical activity levels attended multiple times per week ($\chi^2(6) = 17.165$, $p = .009$).

Users who participated in other community facilities were more likely to attend once or twice a month ($\chi^2(3) = 9.872$, $p = .021$), especially if they attend private clubs ($\chi^2(3) = 16.373$, $p = .001$). On the other hand, those attending the legion more likely to attend their centre daily ($\chi^2(3) = 13.071$, $p = .004$). Those who volunteered were also more likely to attend multiple times per week ($\chi^2(3) = 33.155$, $p < .001$). Those living within 2km of the centre were more likely to attend daily, while those living 11+km away tended to visit the centre a few times per month ($\chi^2(6) = 40.463$, $p < .001$). Those who received rides from others or used other forms of transportation (e.g., centre transit) were likely to attend once per week ($\chi^2(9) = 32.324$, $p < .001$).

Table 5.6 Associations between Participant Characteristics and Frequency of Attendance (presented as frequency (%) by category).

	Frequency of Attendance			
	1-3 Times per Month (n=241)	**Once per Week** (n=541)	**2-4 Times Per Week** (n=1,274)	**5+ Times per Week** (n=183)
Gender**	**n=224**	**n=508**	**n=1,211**	**n=169**
Men	72 (13.4%)	131 (24.4%)	280 (52.1%)	54 (10.1%)
Women	152 (9.7%)	377 (23.9%)	931 (59.1%)	115 (7.3%)
Age	**n=237**	**n=507**	**n=1,228**	**n=176**
51-65	40 (12.7%)	75 (23.8%)	175 (55.6%)	25 (7.9%)
66-75	105 (11.6%)	193 (21.3%)	537 (59.2%)	72 (7.9%)
76-85	74 (9.9%)	195 (26.1%)	415 (55.6%)	63 (8.4%)
86 or older	18 (10.1%)	44 (24.6%)	101 (56.4%)	16 (8.9%)
Living Arrangements***	**n=238**	**n=533**	**n=1,257**	**n=180**
Alone	91 (9.9%)	207 (22.6%)	527 (57.5%)	91 (9.9%)
Spouse	137 (12.7%)	279 (25.9%)	599 (55.5%)	64 (5.9%)
Other Friends/Family	10 (4.7%)	47 (22.1%)	131 (61.5%)	25 (11.7%)
Highest Education	**n=228**	**n=509**	**n=1,219**	**n=174**
Less than High School	37 (9.9%)	70 (18.8%)	225 (60.3%)	41 (11%)
High School	92 (10.5%)	224 (25.7%)	493 (56.5%)	64 (7.3%)
College or University	99 (11.2%)	215 (24.3%)	501 (56.7%)	69 (7.8%)
Employment*	**n=234**	**n=522**	**n=1,238**	**n=176**
Retired	198 (10.1%)	475 (24.2%)	1,131 (57.7%)	156 (8%)
Working	36 (17.1%)	47 (22.4%)	107 (51%)	20 (9.5%)
Annual Income**	**n=193**	**n=406**	**n=1,041**	**n=145**
Under $25,000	40 (8.8%)	94 (20.6%)	266 (58.2%)	57 (12.5%)
$25,000 - $69,999	123 (14%)	253 (27.6%)	631 (54.7%)	80 (3.7%)
$70,000 and Over	30 (11.3%)	59 (23.3%)	117 (58%)	8 (7.4%)
Location***	**n=239**	**n=532**	**n=1,251**	**n=178**
Urban/Suburban Area	186 (9.5%)	467 (23.9%)	1140 (58.3%)	163 (8.3%)
Rural Area	53 (21.7%)	65 (26.6%)	111 (45.5%)	15 (6.1%)
Dwelling Type***	**n=241**	**n=534**	**n=1,260**	**n=180**
House	146 (10.3%)	366 (25.8%)	807 (56.9%)	100 (7%)
Apartment/Condo	74 (10.5%)	150 (21.2%)	413 (58.5%)	69 (9.8%)
Other	21 (23.3%)	18 (20%)	40 (44.4%)	11 (12.2%)
Self-Rated Health*	**n=241**	**n=527**	**n=1,274**	**n=179**
Very Poor / Poor / Fair	77 (13.9%)	129 (23.2%)	296 (53.3%)	53 (9.5%)
Good / Excellent	159 (9.7%)	398 (24.3%)	957 (58.4%)	126 (7.7%)
# Chronic Conditions	2.14 ± 1.63	2.10 ± 1.66	2.16 ± 1.63	2.23 ± 1.68
Physical Activity Level**	**n=233**	**n=527**	**n=1,252**	**n=178**
Very Low / Low	20 (10%)	61 (30.3%)	105 (52.2%)	15 (7.5%)
Moderate	145 (12%)	299 (24.8%)	676 (56%)	87 (7.3%)
High / Very High	68 (8.7%)	167 (21.4%)	471 (60.2%)	76 (9.7%)

	Frequency of Attendance			
	1-3 Times per Month (n=241)	**Once per Week** (n=541)	**2-4 Times Per Week** (n=1,274)	**5+ Times per Week** (n=183)
Community Facilities[1,*]	**n=237**	**n=520**	**n=1,222**	**n=178**
Do not attend other facilities	58 (9.1%)	136 (21.3%)	393 (61.4%)	53 (8.3%)
Attend other facilities	179 (11.8%)	384 (25.3%)	829 (54.6%)	125 (8.2%)
Types of Facilities	**n=235**	**n=514**	**n=1,201**	**n=177**
Church	95 (10.5%)	249 (27.5%)	484 (53.4%)	79 (8.7%)
Private Club[**]	47 (16.6%)	79 (27.9%)	141(49.8%)	16 (5.7%)
Legion[**]	29 (10.6%)	59 (21.6%)	147 (53.8%)	38 (13.9%)
Another OAC	53 (13.8%)	92 (24%)	202 (52.6%)	37 (9.6%)
Volunteer in Community	**n=244**	**n=488**	**n=1,156**	**n=170**
Do not volunteer	200 (11.9%)	429 (25.5%)	934 (55.4%)	122 (7.2%)
Volunteer	24 (6.8%)	59 (16.7%)	222 (62.9%)	48 (13.6%)
Distance to Centre[***]	**n=235**	**n=523**	**n=1,240**	**n=179**
< 2 km	78 (10.3%)	159 (20.9%)	432 (56.9%)	90 (11.9%)
2-10 km	106 (9.5%)	280 (25.1%)	658 (58.9%)	73 (6.5%)
11+ km	51 (15.9%)	84 (27.9%)	150 (49.8%)	16 (5.3%)
Primary Transportation[***]	**n=216**	**n=473**	**n=1,081**	**n=160**
Drive Oneself	159 (11.4%)	332 (23.7%)	803 (57.4%)	104 (7.4%)
Public Transit	21 (11.6%)	44 (24.3%)	99 (54.7%)	17 (9.4%)
Walk or Bike	17 (9.1%)	41 (21.9%)	97 (51.9%)	32 (17.1%)
Other Transit	19 (11.6%)	56 (34.1%)	82 (50%)	7 (4.3%)

Significant associations: [*] $p < .05$; [**] $p < .01$; [***] $p < .001$

[1] Refers to participation in a community facility, other than their OAC

5.3.1.2 Predicting Frequency of Attendance

A multinomial logistic regression was conducted to predict more frequent attendance at OAC. Infrequent attendees (those who came only one to three times per month) were used as the reference group, and only variables with significant univariate associations were considered in the model. Overall attendance in other facilities was excluded due to overlap with participation at private clubs and the legion. In the full model (with all significant factors identified in univariate analyses), work status, housing, distance travelled, transportation, self-rated health and physical activity levels were not predictive of attendance frequency; therefore, they were removed to create a more parsimonious model. The final model, shown in **Table 5.7,** was significant ($\chi^2(36) = 157.772$, $p < .001$), and explained 13% of the variance (Nagelkerke $R^2 = 0.133$).

Table 5.7 Predictors of Frequency of Attendance at Older Adult Centres

	Once Per Week		**2 to 4 Times per Week**		**5+ Times per Week**	
	OR (95% CI)	***p***	**OR (95% CI)**	***p***	**OR (95% CI)**	***p***
Gender *(ref = men)*	**1.57 (1.03 – 2.41)**	**.037**	**1.95 (1.32 – 2.88)**	**.001**	1.18 (0.69 – 2.03)	.550
Living Arrangements *(ref = alone)*						
With Spouse	1.15 (0.74 – 1.77)	.538	0.96 (0.65 – 1.43)	.856	**0.63 (0.36 – 1.00)**	**.050**
With Others	3.04 (0.87 – 4.80)	.101	1.78 (0.79 – 3.97)	.161	2.02 (0.77 – 5.31)	.153
Income *(ref =earn > $70,000)*						
Earn $25,000 - $69,999	**0.58 (0.31 – 1.00)**	**.050**	0.76 (0.43 – 1.34)	.345	1.22 (0.47 – 3.16)	.683
Earn < $25,000	0.59 (0.293 – 1.21)	.151	0.73 (0.37 – 1.41)	.345	2.05 (0.73 – 5.72)	.173
Location *(ref = rural)*	**4.43 (2.65 – 7.39)**	**<.001**	**4.79 (3.10 – 7.39)**	**<.001**	**4.03 (1.93 – 8.42)**	**<.001**
Attend Private Clubs *(ref = no)*	0.70 (0.43 – 1.14)	.150	**0.52 (0.33 – 0.82)**	**.004**	**0.43 (0.21 – 0.89)**	**.024**
Attend Legion *(ref = no)*	1.10 (0.61 – 2.00)	.745	1.36 (0.79 – 2.31)	.263	**2.52 (1.29 – 4.89)**	**.006**
Volunteer *(ref = no)*	1.72 (0.59 – 1.94)	.819	**1.86 (1.09 – 3.14)**	**.022**	**2.98 (1.57 – 5.66)**	**.001**

Reference category: attended the centre one to three times per month
N=1,187

Overall, women were more likely to attend once per week or two to four days per week compared to men, while living with a spouse reduced the odds of attending daily. Across all attendance levels, those living in rural locations had reduced odds of attending. Participating at private clubs also significantly reduced the odds of attending the centre multiple times per week. Attending the legion more than doubled the odds of daily attendance, as did volunteering in the community.

5.3.2 Hours Per Visit

In order to identify potential predictors of hours per visit, univariate comparisons with various participant characteristics are examined. Those with significant associations were then entered into a multinomial regression to predict hours per visit.

5.3.2.1 Associations with Participant Characteristics

Demographic and health characteristics by hours per visit are shown in **Table 5.8**. While age was not significant, women were more likely to spend 5+ hours per visit ($\chi^2(2) = 11.887$, $p = .003$), as were those who lived alone or with other friends/family ($\chi^2(4) = 43.400$, $p = .001$) and low-income earners ($\chi^2(4) = 38.447$, $p < .001$). Those with post-secondary degrees visited for less than two hours each time ($\chi^2(4) = 9.752$, $p = .045$). Health characteristics (including self-rated health, chronic conditions, and physical activity levels) were not associated with frequency of attendance (data not shown). Those who attended other community facilities for recreation and leisure were more likely to spend 5+ hours per visit ($\chi^2(2) = 8.730$, $p = .013$); however, there were no associations with attendance at specific facilities such as church, the legion, private clubs and other OACs (data not shown). Those who volunteered were also more likely to spend 5+ hours per visit ($\chi^2(2) = 35.307$, $p < .001$). Those living furthest from the centre were more

likely to spend 5+ hours per visit. For primary transportation, those who walked had the shortest visits while those who used public transit had the longest visits.

Table 5.8 Associations between Participant Characteristics and Hours per Visit (presented as frequency (%) by category)

	Hours per Visit		
	< 2 hours (n=390)	**2-4 hours** (n=1,502)	**5+ hours** (n=333)
Gender**	**n=376**	**n=1,417**	**n=307**
Men	111 (20.7%)	368 (68.8%)	56 (10.5%)
Women	265 (16.9%)	1,049 (67%)	251 (16%)
Age	**n=372**	**n=1,447**	**n=317**
51-65	52 (16.8%)	216 (69.7%)	42 (13.5%)
66-75	176 (19.5%)	593 (65.7%)	134 (14.8%)
76-85	119 (16%)	516 (69.3%)	110 (14.8%)
86 or older	25 (14%)	122 (68.5%)	31 (17.4%)
Living Arrangements***	**n=386**	**n=1,480**	**n=330**
Alone	146 (16%)	608 (66.7%)	157 (17.2%)
Spouse	209 (19.5%)	748 (69.7%)	116 (10.8%)
Other Friends/Family	31 (14.6%)	124 (58.5%)	57 (26.9%)
Highest Education*	**n=370**	**n=1,435**	**n=313**
Less than High School	50 (13.5%)	263 (70.9%)	58 (15.6%)
High School	148 (17%)	580 (66.7%)	141 (16.2%)
College or University	172 (19.6%)	592 (67.4%)	114 (13%)
Employment	**n=376**	**n=1,465**	**n=318**
Retired	328 (23%)	1,330 (64.6%)	292 (12.4%)
Working	48 (16.8%)	135 (68.2%)	26 (15%)
Annual Income***	**n=311**	**n=1,179**	**n=257**
Under $25,000	70 (15.4%)	278 (61.1%)	107 (23.5%)
$25,000 - $69,999	199 (18.4%)	753 (69.8%)	127 (11.8%)
$70,000 and Over	42 (19.7%)	148 (69.5%)	23 (10.8%)
Location	**n=387**	**n=1,472**	**n=329**
Urban/Suburban area	334 (17.2%)	1,309 (67.3%)	302 (15.5%)
Rural Area	53 (21.8%)	163 (67.1%)	27 (11.1%)
Dwelling Type	**n=389**	**n=1,483**	**n=331**
House	266 (18.8%)	955 (67.6%)	191 (13.5%)
Apartment/Condo	111 (15.8%)	467 (66.5%)	124 (17.7%)
Other (e.g., mobile home)	12 (13.5%)	61 (68.5%)	16 (18%)
Community Facilities[1,*]	**n=379**	**n=1,449**	**n=317**
Do not attend other facilities	104 (16.3%)	417 (65.5%)	116 (18.2%)
Attend other facilities	275 (18.2)	1,032 (68.4%)	201 (13.3%)
Volunteer in Community***	**n=356**	**n=1,368**	**n=302**
Do not volunteer	323 (19.3%)	1,133 (67.6%)	221 (13.2%)
Volunteer	33 (9.5%)	235 (67.3%)	81 (23.2%)

	Hours per Visit		
	< 2 hours (n=390)	**2-4 hours** (n=1,502)	**5+ hours** (n=333)
Distance to Centre*	**n=380**	**n=1,465**	**n=320**
Live within 2 km away	134 (17.8%)	498 (66%)	122 (16.2%)
Live between 2-10 km away	194 (17.5%)	776 (69.8%)	141 (12.7%)
Live 11+ km away	52 (17.3%)	191 (63.7%)	57 (19%)
Primary Transportation***	**n=345**	**n=1,291**	**n=285**
Drive Oneself	250 (17.9%)	960 (68.9%)	183 (13.1%)
Public Transit	20 (11.2%)	117 (65.4%)	42 (23.5%)
Walk or Bike	51 (27.6%)	106 (57.3%)	28 (15.1%)
Other Transit	24 (14.6%)	108 (65.9%)	32 (19.5%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

5.3.2.2 Predicting Hours per Visit

A multinomial logistic regression was conducted to predict longer visits to the centre. Participants who attended for less than two hours per visit were used as the reference group, and only variables with significant univariate associations were considered in the model. The results of the regression are shown in **Table 5.9.** The model was significant ($\chi^2(28) = 106.493$, $p < .005$), and explained 10% of the variance (Nagelkerke $R^2 = 0.101$).

Gender, living arrangements and income did not reach significance. Those with post-secondary education had reduced odds of attending their centre for more than two hours per visit. For distance from the centre, those living between two and 10km away were less likely to attend for 5+ hours per visit, compared to those living within 2km. Transportation was also significant: those who usually walked or rode a bike to their centre were significantly less likely to spend more than two hours per visit, while those who used public transit were 2.66 times more likely to be at their centre for more than five hours per visit. Attending other facilities did not impact length of centre visits but volunteering in the community predicted longer visits.

Table 5.9 Predicting Hours per Visit at Older Adult Centres

	2-4 Hours per Visit		5+ Hours per Visit	
	OR (95% CI)	***p***	**OR (95% CI)**	***p***
Gender *(ref = men)*	1.18 (0.85 – 1.65)	.315	1.53 (0.93 – 2.51)	.092
Living Arrange. *(ref = alone)*				
With Spouse	0.88 (0.53 – 1.23)	.468	0.66 (0.41 – 1.06)	.084
With Others	0.87 (0.49 – 1.55)	.636	1.44 (0.72 – 2.90)	.301
Education *(ref = no high school)*				
High School Graduate	0.62 (0.38 – 1.02)	.061	0.71 (0.37 – 1.33)	.281
Post-Secondary Graduate	**0.54 (0.33 – 0.88)**	**.014**	0.58 (0.30 – 1.09)	.087
Income *(ref =earn > $70,000)*				
Earn $25,000 - $69,999	0.85 (0.54 – 1.34)	.487	0.96 (0.47 – 1.97)	.911
Earn < $25,000	0.92 (0.53 – 1.52)	.782	2.05 (0.92 – 4.57)	.081
Distance *(ref = < 2km)*				
Live 2-10km Away	0.75 (0.52 – 1.08)	.124	**0.49 (0.30 – 0.81)**	**.005**
Live 10+km Away	0.66 (0.40 – 1.09)	.103	0.77 (0.40 – 1.49)	.441
Transportation *(ref = drive)*				
Rides / Other Transit	1.14 (0.60 – 2.17)	.688	1.82 (0.85 – 3.92)	.122
Walk / Bike	**0.47 (0.28 – 0.78)**	**.004**	**0.46 (0.22 – 0.95)**	**.037**
Public Transportation	1.95 (0.93 – 4.10)	.077	**2.66 (1.13 – 6.27)**	**.025**
Attend Other Facilities *(ref = no)*	0.99 (0.71 – 1.39)	.964	0.75 (0.49 – 1.19)	.232
Volunteer *(ref = no)*	**2.38 (1.46 – 3.87)**	**.001**	**3.93 (2.21 – 7.01)**	**<.001**

Reference Category: Attend the centre less than 2 hours per visit
N = 1,229

5.3.3 Hours Per Week

Frequency of attendance and hours per visit were combined to create an estimate for hours per week spent at the centre. Group distributions by hours per week are shown in **Table 5.10.** In total, users spent an average of 7.43 ± 5.39 hours per week at the centre. For comparative purposes, users were grouped as **infrequent users** if they attended for fewer than five hours per week (41.5%; n=923) or **frequent users** if they attended for five or more hours per week (58.5%; n=1,302). This cut-point resulted minimal overlap in hours per week that emerged from the categorical nature of attendance frequency and hours per visit.

Table 5.10 Distribution of Estimated Hours per Week

Hours	Frequency of Attendance and Hours Per Visit	n (%)
0.5	1-3x/month for > 2 hours/visit	67 (3%)
1	1x/week for > 2 hours/visit	122 (5.5%)
1.5	1-3x/month for 2-4 hours/visit	157 (7.1%)
2.5	1-3x/month for 5+ hours/visit	13 (0.6%)
3	1x/week for 2-4 hours/visit OR 2-4x/week for > 2 hours/visit	564 (25.3%)
5	1x/week for 5+ hours/visit OR 5+x/week for > 2 hours/visit	55 (2.5%)
9	2-4x/week for 2-4 hours/visit	859 (38.6%)
15	2-4x/week for 5+ hours/visit OR 5+x/week for 2-4 hours/visit	329 (14.8%)
25	5+x/week for 5+ hours/visit	59 (2.7%)

Univariate analyses (shown in **Table 5.11**) were then conducted to examine the characteristics of frequent and infrequent attendees. Variables with significant associations were then considered in a logistic regression predicting frequent centre users.

5.3.3.1 Associations with Participant Characteristics

There were no associations with gender or age group. Those who attended the centre for five or more hours per week were more frequently those who lived alone ($\chi^2(2) = 21.359$, $p < .001$), had no high school education ($\chi^2(2) = 13.475$, $p < .001$), were low income ($\chi^2(2) = 21.406$, $p < .001$), lived in an apartment/condo ($\chi^2(2) = 8.214$, $p = .016$) and in a urban/suburban area ($\chi^2(2) = 21.945$, $p < .001$). There were no differences in self-rated health, chronic conditions or self-rated physical activity (data not shown). In general, weekly centre use was not associated with participation at other community organizations in general, or at church, the legion or other OACs (data not shown); however, those who attended private clubs were more likely to be infrequent users ($\chi^2(1) = 9.832$, $p = .002$). Those who volunteered in the community were also more likely to be frequent users ($\chi^2(1) = 48.332$, $p < .001$). No associations emerged with primary mode of transportation; however, those living within 2km of their centre were more likely to spend five or more hours per week at their centre ($\chi^2(2) = 13.182$, $p < .001$).

Table 5.11 Characteristics of Frequent versus Infrequent Users (presented as frequency (%) by category)

	Frequent Users (≥ 5 hrs/wk) (n=1,302)	**Infrequent Users (<5 hrs/wk)** (n=923)
Gender	**n=1,230**	**n=870**
Women	936 (55%)	629 (45%)
Men	294 (59.8%)	241 (40.2%)
Age	**n=1,257**	**n=879**
51-65	173 (55.8%)	137 (44.2%)
66-75	536 (59.4%)	367 (40.6%)
76-85	435 (58.4%)	310 (41.6%)
86 or older	113 (63.5%)	65 (36.5%)
Living Arrangements***	**n=1,285**	**n=911**
Alone	563 (61.8%)	348 (38.2%)
Spouse	578 (53.9%)	495 (46.1%)
Other Friends/Family	133 (67.9%)	68 (32.1%)
Highest Education**	**n=1,224**	**n=874**
Less than High School	248 (66.8%)	123 (33.2%)
High School	507 (58.3%)	362 (41.7%)
College or University	489 (55.7%)	389 (44.3%)
Employment	**n=1,267**	**n=892**
Retired	1,157 (59.3%)	793 (40.7%)
Working	110 (52.6%)	99 (47.4%)
Annual Income***	**n=1,030**	**n=717**
Under $25,000	304 (66.8%)	151 (33.2%)
$25,000 - $69,999	104 (57.6%)	109 (42.4%)
$70,000 and Over	622 (48.8%)	457 (51.2%)
Location***	**n=1,278**	**n=910**
Urban/suburban Area	1,170 (60.2%)	775 (39.8%)
Rural Area	108 (44.4%)	135 (55.6%)
Dwelling Type*	**n=1,287**	**n=916**
House	769 (56.4%)	616 (43.6%)
Apartment/Condo	441 (62.8%)	261 (37.2%)
Other (e.g., mobile home)	50 (56.2%)	39 (43.8%)
Distance to Centre**	**n=1,269**	**n=896**
< 2 km	496 (62.2%)	285 (37.8%)
2-10 km	650 (58.5%)	461 (41.5%)
11+ km	150 (50%)	150 (50%)
Transportation	**n=1,109**	**n=812**
Drive Oneself	804 (57.7%)	589 (42.3%)
Public Transit	114 (63.7%)	65 (36.3%)
Walk or Bike	107 (57.8%)	78 (42.2%)
Other Transit (e.g., rides)	84 (51.2%)	80 (48.8%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

5.3.3.2 Predicting Frequent Centre Use

A binomial logistic regression was conducted to examine characteristics of those who used their centre frequently (defined as five or more hours per week). Only variables with significant associations were included in the model. The results of the regression are shown **Table 5.12;** the model was significant ($\chi^2(14) = 87.289$, $p < .001$) and explained 8% of the variance (Nagelkerke $R^2 = 0.080$).

Those living with a spouse had reduced odds of being frequent attendees, as did those with high school education. Income was also a significant predictor, whereby those earning less than $70,000 per year had increased odds of being frequent centre users. Living in an urban/suburban setting nearly doubled the odds of being frequent attendees, while living more than 10km from the centre reduced the odds. Lastly, those who volunteered were over 2.5 times more likely to be frequent attendees at their centre.

Table 5.12 Predictors of Frequent (5+ hours per week) Older Adult Centre Use

	OR (95% CI)	***p***
Living Arrange. *(ref = alone)*		
With Spouse	**0.78 (0.61 – 0.99)**	**.047**
With Others	1.21 (0.79 – 1.84)	.378
Education *(ref = no high school)*		
High School Graduate	**0.68 (0.59 – 0.95)**	**.023**
Post-Secondary Graduate	0.75 (0.54 – 1.05)	.099
Income *(ref =earn > $70,000)*		
Earn $25,000 - $69,999	**1.41 (1.01 – 1.98)**	**.047**
Earn < $25,000	**1.66 (1.11 – 2.48)**	**.014**
Location *(ref = rural)*	**1.75 (1.23 – 2.49)**	**.002**
Housing *(ref = house)*		
Apartment/Condo	1.10 (0.85 – 1.41)	.481
Other Dwelling	0.94 (0.52 – 1.71)	.843
Distance *(ref = < 2km)*		
Live 2-10km Away	0.83 (0.65 – 1.05)	.127
Live 10+km Away	**0.67 (0.47 – 0.95)**	**.024**
Attend Private Clubs *(ref = no)*	0.77 (0.56 – 1.04)	.090
Volunteer *(ref = no)*	**2.59 (1.89 – 3.54)**	**<.001**

N=1,471

5.3.4 Recreation Program Participation

Centre users were asked to report on the types of recreation programs they regularly participated in at their centre (i.e., variety) but not on the total number of programs used. As shown in **Table 5.13**, the most popular activities included special events (52.5%), trips and travel (37.7%), exercise programs (36.3%), cards (26.5%) and dance (18.1%); the least common were writing groups (1.6%), intergenerational programs (2.4%), and multicultural programs (2.5%).

Recreation programs were classified as fitness (e.g., exercise, dance) and non-fitness (e.g., crafts, music, games) to explore how participant characteristics were associated with preferences. While 3.8% of centre users reportedly did not participate in any activities, around half participated in non-fitness activities only, less than 10% did fitness activities only, and about 40% did both. Univariate associations are presented below; significant factors were explored in a multinomial regression model to identify those that best predicted recreation program preference.

Table 5.13 Participation in Recreation Activities at Older Adult Centres

	Frequency (%) or Mean ± SD (range)
Type of Recreation Program	**n=2,239**
Do not participate in any activities	85 (3.8%)
Special events	1,176 (52.5%)
Trips and Travel	845 (37.7%)
Exercise	812 (36.3%)
Cards	593 (26.5%)
Dance	406 (18.1%)
Visual Arts and Crafts	397 (17.7%)
Computers	258 (11.5%)
Educational Events and Workshops	258 (11.5%)
Music and Drama	258 (11.5%)
Sports & Outdoor Activities	239 (10.7%)
Billiards and Games	208 (9.3%)
Congregate Meal Programs	204 (9.1%)
Woodworking	203 (9.1%)
Discussion & Special Interest Groups	184 (8.2%)
Multicultural & Language Programs	56 (2.5%)
Intergenerational Programs	54 (2.4%)
Writing Groups	36 (1.6%)

	Frequency (%) or Mean ± SD (range)
Number of Recreation Types	**n=2,239**
0 Activities	85 (3.8%)
1-2 Types of Activities	946 (42.3%)
3-4 Types of Activities	842 (37.6%)
5+ Types of Activities	366 (16.3%)
Average Number of Activity Types	2.86 ± 1.68 (0 – 11)
Nature of Activities	**n=2,239**
No Activities	85 (3.8%)
Only fitness activities	152 (6.8%)
Only non-fitness activities	1,096 (48.9%)
Mix of fitness and non-fitness activities	906 (40.5%)

5.3.4.1 Associations with Participant Characteristics

As shown in **Table 5.14**, men were more likely to report no recreational activities, or non-fitness activities ($\chi^2(3) = 86.249$, $p < .001$). Younger individuals tended to participate in fitness activities while those aged 86+ were more likely to do non-fitness activities ($\chi^2(9) = 56.636$, $p < .001$). Non-fitness activities were also preferred low-income seniors ($\chi^2(6) = 21.899$, $p < .001$). and those who did not graduate high school ($\chi^2(6) = 44.073$, $p < .001$). Self-rated health ($\chi^2(3) = 10.125$, $p = .018$) and chronic conditions ($F(3,2235) = 8.353$, $p < .001$) also differed: those with fair or poor self-rated health were more likely to participate in non-fitness and those who did non-fitness programs had more chronic conditions than those who did fitness programs ($p < .001$). Unsurprisingly, those with low self-rated fitness activity levels were more likely to do non-fitness activities only, while those with high self-rated physical activity levels were more likely to do fitness programs ($\chi^2(6) = 53.587$, $p < .001$). Attending other facilities in the community did not impact recreation program preference (data not shown); however, those who participated in non-fitness activities were more likely to attend the legion ($\chi^2(3) = 11.490$, $p = .009$). Recreation program preference was not associated with distance travelled to the centre or primary mode of transportation (data not shown).

Table 5.14 Associations between Participant Characteristics and Recreation Program Preference (presented as mean ± SD or frequency (%) by category).

	No Recreation (n=85)	**Fitness Only** (n=152)	**Non-Fitness Only** (n=1,096)	**Fitness & Non-Fitness** (n=906)
Gender***	**n=79**	**n=144**	**n=1,042**	**n=847**
Men	31 (5.8%)	24 (4.5%)	346 (64.4%)	136 (25.3%)
Women	48 (3%)	120 (7.6%)	696 (44.2%)	711 (45.1%)
Age***	**n=78**	**n=143**	**n=1,050**	**n=877**
51-65	11 (3.5%)	29 (9.2%)	129 (41%)	146 (46.3%)
66-75	31 (3.4%)	69 (7.6%)	399 (44%)	408 (45%)
76-85	33 (4.4%)	41 (5.5%)	400 (53.5%)	273 (36.5%)
86 or older	3 (1.7%)	4 (2.2%)	122 (68.2%)	50 (27.9%)
Living Arrangements	**n=81**	**n=147**	**n=1,083**	**n=897**
Alone	30 (3.3%)	56 (6.1%)	447 (48.8%)	383 (41.8%)
Spouse	42 (3.9%)	79 (7.3%)	527 (48.8%)	431 (39.9%)
Other Friends/Family	9 (4.2%)	12 (5.6%)	109 (51.2%)	83 (39%)
Highest Education***	**n=77**	**n=144**	**n=1,043**	**n=866**
Less than High School	21 (5.6%)	14 (3.8%)	226 (60.6%)	112 (30%)
High School	31 (3.6%)	60 (6.9%)	432 (49.5%)	350 (40.1%)
College or University	25 (2.8%)	70 (7.9%)	385 (43.6%)	404 (45.7%)
Employment	**n=82**	**n=144**	**n=1,056**	**n=888**
Retired	75 (3.8%)	123 (6.3%)	964 (49.2%)	798 (40.7%)
Working	7 (3.3%)	21 (10%)	92 (43.8%)	90 (42.9%)
Annual Income**	**n=60**	**n=120**	**n=859**	**n=719**
Under $25,000	21 (4.6%)	20 (4.4%)	240 (52.5%)	176 (38.5%)
$25,000 - $69,999	31 (2.9%)	85 (7.8%)	538 (49.5%)	433 (39.8%)
$70,000 and Over	8 (3.7%)	15 (4.0%)	81 (37.9%)	110 (51.4%)
Location	**n=81**	**n=147**	**n=1,077**	**n=895**
Urban/Suburban Area	69 (3.5%)	134 (6.9%)	950 (48.6%)	803 (41.1%)
Rural Area	12 (14.9%)	13 (5.3)	127 (52%)	92 (37.7%)
Dwelling Type	**n=82**	**n=148**	**n=1,085**	**n=900**
House	50 (3.5%)	104 (7.3%)	685 (52.2%)	580 (40%)
Apartment/Condo	28 (4%)	41 (5.8%)	353 (50%)	284 (40.2%)
Other (e.g., mobile home)	4 (44%)	3 (6%)	47 (48.3%)	36 (40.9%)
Self-Rated Health*	**n=82**	**n=147**	**n=1,077**	**n=889**
Very Poor / Poor / Fair	21 (3.8%)	29 (5.2%)	303 (54.6%)	202 (36.4%)
Good / Excellent	61 (3.7%)	118 (7.2%)	774 (47.2%)	687 (41.9%)
# Chronic Conditions***	2.21 ± 1.83	1.61 ± 1.34	2.27 ± 1.71	2.08 ± 1.56
Physical Activity Level***	**n=82**	**n=147**	**n=1,070**	**n=891**
Very Low / Low	9 (4.5%)	8 (4%)	142 (70.6%)	42 (20.9%)
Moderate	49 (4.1%)	75 (6.3%)	587 (48.6%)	495 (41%)
High / Very High	24 (3.1%)	63 (8.1%)	341 (43.6%)	354 (45.3%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

5.3.4.2 Predicting Recreation Program Preference

Findings from the univariate associations (above) were used to build a multinomial logistic regression predicting recreation program preference. Those who participated in both fitness and non-fitness programs were used as the reference group, and only variables significantly associated with program preferences were entered into the model. The results of the regression are shown in **Table 5.15.** The final model was significant ($\chi^2(36) = 199.015$ $p < .001$) and explained 14% of the variance in activity preference (Nagelkerke $R^2 = 0.137$).

Those who participated in no recreation activities were more likely to be men, and to rate their physical activity as low. Those who did fitness only generally did not differ from those who participated in both types; however, several significant predictors for non-fitness only emerged. Men, those over age 86, those with no high-school education, and those with low/very low physical activity levels were more likely to do non-fitness programs.

Table 5.15 Predictors of Recreation Program Preference at Older Adult Centres

	Fitness Activities		**Non-Fitness Activities**		**No Recreation Activities**	
	OR (95% CI)	***p***	**OR (95% CI)**	***p***	**OR (95% CI)**	***p***
Age *(ref = age 51-65)*						
Age 66-75	0.84 (0.48 – 1.45)	.520	0.94 (0.67 – 1.31)	.699	0.50 (0.22 – 1.12)	.090
Age 76-85	0.86 (0.47 – 1.59)	.644	1.33 (0.94 – 1.89)	.107	0.73 0.32 – 1.65)	.452
Age 86 or older	0.68 (0.22 – 2.15)	.511	**2.11 (1.26 – 3.53)**	**.005**	0.42 (0.86 – 2.06)	.286
Gender *(ref = men)*	0.97 (0.57 – 1.64)	.904	**0.37 (0.29 – 0.49)**	**<.001**	**0.26 (0.14 – 0.50)**	**<.001**
Education *(ref = no high school)*						
High School Graduate	1.49 (0.69 = 3.24)	.311	0.74 (0.53 – 1.04)	.087	0.95 (0.40 – 2.24)	.905
Post-Secondary Graduate	1.14 (0.52 – 2.50)	.746	**0.53 (0.38 – 0.75)**	**<.001**	0.56 (0.23 – 1.41)	.217
Income *(ref = earn > $70,000)*						
Earn $25,000 - $69,999	1.54 (0.81 – 2.94)	.192	1.28 (0.89 – 1.83)	.181	0.73 (0.30 – 1.83)	.505
Earn < $25,000	1.01 (0.45 – 2.22)	.991	1.36 (0.90 – 2.05)	.148	1.14 (0.41 – 3.18)	.810
Health Status *(ref = poor)*	0.76 (0.44 – 1.33)	.343	0.97 (0.72 – 1.29)	.811	1.19 (0.55 – 2.58)	.657
Chronic Conditions	**0.81 (0.69 – 0.94)**	**.006**	1.03 (0.96 – 1.11)	.380	1.11 (0.92 – 1.35)	.279
Physical Activity *(ref = low)*						
Moderate	0.71 (0.27 – 1.85)	.487	**0.37 (0.23 – 0.58)**	**<.001**	**0.33 (0.12 – 0.87)**	**.026**
High	0.72 (0.26 – 1.97)	.523	**0.29 (0.18 – 0.48)**	**<.001**	**0.23 (0.08 – 0.69)**	**.009**
Attend Legion *(ref = no)*	0.66 (0.32 – 1.38)	.273	1.09 (.78 – 1.53)	.603	1.45 (0.66 – 3.21)	.355

Reference Category: Participate in both fitness and non-fitness programs at the centre.
N=1,569

5.3.5 Centre Volunteerism

Just over half of centre users (57.9%) reported volunteering at their centre; around half had been volunteering for one to five years, but nearly 20% had been volunteering for 11 or more years. Most were regular volunteers, with over two thirds (68.3%) doing so at least weekly. Volunteer roles included board of directors or steering committee members (57.4%), program support (44.5%), and centre administrative support (27.2%). Centre volunteers engaged in an average of 2.01 ± 1.21 roles (range: 1 – 8); however, across the full sample, users engaged in an average of 1.5 ± 1.36 roles (range: 0 – 8).

In general, volunteer status was not associated with any of the demographic or health characteristics examined. Centre volunteer status was not associated with distance travelled to the centre but those who received rides or used specialized transit were less likely to volunteer ($\chi^2(3) = 9.235$, $p = .026$). Volunteer status was not related to participation in other community facilities, including church, private clubs, and other older adult centres.

5.3.6 Interest in Attending More Often

Around 20% of users (n=389) reported that they would consider attending the centre more often if better transportation options were available. These individuals did not differ in their current self-reported centre participation in terms of frequency of attendance, hours per visit, hours per week or program preference; however, they participated in a greater variety of programs ($t(1879) = -3.100$, $p = .002$) and were less likely to volunteer ($\chi^2(1) = 4.818$, $p = .028$). The following sub-sections explore the univariate associations between demographic and health characteristics, and community participation and transportation with interest in attending more if better transportation were available. Findings were then used to build a logistic regression model to predict interest in attending more often.

5.3.6.1 Associations with Participant Characteristics

Women (22% of women versus 14.8% of men; $\chi^2(1) = 11.055$, $p = .001$), those who lived alone (25.6% of those living alone versus 15.7% of those living with a spouse; $\chi^2(2) = 26.473$, $p < .001$), had less education (26.1% of those with no high-school education versus 16.8% of those with post-secondary degrees; $\chi^2(2) = 12.693$, $p = .002$), were low-income (31.9% of those earning less than $25,000 versus 17.5% of those earning $70,000; $\chi^2(2) = 39.737$, $p < .001$) and lived in "other" dwelling types (54.4% of those in 'other' dwellings versus 17.1% in a house and 23.2% in an apartment; $\chi^2(2) = 66.430$, $p < .001$) were more likely to report they would consider attending more often with better transportation. Those who wanted to attend more often had poorer self-rated health (30% of those with poor health versus 17.4% of those with good health; $\chi^2(1) = 34.179$, $p < .001$), more chronic conditions (2.60 ± 1.72 versus 2.04 ± 1.58; $t(1879) = -6.115$, $p < .001$), and lower physical activity levels (27.9% of those with low levels versus 15.5% of those with high levels; $\chi^2(1) = 18.128$, $p < .001$).

Participation in other community facilities, including church, the legion, or at other OACs, generally did not impact interest in attending more often; however, those that attended private clubs were less likely to do so (14.6% of those attend private clubs versus 21.5% of those that did not; $\chi^2(1) = 5.869$, $p = .015$). Those who volunteered were also less likely to express interest in attending more often with better transportation (14.9% of volunteers versus 21.2% of non-volunteers; $\chi^2(1) = 5.994$, $p = .014$). With respect to transportation, those who used public transit (39.3% of public transit users) and "other" transit (51.7% of those who use "other" transit) were more likely to express interest ($\chi^2(3) = 166.864$, $p < .001$), as were those who lived more than 11km away from the centre (27.7% of those living far from the centre; $\chi^2(2) = 15.643$, $p < .001$).

5.3.6.2 Predicting Interest in Attending More Often with Better Transportation

Findings from the univariate analyses above were used in a binomial logistic regression identifying the factors that best predicted interest in attending an OAC more often if better transportation were available. In the full model (with all significant factors), education, income, distance to the centre, self-rated health, physical activity levels, chronic conditions, and participation at private clubs were not significant predictors; therefore, they were removed to create a more parsimonious model. The final model (shown in **Table 5.16**) was significant ($\chi^2(19 = 133.535$, $p < .001$), explained 15% of the variance in senior centre participation (Nagelkerke $R^2 = .153$).

Those who lived alone and those who lived in other dwellings were more likely to express interest in attending more with better transportation, while those who volunteered were less likely. Unsurprising, primary transportation was a significant predictor, whereby those who used public transit or relied on rides or other means of transportation were more likely to express interest in attending more often.

Table 5.16 Predictors of Interest in Attending the Centre More Often with Better Transportation

	OR (95% CI)	***p***
Gender *(ref = men)*	1.16 (0.82 – 1.66)	.401
Living Arrange. *(ref = alone)*		
With Spouse	**0.63 (0.42 – 0.96)**	**.029**
With Others	0.88 (0.52 – 1.47)	.620
Housing *(ref = house)*		
Apartment/Condo	0.97 (0.70 – 1.35)	.867
Other Dwelling	**2.18 (0.16 – 4.50)**	**.035**
Transportation *(ref = drive)*		
Rides / Other Transit	**6.12 (4.03 – 9.30)**	**<.001**
Walk / Bike	0.92 (0.53 – 1.60)	.768
Public Transportation	**3.61 (2.36 – 5.16)**	**<.001**
Volunteer *(ref = no)*	**0.66 (0.44 – 1.00)**	**.050**

N=1,012

5.4 Non-User Perceptions of Older Adult Centres

5.4.1 Images of Older Adult Centres

Over 80% of non-users (n=440) answered the question, *"when you think of an older adult or senior centre, what image pops into your mind?"* While the BBTP report provided an exemplar list of positive and negative comments, the present author conducted a complete content analysis of the open-ended responses. As participants were only given three lines to respond, most comments were brief, ranging from a single phrase to one or two sentences. The findings were organized under three themes related to what senior centres are, who attends, and what people do these facilities.

5.4.1.1 What Are Senior Centres?

Older adult centres were viewed as *"central meeting places"* or *"activity centres"* in the community; however, only fourteen people were able to describe features of the space. While some (n=4) named a specific organization or location (e.g., a church basement) that they identified as a senior centre, others imagined the physical layout of and noted centres likely had large rooms with tables and chairs throughout and provided quiet, safe, and clean environments with friendly staff. Only one non-user described specific amenities that centres might offer such as a library, exercise room, and kitchen.

5.4.1.2 Who Attends Senior Centres?

Non-members identified OACs as places specifically for older people. Three subthemes were constructed to reflect their perceptions and stereotypes about who attends. In particular, senior centres were identified as facilities for 'old people' and 'little old ladies,' 'old geysers,' and for those with money and time.

'Old People' and 'Little Old Ladies': Half of non-users described how OACs were for old people, the elderly, seniors, and retired people. While some felt that centres were places to be with others *"my own age,"* there was also a feeling that centres were *"places I might attend in 10 or 15 years"* as the members are *"older than myself."* Non-users also disagreed on how "old" members were, with ideas ranging from 50+, 65 and older, and 75 and older. There was also a belief that older men generally do not attend senior centres, with participants pictured as *"little old ladies"* or *"mostly older women, with a few older gentlemen."*

'Old Geezers': Eighty respondents associated senior centre participants with negative images of aging, including white/grey hair, canes, walkers and wheelchairs, hearing aids, frailty, and limited mobility. Ageist stereotypes were also prominent in their characterizations of centre members as *"old goats," "old geezers," "old farts," "grumpy," "hunched up,"* and *"bent over like a question mark."* Centre members were also thought of as depressed, lonely, handicapped, mentally or physically challenged, sick, and/or in need of support. Centres were sometimes thought of as *"a place where seniors can be put to be forgotten about"* and were for people *"waiting to die,"* and others discussed how centres were the *"second to last stop"* for those who had *"nothing better to do."*

Needing Money and Time: Personal resources, such as money and time, were identified as factors that supported participation at senior centres. In particular, centre-related costs (e.g., membership and program fees) and affordability were thought to limit participation, with some believing that centres were for people who had *"limited financial needs"* and *"lots of money"* to spend on recreation and leisure. Relatedly, non-members also felt senior centre participants are those who have *"time to spend,"* with two people noting they would like to attend when they *"had more time."*

5.4.1.3 What People Do at Senior Centres

Non-users had several ideas of what they thought people did at senior centres. While most focused on how centres provide an opportunity to connect with others, be active and learn new things, ageist stereotypes were reinforced by a belief that centres are filled with people 'sitting around' and 'doing nothing.'

Connecting with Others: Despite the fact that a few non-users were concerned *"too cliquey"* and *"not welcoming,"* around a quarter felt they are positive places for senior to get together, make new friends, and enjoy similar interests. Many described images of *"getting people out"* and *"being together",* noting that centres offer relationships and companionship with that help combat loneliness. Several individuals also talked about how centres are sources of support, with many members *"helping each other."*

Being Active and Learning New Things: Several non-users (n=82) discussed how centres are places for seniors to be active, have fun, and learn new skills. Centres were frequently described as "*opportunities to keep seniors' minds and bodies active"* and were seen as places for enjoyment, enthusiasm, and engagement. There was also a focus (n=87) on the variety of programs that are available and how they are opportunities for seniors to engage in activities they did not have time to do while they were working; one specifically noted *"I used to think [senior centres] were for old folks with nothing to do, but I just found out about all the different types of activities and programs."* Some of the activities described by non-users were exercise and dance, arts-based activities, trips and congregate dining. Interestingly, very few people (n=17) spoke of health programming; although those that did noted that senior centre programs promoted good health and helped people stay fit, non-users generally did not focus on potential health benefits.

'Sitting Around' and 'Doing Nothing': Although older adult centres were frequently associated with *"active seniors,"* some imagined a certain level of inactivity, with people *"sitting around"* and *"doing nothing,"* reinforcing the ageist stereotypes about who attends. This stereotyping was also evident when non-users (n=87) described the activities available at OACs, focusing on sedentary activities like cards and bingo.

5.4.2 Interest in Attending an Older Adult Centre

Non-users were asked if they would be interested in joining an older adult centre, and those who said yes or maybe (n=359) were compared to those that expressed no interest (n=178). Significant findings from univariate analyses are described below, and data is in **Appendix J.**

5.4.2.1 Associations with Participant Characteristics

Age was significantly associated with interest in joining an older adult centre; those who were aged 65 or younger were more likely to express interest, while those aged 86 and older were more likely to have no interest ($\chi^2(3) = 12.926$, $p = .005$). There was also a trend for low income earners (less than $25,000 per year) to be interested in joining, while those earning more than $70,000 per year were less likely to be interested ($\chi^2(2) = 6.012$, $p = .050$). Other factors including sex, living arrangements, education, work status, language background, location, and housing were not associated with interest in attending a senior centre. Self-rated health was not associated with interest in attending an older adult centre; however, those who would consider attending a centre in the future had more chronic conditions ($t(401.141) = 3.074$, $p = .002$). Physical activity levels did not differ by interest.

In general, participation in community facilities did not differ by interest in joining an OAC in the future; however, those who attended a private fitness facility were more likely to be interested ($\chi^2(1) = 3.999$, $p = .046$). Those who would consider joining an older adult centre were

significantly more likely to be interested in physical fitness ($\chi^2(1) = 33.500$, $p < .001$), art programs ($\chi^2(1) = 4.051$, $p = .044$), educational events ($\chi^2(1) = 8.346$, $p = .004$), computers and technology programs ($\chi^2(1) = 20.688$, $p < .001$), health and wellness programs ($\chi^2(1) = 33.847$, $p < .001$), special events ($\chi^2(1) = 27.471$, $p < .001$) and trips and travel ($\chi^2(1) = 17.130$, $p < .001$); however, engagement in volunteer activities did not differ between groups.

5.4.2.2 Predicting Interest in Attending an OAC in the Future Among Non-Users

Findings from the univariate analyses were used to build a binomial logistic regression identifying the best predictors of interest in joining a centre in the future. The model (see **Table 5.17**) was significant ($\chi^2(12) = 99.370$, $p < .001$), explained 24% of the variance in senior centre participation (Nagelkerke $R^2 = .242$). Non-users aged 86 and over were significantly less likely to have any interest in joining an OAC, while more chronic conditions, and interest in physical activities, health and wellness, and special events positively predicted interest.

Table 5.17 Predictors of Interest in Joining an Older Adult Centre Among Non-Users

	OR (95% CI)	***p***
Age *(ref = age 51-65)*		
Age 66-75	0.69 (0.42 – 1.13)	.137
Age 76-85	0.58 (0.32 – 1.03)	.065
Age 86 or older	**0.28 (0.11 – 0.77)**	**.014**
Chronic Conditions	**1.27 (1.11 – 1.45)**	**<.001**
Interest in Recreation Programs		
Physical Activity *(ref = no)*	**2.09 (1.35 – 3.24)**	**.001**
Arts Programs *(ref = no)*	1.10 (0.71 – 1.71)	.655
Education Programs *(ref = no)*	1.23 (0.77 – 1.99)	.387
Computer Programs *(ref = no)*	1.53 (0.96 – 2.43)	.074
Health and Wellness *(ref = no)*	**1.82 (1.16 – 2.84)**	**.009**
Special Events *(ref = no)*	**2.13 (1.34 – 3.39)**	**.001**
Trips and Travel *(ref = no)*	1.29 (0.83 – 1.99)	.258
Attend Fitness Facility *(ref = no)*	1.30 (0.66 – 2.57)	.449

N=299

Chapter 6: Results – Multi Centre Guided Evaluation Project

This chapter begins with an overview of study participation and data completeness, followed by a description of sample characteristics (of participating centres and older adult users), followed by an examination of out-of-home mobility. The next section describes centre participation, followed by an examination of social support at the centre. The final section examines whether the centre serves as a primary place for social engagements, and the extent to which centre participation is a focal point in out-of-home travel. Throughout this chapter, primary findings are presented in the text; supplemental data is shown in **Appendix K.**

6.1 Participation and Data Completeness

Data was collected from 295 centre participants (users) from 12 centres in across Ontario (see **Table 6.1**). Data collection took place in the winter (November – March) for about half (n=149) of the sample, with the remainder assessed in the spring (April – May). Statutory holidays and/or adverse weather conditions (e.g., ice storm) may have impacted usual travel for participants at six centres (see **Appendix K**).

Facilitators were instructed to follow the data collection protocol outlined in **Figure 4.1** in the **Chapter 4**; however, suggested timelines were not followed precisely at each centre. For instance, not all the participants from a given centre participated on the same days, and the suggested timing (e.g., beginning the Diaries in Session 1, or completing Session 2 immediately after the two-week travel period) was not always adhered to.

Table 6.1 Distribution of Study Participants and Data Completeness by Centre (presented as frequency (%) by category)

Centre	Region of Ontario	Participants	Data Completeness	Season of Data Collection[1]
A	Golden Horseshoe	21 (7.1%)	Session 1: 21 (100%) Session 2: 21 (100%) Diaries: 21 (100%)	Winter
B	Eastern	20 (6.8%)	Session 1: 20 (100%) Session 2: 20 (100%) Diaries: 19 (95%)	Winter
C	Metro	14 (4.7%)	Session 1: 14 (100%) Session 2: 8 (57.1%) Diaries: 12 (85.7%)	Winter
D	Central	22 (7.5%)	Session 1: 22 (100%) Session 2: 12 (54.5%) Diaries: 13 (59%)	Winter
E	Central	24 (8.1%)	Session 1: 24 (100%) Session 2: 24 (100%) Diaries: 24 (100%)	Winter
F	Metro	21 (7.1%)	Session 1: 21 (100%) Session 2: 8 (38.1%) Diaries: 9 (42.9%)	Winter
G	South West	20 (6.8%)	Session 1: 20 (100%) Session 2: 20 (100%) Diaries: 20 (100%)	Spring
H	Eastern	16 (5.4%)	Session 1: 15 (100%) Session 2: 15 (93.8%) Diaries: 14 (88%)	Winter (n=10) Spring (n=6)
I	North Central	29 (9.8%)	Session 1: 27 (93.3%) Session 2: 23 (79.3%) Diaries: 23 (79.3%)	Winter (n=17) Spring (n=7) Unknown (n=5)
J	Metro	27 (9.2%)	Session 1: 27 (100%) Session 2: 27 (100%) Diaries: 27 (100%)	Spring
K	Central	31 (10.5%)	Session 1: 31 (100%) Session 2: 29 (93.5%) Diaries: 31 (100%)	Spring
L	North Western	50 (16.9%)	Session 1: 50 (100%) Session 2: 46 (92%) Diaries: 48 (96%)	Spring
12	7 regions	295 (100%)	Session1: 293 (99.3%) Session 2: 253 (85.7%) Diaries: 261 (88.5%)	Winter: 149 (50.5%) Spring: 141 (47.8%) Unknown: 5 (1.7%)

[1] Winter = November – March; Spring = April – May.

As shown in **Table 6.1**, packages were returned for 99.3% of participants (n=293) for Session 1; for 85.8% (n=253) for Session 2, and for 88.5% (n=261) for travel diaries. Most participants (285 to 293) completed all the materials included in the first session. Of the continuing participants, completion rates for specific Session 2 materials were as follows: Centre Usage Questionnaire (n=253), Life-Space Assessment (n=247), ABC Scale (n=244), and the MOS-SSS (n=222). Fourteen-day travel diaries were completed, returned, and verified at the second meeting for a total of 261 participants (88.5% of the sample).

6.2 Centre Characteristics

Centre information was obtained through a structured telephone interview with the centre supervisor or coordinator. The 12 centres that took part in the project were located in municipalities ranging in size from 8,000 to nearly 3 million residents and had been in operation for an average of 26.44 ± 15.96 years (range: 3 years to 52 years). Most centres were open at least five days per week, for an average of 44.23 ± 15.66 hours (25 to 68.5 hours per week); the exception was Centre D, which was open only four days per week for 12.5 hours. Four centres (E, F, I, and L) had weekend hours. Centres served an average of 950 ± 813.80 members (range: 100 to 3000), with an average daily attendance of 160.83 ± 147.20 (range: 10 – 500).

While most centres had a least one paid staff member (average 4.17 ± 3.32, range: 0 – 13), they all relied on volunteers to convene at least some of their programs; one centre (D) was entirely volunteer run with no paid staff or instructors. Ten centres had a kitchen onsite, with around half operating as a café, serving daily meals and snacks for a small fee.

Annual operating budgets averaged $245,400 ± $478,434, ranging from $13,000 to $500,000 (although three centres were unable to estimate their annual budget). While two centres (C and J) had “in name only” membership, the other 10 had an average annual membership fee

of $39.11 ± $35.72 (range: $10 to $200). All but two centres (D and J) charged additional fees for programs; nominal activity fees were charged for drop-in programs lead by volunteer conveners, and registration fees were charged for programs taught by qualified instructors.

Nine centres had free (n=7) or affordable (n=2) parking available on-site or at a nearby municipal lot, while the remaining three centres (C, F and J; all from a large metropolitan area) had limited or no parking. Public transit was available for all but three centres (B, C, and D); however, for two centres (E and H), public transit was infrequent as the centre was not located on a main transit route. Three centres (C, F, and G) also had their own transit available for travel to and from the centre for around $3 per ride.

6.3 Sample Characteristics

6.3.1 Demographic and Health Characteristics

Demographic and health characteristics are presented in **Table 6.2**. The sample was, on average, aged 71.72 ± 7.86 and approximately 80% female. Just under half were married (47.6%) and lived with a spouse (46.4%). Given the correspondence between marital status and living arrangements, living arrangements was selected for analysis. Most had graduated high school (38.0%) or college/university (45.1%). Due to the small number of people who had not graduated high school (11.5%), post-secondary graduates (n=133) were compared to those who did not attend college or university (n=146). Over one quarter (26.9%) received the Guaranteed Income Supplement (GIS), which has a maximum annual income cut-off of around $18,000 for single individuals and around $23,000 for couples. All participants spoke English except for the 17 Mandarin-speaking older adults recruited from Centre I.

Table 6.2 Demographic and Health Characteristics (presented as mean ± SD or frequency (%) by category).

Centre Users (N=295)	
Women (n=291)	232 (79.7%)
Age (n=290)	71.72 ± 7.86 (42 – 93)
Live Alone (n=293)	129 (44%)
Post-Secondary Graduate (n=279)	133 (45.1%)
Retired (n=288)	266 (92.4%)
Receive GIS (n=268)	72 (26.9%)
Current Driver (n=281)	228 (81.1%)
Poor/Fair Self-Rated Health	43 (14.7%)
Average Self-Rated Health[1] (n=293)	3.53 ± 0.94 (1 – 5)
# Chronic Conditions (n=293)	2.03 ± 1.48 (0 – 8)
Use Cane/Walker (n=293)	116 (39.6%)
Fallen in Past Year (n=290)	68 (23.4%)
Activities-specific Balance Confidence (n=244)	85.84 ± 17.41 (6.25-100)
Vitality Plus Scale (n=285)	36.24 ± 7.43 (10 – 50)
Loneliness (n=285)	4.13 ± 1.42 (3 – 9)
High Loneliness (Scores >5)	62 (21.8%)
Life-Space Composite Score (n=247)	72.75 ± 18.27 (20 – 120)
Restricted Life-Space (n=247)	61 (24.8%)

[1] Rated on a 5-point likert scale: 1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent.

The majority of participants (81%) were still driving. When asked to report how they usually got around, 74.2% drove, 38.1% walked or rode a bicycle, 18.9% received rides from friends or family, 17.5% used public transit, and 9.5% used other transit including taxis and accessible transit.

Most (85.3%) rated their health as good to excellent, with an average rating of 3.53 ± 0.94. The sample reported an average of 2.03 ± 1.48 chronic conditions (range: 0 – 8), most commonly high blood pressure, cholesterol or heart problems, (48.5%), arthritis (39.6%), and back, foot or joint pain (26.3%).

6.3.2 Community Participation

Approximately three-quarters of participants attended other facilities (besides their OAC), including community centres and fitness facilities (39.2%), church (32.1%), the legion (9.9%), another older adult centre (4.8%), and other facilities (5.5%). Around 60% reported volunteering in the community.

6.3.3 Indicators of Well-being

Scores on various measures of well-being (i.e., balance confidence, vitality, loneliness and life-space) are presented above in **Table 6.2**. Both loneliness and life-space mobility correlated with VPS (r = -.305, p < .001 and r = .160, p = .013, respectively) and ABC scores (r = -.251, p < .001 and r = .395, p < .001, respectively). ABC scores also positively correlated with the VPS (r = .337, p < .001). Associations with other sample characteristics (i.e., demographic and health characteristics) are described briefly below.

Balance confidence, assessed by the ABC Scale, averaged 85.84 ± 17.41 (range: 6.25 – 100). Poorer scores were associated with older age (p = .014) being a non-driver (p = .001), using a cane or walker (p < .001), having a recent fall (p < .001), poor self-rated health (p < .001), and more chronic conditions (p < .001). Scores on the Vitality Plus Scale (VPS) ranged from 10 to 50 (average 36.24 ± 7.43). As expected, VPS scores were associated with receiving GIS (p = .001), using a cane or a walker (p < .001), having a recent fall (p < .001), poor self-rated health (p < .001), and more chronic conditions (p < .001).

Overall, loneliness scores were relatively low (average score: 4.13 ± 1.42); however, about half the sample experienced some loneliness (i.e., scores higher than 3), and nearly one quarter (n=62) experienced high loneliness (i.e., scores greater than 5). Loneliness was higher among those who lived alone (p < .001), as well as non-drivers (p = .008), those who used a cane or

walker (p = .014), and those who rated their health as poor or fair (p < .001). Loneliness was also positively correlated with chronic conditions (p = .001).

Life-space composite scores (LS-C) showed that overall, the sample had a high degree of mobility through their neighbourhood and beyond (72.75 ± 18.27); however, approximately one quarter of the sample had a restricted life space, with LS-C scores less than 60. Life-space composite scores were negatively associated with age (p = .001), and were smaller in those who were retired (p = .008), among non-drivers (p < .001), those who used a cane or walker (p < .001) as well as those with poor/fair self-rated health (p = .039).

6.4 Travel Patterns

Out-of-home travel was captured through participant entries in their daily travel diaries for a two-week period. Diaries were fully completed by 261 participants. Participants did not reliably provide information on the weather, so this data was not analyzed. The following sections report on the completeness and verification of the diaries, followed by results (number of trips, trip duration and time spent out-of-home, mode of transportation, distance travelled and trip purpose). The associations between travel patterns and sample demographic and health characteristics, community engagement and transportation are also described.

6.4.1 Travel Diary Verification

Facilitators were asked to review the diaries collected at the beginning of the second session for completeness; all facilitators reportedly did so and given that the diaries were fully completed by those who submitted them, it seems facilitators provided a high level of support.

Only 15 participants (5.7%) reported difficulty completing the travel diaries; however, visual inspection of these diaries did not reveal any anomalies or confusion in their reporting. Eighty-five percent (n=222) reported that their travel over the two-week period was typical; 13

participants reported they made more trips than usual, and 19 participants reported they made fewer trips than usual. Almost all participants noted the modes of travel they used during the monitoring period were reflective of how they usually got around; however, two people noted they usually walk more places, and another noted she did most of the driving as her husband was having cataract surgery.

Despite the majority indicating their travel patterns during the two-week monitoring period were fairly typical, several people (n=100) noted there was at least one special circumstance or event over the two-weeks that affected their usual travel patterns. For instance, 27 reported attending more social events (e.g., weddings, parties), 26 reported poor weather conditions that limited travel (20/26 were from Centre L), 22 noted they were ill for at least one day, 12 reported out-of-town trips, and 11 described how their travel was altered to help others (e.g., babysit sick grandchildren, assisting a friend in the hospital).

6.4.2 Out-of-Home Mobility Patterns

Table 6.3 presents out-of-home mobility characteristics for the 261 participants who completed travel diaries; characteristics are presented as a total for the overall sample and one-week average. For distance travelled and mode of transit, data was also examined as a percentage of trips per week to account for variations in travel frequency seen among participants. A comparison of travel in Week 1 versus Week 2 is presented in **Appendix K.**

Overall, participants took 10 trips per week, for approximately 30 hours away from home. On average, the sample did not travel outside their home one day per week; however, there was considerable variability from zero to 4.5 days with no travel. Two thirds of trips were between one and 15km from home. Most participants either drove (55% of trips) or walked (19% of trips); other modes of transportation were less common.

Table 6.3 Overview of Out-of-Home Mobility Patterns Averaged to One Week (presented as mean ± SD (range) per category)

	Totals	Average Trips Per Week	% of Trips Per Week
Travel Indicators			
Total Trips	5,421	10.39 ± 4.59 (3 – 30)	---
Trips Per Day	387.21	1.48 ± 0.66 (0.43 – 4.29)	---
Total Hours	15,592.63	29.87 ± 11.30 (5.13 – 71.71)	---
Hours Per Day	1,113.76	4.27 ± 1.61 (0.73 – 10.24)	---
Hours Per Trip	2.88	3.16 ± 1.28 (0.74 – 9.91)	---
Days with No Trips	500	0.96 ± 1.05 (0 – 4.50)	---
Distance from Home			
Within 1km	1,365	2.62 ± 4.30 (0 – 25)	20.38 ± 26.29 (0 – 100)
1-15 km	3,232	6.19 ± 3.64 (0 – 20.50)	62.28 ± 28.93 (0 – 100)
16+ km	824	1.58 ± 1.81 (0 – 9)	17.34 ± 20.98 (0 – 100)
Mode of Transit (Round Trip)			
Drive Oneself	2,938	5.61 ± 4.44 (0 – 28)	55.62 ± 36.17 (0 – 100)
Rides from Others	824	1.59 ± 2.13 (0 – 12)	17.28 ± 22.50 (0 – 100)
Walk or Bike	1,325	2.53 ± 4.57 (0 – 26)	19.27 ± 27.89 (0 – 100)
Public Transit	163	0.32 ± 1.20 (0 – 13.50)	3.46 ± 11.71 (0 – 87.10)
Taxi	10	0.02 ± 0.15 (0 – 2)	0.25 ± 1.86 (0 – 22.22)
Other Transit[1]	101	0.20 ± 0.80 (0 – 6)	2.58 ± 11.56 (0 – 92.31)
Split Transit[2]	60	0.11 ± 0.32 (0 – 2.50)	1.55 ± 4.74 (0 – 45.45)

[1] Other transit include: centre transit, accessible transit.
[2] Participants used one mode of transit to their destination and used a different mode of transit on the way home (e.g., walk to grocery store and take public transit home).

6.4.3 Trip Purpose

Participants were asked to briefly describe the general purpose of each trip. Trip purposes were coded using the process outlined in **Section 4.3.5.2.** As shown in **Table 6.4,** nearly every participant took at least one trip for recreation (98.47%), to run errands (99.23%), or to attend social gatherings (92.72%). See **Appendix K** for a detailed breakdown of trip purpose.

Trips from home were most commonly to participate in recreation (4.13 ± 2.60 trips/week, representing 41.87% of trips/week), including attending the centre (2.45 ± 1.44 trips/week) or another recreation facility (1.16 ± 2.28 trips/week). Other activities like entertainment or educational events were less common. Around 35% of trips were to run personal or household

errands (3.39 ± 1.74 trips/week), and nearly one quarter were to attend social gatherings, including going to restaurants (1.11 ± 1.26 trips/week) and parties like birthdays or BBQs (1.13 ± 1.14 trips/week). Around half the sample made trips for medical appointments (58.62%), volunteering (45.98%), and out-of-town travel (44.06%); however, these trips were relatively infrequent, representing 5.62%, 7.44% and 4.72% of trips per week, respectively.

Table 6.4 Trip Purpose

	% of Sample	**Average Trips Per Week**	**% of Trips Per Week**
Recreation[1]	98.47	4.13 ± 2.60 (0 – 18.50)	41.87 ± 20.07 (0 – 100)
Social Gatherings[2]	92.72	2.21 ± 1.71 (0 – 11)	22.86 ± 17.02 (0 – 100)
Errands	99.23	3.39 ± 1.74 (0 – 10)	33.22 ± 16.50 (0 – 87.50)
Volunteering/Helping Others	45.98	0.78 ± 1.25 (0 – 6)	7.44 ± 11.48 (0 – 66.67)
Medical Appointments	58.62	0.52 ± 0.64 (0 – 5.50)	5.62 ± 7.39 (0 – 57.89)
Out-of-Town Trips[3]	44.06	0.44 ± 0.67 (0 – 3.50)	4.72 ± 7.57 (0 – 50)
Other[4]	75.48	2.13 ± 3.02 (0 – 19.0)	17.16 ± 19.10 (0 – 88.10)

[1] Includes attending the centre, recreation facilities, legion, private club, educational events, clubs/groups, theatre/art/movies, and sporting events/casino.
[2] Includes social gatherings, shopping with friends/family, and restaurants.
[3] Includes out-of-town trips, over-night trips, and returning home from over-night trips.
[4] Includes church, outdoor activities, paid work, other trips, and unknown trips.

As shown in **Appendix K,** trip purposes were positively associated with the various travel indicators (e.g., number of trips and trip duration). Trips within one km of home correlated with recreation, errands, and "other" trips, while trips further from home were correlated with social gatherings, errands, and travelling out-of-town. Trips more than 15km from home also correlated with medical appointments. Trips where the participant drove were positively correlated with all trip purposes except recreation, which correlated with walking trips.

6.4.4 Associations between Travel Indicators and Participant Characteristics

Travel indicators were examined in relation to participant characteristics, including demographic and health characteristics. A detailed summary of the findings can be found in **Appendix K** and are summarized briefly below.

In general, age was negatively correlated with several characteristics, including hours away from home and average trip duration. Compared to those who lived with a spouse, those who lived alone recorded a greater proportion of trips close to home, and for informal social gatherings. Furthermore, low-income seniors (i.e., those receiving the guaranteed income supplement) made more trips overall, but trips were shorter, closer to home, and more likely to be via walking. Although drivers and non-drivers generally did not differ on the amount of travel, non-drivers made more trips close to home; the proportion of trips taken for recreation were also higher for non-drivers, but the reverse was true for social gatherings.

Chronic conditions and use of a mobility device were associated with fewer trips from home, although more trips were taken for medical appointments. Relatedly, balance confidence and life-space mobility were correlated (in the expected direction) with out-of-home travel, including number of trips and hours away from home, and the number of days with no trips.

6.5 Centre Participation

Data pertaining to centre participation was collected through three sources: the OAC background questionnaire, the centre-use questionnaire, and the travel diaries. The OAC background questionnaire provided insight into why they attended the centre and whether they volunteered. The centre-use questionnaire provided a general profile of participation, including membership length and weekly participation patterns. Data from the travel diaries was used to conduct a more in-depth examination of factors (e.g., demographic characteristics, health and

loneliness, transportation, and community participation) impacting centre participation, including weekly visits, hours per week, and activity participation. At the end of this section, these two data sources (diaries versus questionnaire data) are compared to examine accuracy.

6.5.1 Profile of Participation

Centre participation as reported in the OAC background and centre-use questionnaires is shown in **Table 6.5**. Around two-thirds were members of their centre for five or fewer years. New members were younger ($t(244) = -4.213$, $p < .001$), and more likely to be women ($\chi^2(1) = 3.865$, $p = .015$), non-drivers ($\chi^2(21.934)$, $p < .001$) and live within 2km of their centre ($\chi^2(1) = 3.876$, $p = .01$); they were also less likely to be volunteers ($\chi^2(1) = 8.774$, $p = .003$).

Overall, respondents reported visiting the centre an average of 2.89 ± 1.41 days per week, spending 2.71 ± 1.38 hours per visit, for a total of 8.50 ± 6.18 hours per week. Six people reported they usually attend the centre zero days per week. Mondays were the least popular day to attend the centre (49.2% attended), while Tuesdays and Fridays were the most popular (61.1% attended); participation on weekends was reportedly rare.

Participants were asked to select, from a list of 10 options, the number one reason they joined or kept coming to the centre. Although 289 participants answered the question, only 80% (n=233) identified one reason; the remaining 62 participants selected between two and 10 reasons. Across all respondents, reasons for joining and/or attending the centre included: to meet new people and socialize with others (36%), to be physically active (34.6%), to develop new skills (18%), to have a routine (14.9%), to get out of the house (14.2%), for personal growth (13.8%), because they like the staff/volunteers (12.5%), to be involved in leadership roles (8%), to be creative (7.3%), and to improve their diet and nutrition (3.5%). Eleven also identified other reasons for attending the centre, which included to volunteer or attend a specific program.

Table 6.5 Centre Participation Patterns from Self-Report Questionnaires (presented as frequency (%) or mean ± SD (range) by category)

	Total Sample (n=295)
Membership Length (n=250)	
5 or Fewer Years	152 (60.8%)
6+ Years	98 (39.2%)
Days per Week (n=249)	2.89 ± 1.41 (0 – 7)
Hours per Week (n=240)	8.50 ± 6.81 (0 – 41)
Hours per Visit (n=240)	2.71 ± 1.38 (0 – 8)
Activity Participation (n=253)	
Exercise, dance and sports	159 (62.8%)
Special Events	139 (54.9%)
Games	92 (36.4%)
Education programs	69 (27.3%)
Trips and Travel	83 (32.8%)
Arts and crafts	66 (26.1%)
Computers	45 (17.8%)
Music and drama	35 (13.8%)
Discussion groups	30 (11.9%)
Meal programs	15 (5.9%)
Language classes	15 (5.9%)
Multi-cultural events	13 (5.1%)
Intergenerational programming	11 (4.3%)
Other activities	17 (6.7%)
Average Number of Activity Types	3.57 ± 1.99 (0 – 13)
Centre Volunteer (n=288)	125 (43.4%)
Distance to Centre (n=278)	
Within 2km	96 (34.5%)
Further than 2km	182 (65.5%)

Around half the sample participated in a mix of fitness and non-fitness programs (54.9%), 34.8% participated in non-fitness only, and 7.9% participated in only fitness. Just under half the sample reported volunteering at their centre (43.4%). Interestingly, those who reported attending the centre zero days per week also reported participating in only one or two activities that are typically not offered on a weekly basis such as educational events, trips, and special events. One of these individuals indicated they did not participate in any of the recreation activities listed.

6.5.2 Actual Participation

Travel diaries (completed by 261 participants) provided insight into actual (real-time) centre participation over a two-week period (see **Table 6.6**). To be consistent with the BBTP dataset, participation was averaged to one week. Indicators examined included weekly visits, hours per visit, total hours, and activity participation. An overview of centre participation patterns is provided. Next, univariate associations with participant characteristics are examined to determine which factors should be entered into regression models to predict more frequent participation at an OAC.

Table 6.6 Weekly Older Adult Centre Participation Recorded in Travel Diaries

	Mean ± SD Per Week
Visits	2.45 ± 1.44 (0 – 8.5)
Hours	7.98 ± 6.60 (0 – 36.5)
Hours per Trip	2.92 ± 1.43 (0 – 7.72)
Total activities	2.55 ± 2.09 (0 – 12)
Activities per visit	1 ± 0.51 (0 – 2.75)
Fitness activities	0.88 ± 1.15 (0 – 7.5)
Non-fitness activities	1.67 ± 1.70 (0 – 8)
Meals Eaten at Centre	0.26 ± 0.54 (0 – 3)
Volunteer Activities	0.51 ± 0.95 (0 – 6)

All but 12 individuals (5%) attended their centre at least once during the two-week monitoring period. On average, participants visited their centre 2.45 ± 1.44 times per week. Twenty percent of participants made multiple trips per day to their centre. Participants spent an average of 7.98 ± 6.60 hours per week at their centre. Around one third (n=79) spent 10 or more hours per week at their centre, while 11% (n=31) spent two or less. Each trip to the centre was around three hours in duration (2.92 ± 1.43); around 20% (n=56) spent four or more hours per visit, and only two people spent less than 1 hour per visit.

Participants recorded the types of activities they engaged in each time they went to the centre and entries were verified using the centre activity calendars. Eleven participants provided no information on what they did while at the centre. Overall, participants engaged in 2.55 ± 2.09 activities per week, most commonly non-fitness programs (1.67 ± 1.70 programs per week) like games (34.8%), arts and crafts (22.0%) and special events (19.2%). While over half participated in some type of fitness program (e.g., fitness, yoga, dance) over the reporting period, they were attended less than once per week (0.88 ± 1.15 fitness classes per week).

Around one third reported eating a meal at their centre; for most people, this was through the centre café, as opposed to a dedicated meal program. Nearly one hundred people (39%) volunteered at their centre during the monitoring period, predominately convening programs, running the café, or serving on the board of directors or sub-committees. Around 13% attended their centre at least once for the expressed purpose of 'socializing' or 'hanging out' and did not volunteer or participate any specific program; however, based on the arrival/departure times indicated in the diaries, almost all participants spent time at the centre socializing before and/or after programs, but did not state this in their diary as a reason for visiting.

6.5.2.1 Predicting Centre Participation

Table 6.7 shows the associations between centre participation and demographic and health characteristics, as well as community participation and well-being. Linear regressions were conducted to identify the participant characteristics that best predicted: frequency of attendance (i.e., trips per week), hours per visit, hours per week, and total number of activities. For all models, only variables with significant associations at the univariate levels were included.

Table 6.7 Associations between Participant Characteristics and Weekly Older Adult Centre Participation(presented as Pearson's *r* or mean ± SD by category)

	Visits / Week	Hours / Week	Hours / Visit	Total Activities	# Fitness Activities	# Non-Fitness Activities
Age	.096	.043	.020	.018	.010	.015
Gender						
Men	2.63 ± 1.58	9.32 ± 7.72	2.98 ± 1.49	2.79 ± 2.33	0.86 ± 1.20	1.93 ± 1.97
Women	2.39 ± 1.41	7.62 ± 6.23	2.89 ± 1.41	2.50 ± 2.04	0.88 ± 1.14	1.62 ± 1.62
Live Arrangements				*		
Alone	2.64 ± 1.33	8.62 ± 6.48	2.97 ± 1.42	**2.91 ± 2.26**	1.02 ± 1.27	1.89 ± 1.72
With Others	2.31 ± 1.51	7.53 ± 6.66	2.87 ± 1.35	**2.30 ± 1.93**	0.77 ± 1.04	1.53 ± 1.66
Education	***	***	**	***		***
High-School/Non-Graduate	**2.84 ± 1.46**	**9.62 ± 6.86**	**3.17 ± 1.33**	**3.12 ± 2.27**	1.00 ± 1.28	**2.12 ± 1.86**
Post-Secondary Graduate	**2.00 ± 1.29**	**6.19 ± 5.73**	**2.65 ± 1.49**	**1.96 ± 1.73**	0.77 ± 0.98	**1.18 ± 1.32**
Employment						
Working	2.11 ± 1.50	6.64 ± 5.66	2.64 ± 1.54	2.36 ± 2.46	0.54 ± 0.81	1.82 ± 2.24
Retired	2.48 ± 1.45	8.08 ± 6.70	2.92 ± 1.43	2.56 ± 2.06	0.91 ± 1.17	1.65 ± 1.63
Low-Income	*					
Do not Receive GIS	**2.33 ± 1.45**	7.62 ± 6.51	2.86 ± 1.45	2.38 ± 1.97	0.82 ± 1.00	1.56 ± 1.60
Receive GIS	**2.80 ± 1.37**	8.85 ± 6.88	2.94 ± 1.42	2.92 ± 1.97	0.91 ± 1.22	2.01 ± 1.96
Driving Status				*		*
Driver	2.70 ± 1.30	8.70 ± 7.61	3.00 ± 1.69	**3.16 ± 2.52**	1.03 ± 1.48	**2.13 ± 1.82**
Non-Driver	2.38 ± 1.48	7.78 ± 6.32	2.89 ± 1.36	**2.40 ± 1.96**	0.85 ± 1.05	**1.55 ± 1.82**
Distance to Centre						
< 2km	2.63 ± 1.50	8.21 ± 7.52	2.70 ± 1.51	2.78 ± 2.36	0.78 ± 1.28	1.99 ± 1.85
2+ km	2.35 ± 1.43	7.84 ± 5.99	2.99 ± 1.36	2.47 ±1.97	0.90 ± 1.08	1.57 ± 1.62
Mobility Aid			*			
None	2.45 ± 1.46	7.80 ± 6.56	**2.83 ± 1.37**	2.55 ± 2.09	0.93 ± 1.75	1.62 ± 1.69
Use a Cane/Walker	2.44 ± 1.37	8.94 ± 6.76	**3.35 ± 1.68**	2.62 ± 2.14	0.63 ± 1.13	1.99 ± 1.70

	Visits / Week	Hours / Week	Hours / Visit	Total Activities	# Fitness Activities	# Non-Fitness Activities
Falls History						
No Falls	2.42 ± 1.46	2.82 ± 1.41	2.82 ± 1.41	2.52 ± 2.09	0.92 ± 1.19	1.60 ± 1.63
Fallen in Past Year	2.54 ± 1.43	3.19 ± 1.51	3.19 ± 1.51	2.71 ± 2.15	0.72 ± 0.99	1.99 ± 1.88
Self-Rated Health						
Poor/Fair	2.27 ± 1.36	7.03 ± 7.02	2.67 ± 1.65	2.45 ± 2.18	0.69 ± 0.97	1.76 ± 1.75
Good/Excellent	2.48 ± 1.46	8.17 ± 6.51	2.96 ± 1.39	2.58 ± 2.09	0.91 ± 1.17	1.68 ± 1.69
Chronic Conditions	.023	.103	**.183****	.059	-.017	.085
Balance Confidence (ABC)	.032	-.033	-.092	-.043	.101	-.017
Vitality (VPS)	.001	-.033	-.071	-.007	.009	-.015
Loneliness	**.126***	**.136***	.116	**.151***	.075	**.136***
High Loneliness	*	*	*	*		*
No, scores > 5	**2.35 ± 1.47**	**7.47 ± 6.63**	**2.78 ± 1.44**	**2.44 ± 2.05**	0.86 ± 1.10	**1.59 ± 1.68**
Yes, scores < 5	**2.87 ± 1.30**	**9.98 ± 6.36**	**3.27 ± 1.33**	**3.13 ± 2.27**	0.98 ± 1.34	**2.15 ± 1.79**
Life-Space Composite	.052	.013	-.068	.049	.108	-.016
Restricted Life-Space			*		*	
Yes (LS-C < 60)	2.29 ± 1.15	8.01 ± 6.63	**3.24 ± 1.52**	2.16 ± 1.60	**0.64 ± 0.94**	1.52 ± 1.36
No (LS-C > 60)	2.53 ± 1.49	7.96 ± 6.35	**2.79 ± 1.35**	2.67 ± 2.18	**1.00 ± 1.23**	1.68 ± 1.70
Attend Community Centre	*	**	***	*		
No, do not attend	**2.61 ± 1.46**	**9.08 ± 7.01**	**3.21 ± 1.44**	**2.82 ± 2.20**	0.99 ± 1.22	1.84 ± 1.79
Yes, do attend	**2.21 ± 1.40**	**6.36 ± 5.56**	**2.48 ± 1.32**	**2.18 ± 1.88**	0.71 ± 1.02	1.46 ± 1.54
Attend Legion				*		***
No, do not attend	2.43 ± 1.48	7.87 ± 6.78	2.86 ± 1.47	**2.45 ± 2.03**	0.89 ± 1.16	**1.56 ± 1.64**
Yes, do attend	2.62 ± 1.14	8.92 ± 4.85	3.31 ± 1.09	**3.42 ± 2.42**	0.73 ± 1.3	**2.68 ± 1.87**

Significant group differences or correlations: * $p < .05$; ** $p < .01$; *** $p < .001$.

For **visits per week** (n=224), a model including education, GIS, loneliness, and participation at community centres was significant ($F(4,219) = 7.852$, $p < .001$), and explained 11% of the variance (adjusted $R^2 = .109$). Significant predictors were education and loneliness: having post-secondary education negatively predicted visits per week (B(SE) = -0.82 (0.19), $p < .001$), while higher loneliness increased visits per week (B(SE) = .0.13 (0.07), $p = .050$).

For total number of **hours per week** (n=244), a model including education, loneliness and participation in other community centres was significant ($F(3,240) = 9.241$, $p < .001$), and explained 9% of the variance (adjusted $R^2 = 0.092$). Having post-secondary education reduced hours at the centre each week (B(SE) = -3.01 (0.82), $p < .001$), as did attending other community or fitness centres (B(SE) = -1.75 (0.85), $p = .041$). There was also a trend for loneliness to increase hours per week at the centre (B(SE) = 0.56 (0.29), $p = .056$).

For **hours per visit** (n=227), a model including education, use of mobility aids, chronic conditions, loneliness, restricted/unrestricted life-space, and participation in other community centres was significant ($F(6,220) = 6.753$, $p < .001$), and explained 13% of the variance (adjusted $R^2 = 0.133$). Having post-secondary education significantly shortened visits at the centre (B(SE) = -0.39 (0.18), $p = .031$), as did attending other community or fitness centres (B(SE) = -0.59 (0.19), $p = .002$); however, for every chronic condition, length of visits at the centre increased (B(SE) = 0.17 (0.063), $p = .014$). Experiencing high levels of loneliness ($p = .087$) and having a restricted life-space ($p = .088$) tended to increase the length of visits but these factors did not reach significance.

For **number of activities** (n=234), a model including education, living arrangements, loneliness, driving status, and participation at other community centres and the legion was significant ($F(5,225) = 6.225$, $p < .001$) but explained only 12% of the variance (adjusted $R^2 =$

0.119). Having post-secondary education (*B*(SE) = -1.00 (0.27), $p < .001$), and being a current driver (*B*(SE) = -0.68 (0.33), $p = .043$) significantly reduced the number of weekly activities, while attending the legion increased the number activities (*B*(SE) = 1.02 (0.41), $p = .014$). Loneliness, living arrangements and community centre participation were not significant.

6.5.3 Correspondence between Centre Participation Measures

Centre participation data from the questionnaires and the travel diaries was compared to examine the overall level of correspondence and is shown in **Table 6.8**. Generally, data reported in the questionnaires on centre attendance correlated in the expected direction with indicators from the travel diaries (Pearson's *r* range from .264 to .777). Among the 241 participants who completed both the travel diaries and the Centre Use questionnaire, one-third showed disagreements between the two data sources with respect to whether they participated in fitness, non-fitness for a mix of both activity types.

Table 6.8 Correlations between Centre Participation Measures (presented as Pearson's r)

	Travel Diary Data			
Questionnaire Data	**Visits / Week**	**Hours / Week**	**Hours / Visit**	**Activities**
Days/Week	.666***	.599***	.264***	.598***
Hours/Week	.618***	.777***	.594***	.567***
Hours/Visit	.376***	.614***	.708***	.356***

*** $p < .001$

6.6 Social Connections and Support at the Centre

6.6.1 Centre Friendships

Just under 50% of participants reported knowing someone at the centre, such as staff, volunteers or another member, prior to joining. Almost all participants indicated they had made friends at the centre, with the number ranging from one friend to over 25; however, around 150 respondents described the number of friends they made qualitatively, using phrases such as

"many," "several," "a few," "some" or *"dozens."* Of the 233 participants who reported making friends at the centre, 67.4% spent time with those friends outside the centre, most commonly going to restaurants or for coffee (49.4%) or going to social gatherings together, such as parties (42.5%). Other activities included going shopping (27.0%), going to the movies (26.6%), volunteering (22.3%), playing games together (22.3%), going to church (19.3%), providing transportation (19.3%), going to educational events (17.6%), going to the casino or a sporting event (16.7%), participating in clubs (15.0%), out of province trips (14.2%), going on overnight trips (13.3%), and out of country trips (9.4%).

6.6.2 Perceived Availability of Social Support

Participants completed the Medical Outcomes Study Social Support Survey to better understand the kinds of support that is available at the centre should it be needed (see **Table 6.9**). Positive interactions (such as someone to have a good time with or do something enjoyable or relaxing with) was rated the highest, while affection (such as someone who shows affection or someone to hug) was the lowest. Sixteen participants scored all items as 1 (not at all available) and noted their ratings were because they did not attend the centre to receive support.

Table 6.9 Availability of Social Support at Older Adult Centre

Type of Support	**Average Score ± SD**
Emotional and Informational Support (n=224)	54.40 ± 32.87
Affection (n=222)	49.40 ± 35.87
Positive Interactions (n=224)	61.81 ± 33.23
Overall Functional Social Support (n=222)	57.62 ± 37.16
Average Score (n=219)	55.04 ± 31.16

In general, the various types of social support were positively correlated with centre participation (*r* range from 0.134 to 2.36), showing that those who perceived greater amounts of

support spent more time at the centre and engaged in more activities. Fitness activities, however, did not correlate with any indicator of social support.

Women reported more support than men (mean difference: 12.42; $t(216) = -2.004$, $p = .046$), but no other differences in perceived social support emerged . Surprisingly, living arrangements did not impact level of support from the centre reported. Income and education also did not impact perceived social support. The exception was affectionate support ($t(211) = 2.251$, $p = .025$), whereby those with post-secondary education reported less support (43.96 ± 36.01) compared to those without (54.91 ± 34.66). While low-income status was not significant, employment significantly also impacted overall functional social support ($t(215) = 2.445$, $p = .015$), and average level of support ($t(215) = 1.987$, $p = .048$). In both cases, those still working reported more support than those who were retired.

Drivers reported less support than non-drivers for: emotional/informational support (mean difference = 10.45; $t(222) = 2.036$, $p = .043$), affectionate support (mean difference = 16.67, $t(220) = 3.008$), $p = .003$), positive interactions (mean difference = 12.59, $t(222) = 2.420$, $p = .016$), functional social support (mean difference = 13.66, $t(220) = 2.37$, $p = .021$), and average support (mean difference = 12.52, $t(220) = 2.585$, $p = .010$). While falls status as not related to perceived availability of social support, those who used a cane or a walker reported more affectionate support (mean difference = 18.67; $t(218) = -2.736$, $p = .007$).

Self-rated health and chronic conditions were not related to perceived availability of social support at the centre. Social support was also not associated with indicators of well-being (Pearson's r ranges from -.078 to .090); the exception was that affectionate support was negatively correlated with ABC scores ($r = -.141$, $p = .037$).

6.7 Centres: Primary Place for Recreation and Social Participation

Several indicators were used to examine different ways the centre could serve as a primary place for social participation including: (1) whether or not participants reported the centre was their primary place, and (2) the extent to which the centre was a focal point in out-of-home travel (measured via the travel diaries).

6.7.1 Profiling Respondents who View the Centre as their Primary Place

Participants were asked directly if they considered the centre to be their primary place for recreation, leisure, and social activities. While 10 respondents noted they were unsure because they were too new to the centre, 65.3% (n=190) reported the centre was their primary place while 31.3% (n=91) reported the centre was not their primary place. As shown below (**Table 6.10**), those who viewed the centre as their primary place made more visits ($t(250) = -5.919$, $p < .001$), and spent more hours ($t(250) = -5.780$, $p < .001$). They also reported longer hours per visit ($t(250) = -5.260$ $p < .001$), and participated in more activities ($t(250) = -5.582$, $p < .001$).

Table 6.10 Associations between Perception of the Centre as a Primary Place and Weekly Centre Participation (presented as mean ± SD by category)

	Primary Place (n=190)	**Not Primary Place** (n=91)
Weekly Centre Participation	**n=167**	**n=85**
Visits***	2.83 ± 1.38	1.77 ± 1.26
Hours***	9.75 ± 6.87	4.95 ± 4.70
Hours / Visit***	3.27 ± 1.36	2.31 ± 1.36
Total Activities***	3.09 ± 2.02	1.59 ± 1.40
Fitness Activities***	1.05 ± 1.25	0.54 ± 0.79
Non-Fitness Activities***	2.05 ± 1.82	1.05 ± 1.25

*** $p < .001$

In order to create a profile of those who felt the centre was their primary place, associations with various participant characteristics were examined. Those with significant associations were then explored in a logistic regression predicting the centre as a primary place.

6.7.1.1 Associations with Personal Characteristics

Personal characteristics, including demographics, health, community participation and centre-related factors (i.e., membership length, distance travelled, and social support) by perceptions of centre as the primary place are presented in **Table 6.11**.

Overall, age, sex and living arrangements were not significant. Those with post-secondary education were less likely to report the centre as their primary place ($\chi^2(1) = 17.722$, $p < .001$), while low-income seniors (i.e., those receiving GIS) were more likely to do so ($\chi^2(1) = 7.352$, $p = .007$). Non-drivers were also more likely to report the centre was their primary place ($\chi^2(1) = 18.819$, $p < .001$). Those who viewed the centre as their primary place had lower self-rated health ($t(279) = 2.693$, $p = .007$), and more chronic conditions ($t(279) = -2.335$, $p = .020$). With respect to measures of well-being, VPS scores did not differ between groups; however, those that felt the centre was their primary place experienced more loneliness ($t(271) = -2.530$, $p = .012$), and had poorer balance confidence ($t(232) = 2.197$, $p = .029$). Life-space composite scores did not differ.

Table 6.11 Associations between Participant Characteristics and Perceptions of Centre as Primary Place (presented as mean ± SD (range) or frequency (%) by category).

	Centre Primary Place (n=190)	**Centre Not Primary Place** (n=91)
Demographic and Health Characteristics		
Age	72.19 ± 7.92 (42 – 93)	71.18 ± 7.51 (56 – 89)
Women	151 (80.3%)	71 (78%)
Alone	87 (45.8%)	35 (38.5%)
Post-Secondary Graduate***	71 (39.2%)	58 (66.7%)
Retired	175 (94.1%)	80 (88.9%)
Low Income**	55 (32.2%)	14 (16.3%)
Current Driver***	132 (73.7%)	87 (95.6%)
Poor / Fair Health	32 (16.8%)	9 (9.9%)
Average Self-Rated Health**	3.43 ± 0.92 (1 – 5)	3.75 ± 0.91 (2 – 5)
# Chronic Conditions*	2.17 ± 1.46 (0 – 7)	1.74 ± 1.44 (0 – 8)
Fallen in Past Year	48 (25.5%)	18 (20.0%)
Use Cane/Walker	37 (19.5%)	11 (12.1%)
Activities-specific Balance Confidence*	84.26 ± 18.79	89.45 ± 12.52
Vitality Plus Scale	35.99 ± 7.64	36.68 ± 6.89
Loneliness**	4.26 ± 1.48	3.81 ± 1.21
Life-space Composite	71.35 ± 19.28	74.80 ± 15.35
Restricted Life-Space	46 (28.7%)	13 (17.1%)
Community Participation		
Use Community Centre/Fitness Facility**	63 (33.2%)	46 (50.5%)
Use Private Club***	18 (9.5%)	23 (25.3%)
Volunteer in Community***	105 (56.5%)	72 (79.1%)
Centre-Related Factors		
Centre Member for 6+ Years	63 (38.9%)	33 (42.3%)
Live Within 2km of Centre*	69 (38.5%)	22 (25.3%)
Social Support at Centre[1]		
Emotional/Informational**	60.11 ± 29.27	45.94 ± 36.52
Affectionate***	56.61 ± 33.40	37.33 ± 37.29
Positive Interactions**	68.76 ± 27.94	50.80 ± 39.25
Functional Social Support**	64.73 ± 33.30	46.13 ± 40.97
Average Score**	61.37 ± 26.98	45.03 ± 35.28

Significant group differences: * $p < .05$; ** $p < .01$; *** $p < .001$

[1] data from the MOS-SSS

Those who did not view their centre as their primary place were more likely to report attending other facilities in the community ($\chi^2(1) = 11.107$, $p = .001$), in particular private clubs ($\chi^2(1) = 12.328$, $p < .001$) and other community centres/fitness facilities ($\chi^2(1) = 7.838$, $p = .005$). There were no differences in participation at the legion, or other OACs. Additionally, those who viewed the center as their primary place were less likely to volunteer in the community ($\chi^2(1) = 13.612$, $p < .001$.

A greater proportion of those who felt the centre was their primary place lived within 2km ($\chi^2(1) = 4.574$, $p = .032$). Perceived social support was also higher for emotional/informational support ($t(213) = -3.038$, $p = .003$), affectionate support ($t(211) = -3.768$, $p < .001$), positive interactions ($t(213) = -3.835$, $p < .001$), overall functional social support ($t(211) = -3.512$, $p = .001$), and average level of social support ($t(211) = -3.3704$ $p = .001$).

6.7.1.2 Predicting Whether the Centre is the Primary Place

A hierarchical binomial logistic regression was performed to identify the characteristics that best predicted whether a centre user identified their centre as their primary place for social participation. In the first step, significant demographic and health characteristics were entered. In the second step, community participation was added. In the third step, significant centre-related factors were added; for perceived social support at the centre, the average rating across the full scale was selected for inclusion. Only those factors with significant associations at the univariate level (above) were examined in the regression.

Table 6.12 Predicting whether the Older Adult Centre is the Primary Place for Recreation and Social Activities

	Demographics and Health		**Demographics, Health & Community Participation**		**Demographics, Health, Community Participation & Centre-Related Factors**	
	OR (95% CI)	***p***	**OR (95% CI)**	***p***	**OR (95% CI)**	***p***
Post-Secondary Education	**0.31 (0.15 – 0.64)**	**.001**	**0.34 (0.16 – 0.73)**	**.005**	**0.38 (0.18 – 0.83)**	**.015**
Receive GIS	1.32 (0.53 – 3.30)	.547	1.19 (0.48 – 2.99)	.706	1.09 (0.42 – 2.81)	.865
Current Driver	**0.16 (0.05 – 0.53)**	**.003**	**0.21 (0.06 – 0.72)**	**.014**	**0.24 (0.06 – 0.87)**	**.030**
Self-Rated Health	1.28 (0.81 – 2.05)	.297	1.29 (0.81 – 2.10)	.284	1.24 (0.75 – 2.05)	.406
Chronic Conditions	1.08 (0.93 – 1.42)	.556	1.09 (0.82 – 1.45)	.538	1.11 (0.82 – 1.49)	.504
Balance Confidence (ABC)	0.99 (0.96 – 1.02)	.503	0.99 (0.97 – 1.02)	.771	1.00 (0.97 – 1.03)	.995
Loneliness	**1.46 (1.06 – 2.00)**	**.019**	**1.47 (1.02 – 2.12)**	**.040**	1.37 (0.98 – 1.92)	.065
Attend Private Club			0.45 (0.17 – 1.16)	.100	0.39 (0.14 – 1.07)	.067
Attend Community Centres			**0.49 (0.23 – 1.00)**	**.050**	**0.43 (0.19 – 0.95)**	**.037**
Volunteer			0.46 (0.19 – 1.11)	.083	0.44 (0.18 – 1.09)	.075
Live < 2km from Centre					1.04 (0.42 – 2.56)	.936
Average Social Support					**1.02 (1.01 – 1.03)**	**.006**
Nagelkerke R^2	.242		.302		.350	

N=178

Results of the regression are shown in **Table 6.12.** Having post-secondary education and being a current driver reduced the odds of reporting the centre is their primary place, while loneliness increased the odds of doing so. In the second step, participating in community centres also reduced the odds of believing the centre was their primary place. The final model including demographics, health, community participation and centre-related variables was significant ($\chi^2(12) = 51.51$, $p < .001$), and explained 35% of the variance. Higher education, being a current driver, and participating in other community centres negatively predicted the centre as a primary place, while higher social support was a positive predictor; loneliness was no longer significant.

6.7.2 Centre Participation as a Focal Point in Out-of-Home Travel

Travel diary data was used to examine centre participation in relation to all other out-of-home travel. Indicators examined included: the proportion of trips that included a stop at the centre, the proportion of hours away from home that were spent at the centre, and the proportion of trips for recreation specifically that were to the centre. As shown in **Table 6.13**, nearly one third of trips from home included a stop at the centre, and participants spent approximately one third of their out-of-home travel time (i.e., hours) at the centre. Around two-thirds of trips for recreation were to participate at the centre. These indicators showed moderate to strong correlations to actual centre participation.

Table 6.13 Centre Participation as a Focal Point in Out-of-Home Travel (presented as mean ± SD (range)).

	% Trips to Centre (n=261)	**% of Time at Centre** (n=261)	**% Recreation Trips at Centre** (n=257)[1]
Proportion	27.29% ± 18.46% (0 – 92.86%)	27.69% ± 19.77% (0 – 94.58%)	66.59% ± 29.56% (0 – 100%)

[1] Excludes four participants who made zero trips for recreation during the two-week period.
*** $p < .001$

Personal characteristics, including demographics, health and community participation were examined to better understand which factors were associated with the centre being a greater focal point in out-of-home travel. Associations with centre-related factors (including membership length, distance travelled, social support, and perception of the centre as their primary place) were also examined. Factors with significant associations were then used to build regression models predicting the centre as a focal point. Proportion of trips that included the centre and proportion of out-of-home travel time spent at the centre showed nearly identical associations with personal characteristics; therefore, only data for the proportion of trips is described below.

6.7.2.1 Associations with Personal Characteristics

Associations with demographic and health characteristics, community participation and centre-related factors are shown in **Table 6.14.** There were no significant associations with age or sex, but those living alone made a greater proportion of their recreation trips to the centre ($t(253) = 2.637$, $p = .009$). The centre was less of a focal point in out-of-home travel for those with post-secondary education compared to those who graduated high school or did not graduate, with significant findings for both proportion of all trips ($t(248) = 3.969$, $p < .001$) and proportion of recreation trips ($t(244) = 3.441$, $p < .001$). Work status, low-income status and driving status were not significant. Those who used a cane or walker made a greater proportion of their recreation trips to the centre ($t(253) = -2.792$, $p = .006$), but falls status was not significant.

Self-rated health was not significant; however, the total number of chronic conditions showed a positive but weak correlation with the percentage of recreation trips that included the centre ($p = .006$). Several significant correlations with measures of well-being also emerged; balance confidence was negatively correlated with the proportion of recreation trips that included the centre, while loneliness showed positive correlations with both indicators. Vitality plus

scores were not significant. Life-space showed negative correlations with both indicators, but only the proportion of all trips that included the centre was significant ($p = .011$); however, those with a restricted life-space (i.e., life-space composite scores under 60), had a greater proportion of recreation trips that included the centre ($t(237) = 2.030$ $p = .043$).

Participation in other facilities was important. Attending other community centres/fitness facilities significantly reduced participation at the centre for both the proportion of all trips ($t(257) = 3.689$, $p < .001$) and the proportion of recreation trips ($t(257) = 7.813$, $p < .001$). Participating at a private club and the legion did not impact the overall amount of trips to the centre, but did reduce the proportion of trips for recreation purposes that included the centre *(*$t(253) = 2.974$, $p = .003$ and $t(253) = 2.592$, $p = .010$, respectively).

With respect to centre-related factors, distance travelled to the centre was not significant; however, long-term members (of six or more years) spent a greater proportion of their trips from home going to the centre ($t(244) = -3.114$, $p = .002$). Furthermore, the centre was a greater focal point in out-of-home travel for those who believed the centre was their primary place, for both proportion of trips ($t(250) = -6.688$, $p < .001$) and proportion of recreation trips ($t(247) = -6.034$, $p < .001$). Availability of emotional/informational support, affectionate support, positive interactions, overall functional support, average level of social support were positively correlated with the percentage of trips that included the centre but were not correlated with the proportion of recreation trips

Table 6.14 Associations between Centre as a Focal Point in Out-of-Home Travel and Participant Characteristics (presented as mean ± SD or Pearson's *r* by category)

	% Trips to Centre	% Recreation Trips to Centre
Age	.049	.086
Sex		
Male	27.59 ± 20.59	66.90 ± 30.12
Female	27.20 ± 17.80	66.40 ± 29.72
Living Arrangements		
Alone	29.68 ± 17.92	**72.15 ± 27.85**
Spouse/Others	25.54 ± 18.71	**62.37 ± 30.35**
Highest Education		
High-School/Non-Graduate	**31.53 ± 18.44**	**72.52 ± 26.88**
Post-Secondary Graduate	**22.54 ± 17.28**	**59.77 ± 31.22**
Employment		
Retired	27.59 ± 18.49	66.72 ± 29.41
Working	23.53 ± 18.20	65.26 ± 24.12
Low Income		
Receive GIS	29.48 ± 18.77	66.10 ± 31.38
Do Not Receive GIS	26.53 ± 18.46	66.73 ± 29.29
Driving Status		
Current Driver	26.35 ± 18.46	66.77 ± 29.06
Non-Driver	30.80 ± 18.50	64.84 ± 31.79
Mobility Device		
No Mobility Device	26.67 ± 18.80	**64.28 ± 29.75**
Use Cane/Walker	30.35 ± 16.51	**78.07 ± 26.60**
Falls History		
No Falls in Past Year	26.28 ± 17.06	64.59 ± 30.03
Fallen in Past year	29.68 ± 20.08	72.27 ± 28.23
Self-Rated Health	.037	-.046
# Chronic Conditions	.055	**.171**
Balance Confidence (ABC)	-.093	**-.180**
Vitality Plus Scale	-.024	-.099
Loneliness	**.161**	**.215**
LS-Composite	**-.164**	-.115
Restricted Life-Space		
Restricted	30.68 ± 17.59	**73.51 ± 26.79**
Unrestricted	26.17 ± 18.05	**64.66 ± 30.00**
Attend Community Centres		
Yes	**30.68 ± 19.36**	**77.38 ± 24.05**
No	**22.25 ± 15.79**	**50.83 ± 30.07**
Attend Private Clubs		
Yes	28.10 ± 18.53	**68.90 ±29.53**
No	23.03 ± 17.64	**53.94 ± 27.35**

	% Trips to Centre	% Recreation Trips to Centre
Attend Legion		
Yes	27.35 ± 18.99	**53.26 ± 20.22**
No	26.90 ± 13.81	**68.26 ± 30.26**
Membership Length		
5 or fewer years	**24.54 ± 16.11**	65.25 ± 30.70
6 or more years	**31.94 ± 21.00**	69.33 ± 27.40
Distance to the Centre		
Live within 2km of Centre	26.25 ± 17.08	62.29 ± 29.25
Live 2km or Further from Centre	27.90 ± 19.14	68.97 ± 29.56
Centre as Primary Place		
No, Centre Not Primary Place	**17.57 ± 12.89**	**51.72 ± 31.08**
Yes, Centre is Primary Place	**32.73 ± 18.77**	**74.21 ± 25.90**
Social Support at the Centre		
Emotional/Informational	**.145**	-.006
Affectionate	**.192**	.059
Positive Interactions	**.231**	-.001
Functional Social Support	**.201**	.008
Average Score	**.191**	.012

Significant associations bolded.

6.7.2.2 Predicting Centre as a Focal Point in Out-of-Home Travel

Two hierarchical multiple regressions were conducted to identify the factors that best predicted the percentage of weekly trips that included the centre and the percentage of trips for recreational purposes that included the centre. For each regression, only variables with significant associations (above) were included. The first model included demographic and health characteristics; community participation was added in the second step. In the final model, significant centre-related factors (such as membership length and social support) were included. For perceived social support at the centre, the average rating across the full scale was entered.

The results of the regression for percentage of trips is shown in **Table 6.15.** The final model was significant ($F(7,181) = 8.098$, $p < .001$) and explained 21% of the variance (adjusted $R^2 = .209$). In the first step, having post-secondary education significantly reduced the proportion of trips that included the centre, while loneliness had the opposite effect. Education and

loneliness remained significant when adding participation at community centres. In the final step, education was no longer significant; however, loneliness, being a long-term member, reporting higher levels of social support, and believing the centre is their primary place positively predicted the proportion of trips from home that were to the centre.

Table 6.15 Predicting the Percentage of Trips from Home that Include the Centre

	Demographic and Health		**Demographic, Health, & Community Participation**		**Demographic, Health, Community Participation & Centre Factors**	
	B	SE	B	SE	B	SE
Post-Secondary Education	**-6.71****	**2.54**	**-5.85***	**2.56**	-3.13	2.47
Loneliness	**2.81****	**0.89**	**2.49****	**0.91**	**2.01***	**0.88**
Life-Space (Composite)	-0.13^{+}	0.07	-0.12	0.07	-0.10	0.06
Attend Community Centres			**-5.03***	**2.66**	-4.06	2.53
Centre Member > 5 Years					**4.74***	**2.45**
Centre Primary Place					**10.07*****	**2.81**
Perceived Social Support					**0.91***	**0.04**
Adjusted R^2	0.095		0.108		0.209	

B = Unstandardized regression coefficient; SE = standard error of the coefficient
* $p < .05$; ** $p < .01$; *** $p < .001$; $^{+}$ trend $p < .07$.
N = 189

Table 6.16 shows the results of the regression predicting the proportion of recreation time spent at the centre. Use of mobility devices was excluded from the model due to strong associations with balance confidence. The final model was significant ($F(10,197) = 7.881$, $p < .001$, and explained one quarter of the variance (adjusted $R^2 = 0.249$). In the first model with demographic and health characteristics, post-secondary education was a negative predictor while loneliness was a positive predictor. These factors were no longer significant in the second model when adjusting for participation in community facilities. Of the community facilities included, only participation at other community centres was significant, reducing the proportion of recreation trips at the centre. The perception of the centre as their primary place was included in the final model, and significantly increased the proportion of recreation trips to the centre.

Table 6.16 Predicting the Proportion of Recreation Trips that Include the Centre

	Demographic and Health		**Demographic, Health, & Community Participation**		**Demographic, Health, Community Participation & Centre Factors**	
	B	SE	B	SE	B	SE
Live with Spouse/Others	-5.63	4.27	-5.54	4.01	-5.61	3.93
Post-Secondary Education	**-7.48***	**3.93**	-4.71	3.70	-2.60	3.70
Chronic Conditions	2.59	1.49	2.05	1.39	1.99	1.37
Balance Confidence	-0.51	0.13	-0.01	0.12	0.01	0.12
Loneliness	**3.77***	**1.49**	2.45	1.43	2.05	1.41
Restricted Life-Space	5.28	4.73	2.88	4.48	2.11	4.40
Attend Community Centres			**-20.20*****	**3.83**	**-18.88*****	**3.79**
Attend Private Club			-7.61	5.22	-4.42	5.24
Attend Legion			-9.25	6.04	-8.69	5.93
Centre Primary Place					**11.99*****	**4.11**
Adjusted R^2	0.101		0.221		0.249	

B = Unstandardized regression coefficient; SE = standard error of the coefficient
* $p < .05$; ** $p < .01$; *** $p < .001$.
N = 208

Chapter 7: Discussion

7.1 Introduction

Research consistently shows that ongoing social participation is essential for well-being in older adulthood (e.g., Holt-Lunstad et al., 2015; Holt-Lunstad et al., 2010; James, Boyle, Buchman, & Bennett, 2011). While social participation encompasses different activities with varying degrees of interactions with others (Levasseur et al., 2010), the focus of the present study was on recreation and social activities at community-based older adult centres (OACs).

As reviewed in **Chapter 2**, staff and participants believe that attending such centres improves social and physical well-being (e.g., Novek, Menec, Tran, & Bell, 2013; OACAO, 2013); however, apart from studies on the nutritional benefits of meal programs, evidence of benefits is largely anecdotal (based on retrospective self-reports of participants). In Ontario, OACs are viewed as *"community hubs"* that help seniors remain active and connected (Government of Ontario, 2015, 2016, 2017), and are considered a key strategy for combatting social isolation and loneliness (OACAO, 2013). Presently, little is known about the extent to which OACs actually reach socially isolated and lonely seniors.

To learn more about older adults who use OACs, this study conducted a secondary analysis of two datasets collected by the Older Adult Centres' Association of Ontario (OACAO), the provincial advocacy body for Ontario-based centres. As described in **Chapter 4**, the data for the BBTP was collected between 2008 and 2009, while the data for the MC-GEP was collected between 2016 and 2017, nearly a decade later. The first database permitted a comparison of centre users versus non-users, while the second database examined patterns of centre usage and overall out-of-home travel. The MC-GEP project also provided the opportunity to explore the extent to which OACs in Ontario are attracting lonely seniors, as well as the extent to which

these centres are the primary place for recreation and social activities in their communities. Detailed results for each database are contained in Chapters Five and Six, respectively.

This chapter discussing the key findings, beginning with the profile of OAC centre users. The third section compares users and non-users. The following sections address participation patterns, social connections and centre support. This is followed by a profile of older adults who view the centre as their primary place for recreation and social activities, while Section 7 looks at non-user perceptions of OACs. Section 8 discusses the primary study limitations, although various limitations are considered throughout the chapter. The final sections present implications of the findings for research and practice followed by overall conclusions. Throughout the discussion, efforts are made to integrate the findings from both studies in order to present an overall picture of older adult centre users and participation patterns in Ontario.

7.2 Profile of Older Adult Centre Users

7.2.1 Demographic Characteristics

Older adult centre users in Ontario were predominately female (BBTP: 74.6%; MC-GEP: 79.7%), which is consistent with previous research (e.g., Pardasani, 2010; Strain, 2001; Turner, 2004) and other OACAO projects, including the EPC Impact Survey and the most recent Member Profile Survey (OACAO, 2013; Sheppard et al., 2016). Age distributions were similar between the two samples, with most participants aged 66-75 (BBTP: 42.2%: MC-GEP: 46.2%), or 76-85 (BBTP: 34.8%; MC-GEP: 28.6%); however, the MC-GEP sample had a slightly larger portion of participants aged 65 or younger (BBTP: 14.7%; MC-GEP: 21%). In both samples, less than 10% were over age 85 (BBTP: 8%; MC-GEP: 4.1%). While the age distributions are consistent with other OACAO surveys (OACAO, 2013; Sheppard et al., 2016), the current samples were younger than those reported in older studies. For instance, Turner (2004) found

only 7% of senior centre users were under age 65 and nearly half were 75-84; Pardasani (2004a, 2010) and Strain (2001) also both reported much higher proportions of senior centre participants aged 75-84 (40.1% to 49.4%) and 85 or older (13.7% to 19.3%). It could be that OACs in Ontario attract younger seniors compared to the US (Pardasani, 2004b, 2010; Turner, 2004) and Manitoba (Strain, 2001)., This difference could also related to the fact that most other research was conducted in the 1990's (e.g., Strain's data was collected in 1991/1992), and senior centres may have experienced a shift in demographics to younger seniors as a result of offering innovative and active programming (Pardasani & Thompson, 2012).

There was a relatively equal split between those who lived alone (BBTP: 41.5%; MC-GEP: 44%) and those who lived with a spouse (BBTP: 48.9%; MC-GEP: 46.4%). These findings are consistent with findings from Turner (2004) and Strain (2001). Pardasani (2010) reported a much higher proportion of senior centre participants lived alone, but this is likely related to the fact that his sample included a much higher proportion of respondents over age 85 (19.3%).

Only one-quarter of users identified as low-income (BBTP: 26% earn less than $25,000 per year; MC-GEP: 26.9% receive GIS), which is considerably lower than previous studies that found about 80% earned less than $25,000 per year (Pardasani, 2010; Strain, 2001). Higher average incomes in the current samples are not surprising given that 80% had at least high school education, and around 40% had attended college or university. Compared to other samples (e.g., Strain's and Pardasani's in which only 20% had more than 12 years of education), the OAC users in Ontario were considerably more educated.

Membership and/or participation fees may also explain why OACs in Ontario are not attracting many low-income earners. For instance, the 2015 survey of OACAO member centres showed that 95% charged membership fees (ranging from $5 to $285 per year) and/or program

registration fees (Sheppard et al., 2016). In the MC-GEP, membership fees averaged $40 per year (range from $10 - $200) and registration fees were as high as $120 for a sessional program. It is not clear how these fees compare to OACs in other jurisdictions, as other provincial associations have not surveyed their member centres to our knowledge (Dubé et al., 2016).

7.2.2 Health and Well-being

In general, self-rated health was reportedly good; however, ratings were lower among the BBTP participants, as around a quarter rated their health as very poor/poor/fair, compared to only 15% in the MC-GEP that rated their health as poor/fair. Ontario users had higher self-rated health compared to those from Manitoba, of which a third reported bad/poor/fair health (Strain, 2001). Direct comparisons are challenging as the rating scales were not identical; however, these findings may suggest that perceived health status in senior centre users has improved from the early 1990's (Strain's study), to 2008-2009 (BBTP) to 2016-2017 (MC-GEP).

Findings from the MC-GEP provided insight into use of mobility devices, falls history, and balance confidence. In total, 40% of senior centre participants used a mobility device such as a cane or a walker, and approximately one quarter had experienced a fall in the past year. The average score on the ABC scale was 85.84 ± 17.41, indicative of more highly functioning, physically active older adults (Myers et al., 1998). Also consistent with prior research, balance confidence was lower among fallers and those using mobility devices (e.g., Cleary & Skornyakov, 2017; Myers et al., 1998). Balance confidence was also positively associated with life-space.

Only a few previous studies have examined these characteristics in senior centre samples. For instance, Pardasani (2010) found that 35% of centre users required assistance when walking. Li et al. (2008), meanwhile, reported approximately one quarter had fallen in the past six months

and two thirds had fears of falling; however, Li's sample consisted of centre users who had signed up for a falls prevention program.

Balance confidence scores were higher than those reported in some samples of community-dwelling seniors (Cleary & Skornyakov, 2014, 2017; Huang & Wang, 2009), but similar to those in samples of older adults recruited from senior centres and exercise-based community programs such as aqua-fit and walking groups (Myers et al., 1998). While improvements in balance and confidence as a result of various exercise interventions have been well documented in the gerontology literature, baseline levels (i.e., room for improvement) and extent of participation are important. For example, King et al. (2002) found that balance confidence improved after six months of exercising at an OAC; however, her intervention was led by a physiotherapist (which is not the norm) and targeted participants with low mobility. Of interest, OAC users who participated only in non-fitness programs had lower balance confidence (mean 82.37 ± 20.79) than those who did fitness programs (mean 87.70 ± 15.26); however, overall balance confidence in both groups was still quite high.

General psychophysical well-being as measured by the Vitality Plus Scale (e.g., energy level, mood, sleep quality, appetite) was good (Myers et al., 1999), with an average score of 36.24 ± 7.43. In addition to a significant correlation with balance confidence scores, VPS scores were positively correlated with life-space and inversely correlated with loneliness scores. While the VPS was originally designed to be used in exercise programs, scores did not differ between participants in the GEP study who did at least one exercise class at their centre versus those who did only non-fitness classes.

Loneliness scores were generally low (4.13 ± 1.42), and similar to those reported in population-based studies of older adults using the same measure (Hughes et al., 2004; Luo,

Hawkley, Waite, & Cacioppo, 2012; Steptoe et al., 2013). Around 21% of the current sample reported high levels of loneliness (i.e., scores ≥ 6), similar to previous reports (Steptoe et al., 2013). This proportion is also similar to rates reported by Newall and colleagues (2015) who found that 24% identified as lonely using a single-question on whether they were lonely (not at all, moderately, severely, or extremely). Compared to data from the CLSA wherein 10% were lonely (Menec et al., 2019), the current sample had a greater proportion of people who are somewhat (48.8%) or very (21.8%) lonely. While it could be that OAC users experience more loneliness than the general Canadian population of older adults, method variance must be considered as the CLSA measured loneliness using a single-item from a depression scale.

7.2.3 Community Participation

Overall, life-space mobility was high, reflecting frequent travel beyond the neighbourhood. On average, LS-C scores were approximately 10 points higher than previously reported for community-dwelling seniors (e.g., Allman et al., 2006; Baker et al., 2003; Portegijs et al., 2014; Rantakokko, Portegijs, Viljanen, Iwarsson, & Rantanen, 2013). Relatedly, only one quarter of the sample had a restricted life-space (defined as composite scores less than 60), compared to almost 50% reported in other research (Rantakokko et al., 2015). It is not clear whether OACs attract seniors with greater mobility, or if centre participation promotes greater life-space. Over three quarters of the sample travelled more than 1km to attend their centre, indicating that for many OAC users, travel beyond their neighbourhood is required.

Users made an average 10 trips per week, for a total of 30 hours away from home. The majority of trips taken (41%) were for recreation purposes (including attending the centre), followed by trips for errands (35%) and informal social activities like visiting friends (22%).

With respect to trips specifically for recreation purposes, about 25% went only to their centre over the two-week period, whereas 75% engaged in at least one other recreation activity at a different organization or group. Importantly, the proportion of trips to the centre was nearly double that to other facilities (27% compared to 16%), suggesting that even among those who attended other organizations, the centre was still a focal point for recreation and social activities.

Around 50% of centre users specifically attended another community-based recreation facility (such as a community centre, arena, or bowling alley), usually to engage in activities (e.g., hockey league) or to use facilities (e.g., pool) not available at their centre. While senior centres may be striving to offer innovative and diverse programs (e.g., Pardasani & Thompson, 2012), funding and space are two major limitations (Pardasani & Goldkind, 2012; Pardasani & Sackman, 2014). Depending on the level of interest by their members, OACs might consider consider forming sports teams (e.g., bowling, baseball, hockey) and joining local leagues, or partnering with community-centre pools (e.g.,YMCA's) to offer weekly swim classes.

Participation in community-based recreation facilities (averaged to one week) was much higher in the current sample compared to Menec (2003), who found that only 18% of seniors in Manitoba had participated in organized recreation groups, and 16% in mass activities in the past week. Participation was also higher than that reported by Richard et al. (2013), who found that only 27% of seniors in Montreal attended activities at a community/leisure centre at least once per week. Thus, it appears that OAC users are more active in recreation and social activities outside the home compared to other community-dwelling seniors.

In addition to attending recreation facilities, many OAC users attended local clubs or groups (e.g., choir; 21%), participated at a legion (10%), attended an educational event (8%), or went to a private club (e.g., golf course; 3%). Participation rates were low, similar to previous

research (Lennartsson & Silverstein, 2001; Menec, 2003; Richard et al., 2013; Silverstein & Parker, 2002). Comparatively, trips to engage in social activities with friends and/or family (e.g., family gathering, visiting friends; 80%) and to eat out at restaurants (70%) were much higher, consistent with prior findings (Lennartsson & Silverstein, 2001; Menec, 2003; Richard et al., 2013; Silverstein & Parker, 2002; Strain et al., 2002).

Volunteer rates in the community (i.e., at organizations other than the centre) differed between the BBTP and MC-GEP; over 80% of the BBTP reportedly volunteered compared to two thirds in the MC-GEP; relatedly, only 15% of the MC-GEP engaged in volunteer activities (outside the centre) according to their two-week travel diaries. It is likely that the two-week monitoring period was not long enough to capture less frequent volunteer roles such as monthly board meetings.

7.2.4 Transportation Use

Consistent with prior research (e.g., Novek et al., 2013; Turcotte, 2012), the majority of centre users preferred to drive themselves (BBTP: 71.8%; MC-GEP: 74.2%). Analyses from the BBTP showed that other transportation options such as walking, public transit, or rides were seldom used to get to and from the centre; however, MC-GEP users reported that they walked or biked regularly to get around, which may indicate this sample was generally quite active.

The diaries identified actual modes of transport used; findings were quite consistent with self-reports. During the two weeks, over 80% drove at least once; driving was used for 55% of all trips. Similar to previous research (Dahan-Oliel et al., 2010; Turcotte, 2012), public transit was used by a small portion of the sample and accounted for less than 5% of all trips. This is not surprising, as older adults frequently describe public transit as inconvenient due to wait times and inflexible schedules (e.g., Glasgow & Blakely, 2000); furthermore, six MC-GEP facilitators

noted that there was no public transit in their communities or that it was infrequent with limited routes.

Getting rides from friends and family was identified as a "main" mode of transit for less than 20%; however, three-quarters received a ride at least once during the monitoring period. This was higher among those reporting their travel patterns during the winter months (versus the spring). It is likely that other transportation options were less desirable in the winter months, which is consistent with other research showing that inclement weather during winter makes it more difficult for older adults to drive or walk places (e.g., Clarke, Yan, Keusch, & Gallagher, 2015; Li, Hsu, & Fernie, 2013; Myers, Trang, & Crizzle, 2011). Unfortunately, participants did not consistently provide weather information in their travel diaries, nor did everyone date their diaries precluding examination using weather archives as has been done in prior studies (e.g., Myers et al., 2011).

7.3 Comparison of Users and Non-Users

The BBTP dataset was used to identify personal characteristics (e.g., demographics, health and community engagement) that best predicted participation at an Ontario-based OAC. Consistent with previous research, participation was predicted by older age (Calsyn & Winter, 2000; Schneider et al., 2014), lower education and income (Boen et al., 2010; Calsyn et al., 1996; Krout et al., 1990; Strain, 2001), and being retired (Calsyn et al., 1996). Centre users were more likely to live alone while non-users were more likely to live with a spouse (e.g., Pardasani, 2010; Strain, 2001).

Self-rated health and physical activity levels were both significant predictors of OAC participation: those with better health and higher levels of physical activity were more likely to be members. This finding is consistent with previous research that found seniors with poorer

physical and/or mental health and ADL/IADL limitations were less likely to participate (Calsyn & Winter, 2000; Krout et al., 1990; Strain, 2001). While participation may result in improved health and physical functioning (e.g., Fitzpatrick et al., 2008; Sarkisian et al., 2007; Swan et al., 2013), it is also possible that OACs attract seniors who are active and healthy when they join. As the majority of users had been members for at least a year, they likely have already benefitted from programs, and continued participation may help maintain activity levels and functioning. Further research is needed to examine changes in physical activity levels, functional fitness, and health indicators (e.g., blood pressure) as a result of centre participation; however, controlling for physical activity pursuits outside the centre (i.e., attribution) will be challenging.

While some studies found that social contact with friends and family positively predicted centre participation, other studies did not find support for this (Boen et al., 2010). Unfortunately, the BBTP survey did not ask about social contacts; however, it did examine participation in church and other community-facilities, as well as volunteerism. Consistent with previous findings (Schneider, Chapman, & Voth, 1985; Walker et al., 2004), attending church and private clubs positively predicted participation at OACs in Ontario.

Volunteering in the community reduced the odds of being a centre member. It could be that those who volunteer are too busy to join a centre, or that having established volunteer roles reduces their motivation for joining a centre. For instance, two thirds of users agreed or strongly agreed that they joined the centre to help others, and one third agreed or strongly agreed they joined to take on additional responsibilities and status (e.g., join the board, facilitate a class).

Some research shows that rural dwellers are less likely to participate at OACs (Calsyn & Winter, 2000), while other studies report the opposite (Pardasani, 2010; Strain, 2001). The current study found no differences; approximately 90% of both users and non-users lived in

urban/suburban locations and 10% in rural locations. The 2015 Member Profile Survey from the OACAO found that centres served a mix of both urban and rural catchment areas, which may explain the similar distributions (Sheppard et al., 2016). Additionally, in the BBTP, participating centre users were asked to help recruit neighbours, friends, and family who did not use the centre. People in their social networks are likely to have lived in the same area (i.e., urban or rural), especially given interviews were conducted at the same centres.

Unfortunately, the BBTP non-user survey did not include any transportation related questions; thus, it was not possible to examine the role of transportation on senior centre membership. One study reported a small subset of people did not attend their local centre due to transportation problems (Ashida & Heaney, 2008), and findings from qualitative interviews with 60 senior centre attendees in Manitoba found that transportation to and from the centre was a barrier to attendance (Novek et al., 2013). The BBTP also showed that proximity and primary modes of transportation to the centre impacted participation patterns, and that 20% of users would attend more often if better transportation were available.

7.4 Older Adult Centre Participation Patterns

Both datasets were used to examine patterns of participation at OACs. In the BBTP, participation patterns were retrospectively estimated, while the MC-GEP collected this data via travel diaries. Participation patterns are summarized and discussed below with respect to adherence, frequency, intensity, and nature of activities.

7.4.1 Adherence

About one-quarter of Ontario OAC users had been members for 11+ years, which is similar to reports by Krout (1991). The proportion of 6-10 year members was twice as high in the

BBTP compared to the MC-GEP (30% versus 15%), while the MC-GEP had a greater proportion of 1-5 year members (52% versus 40%).

Previous research has not consistently identified a set of factors associated with centre adherence. In this study, age was significant, whereby longer-term members were older than newer members. Income was also important; however, opposite relationships were observed in the two datasets. In the BBTP study, lower income was associated with longer-term membership, but in the MC-GEP, new members were more likely to report budgetary concerns and receive the guaranteed income supplement. Other factors associated with membership length emerged in the MC-GEP but not in the BBTP sample: newer members were more likely to be women, non-drivers, and live within 2km of the centre.

These findings may suggest that centres have been reaching seniors who may be at risk for social isolation, including low-income seniors and non-drivers. The fact that newer members were more likely to be women also indicates that centres have not yet found effective strategies to recruit older men. An important consideration with respect to adherence is that centres varied with respect to length of operation. In fact, in the MC-GEP, three centres (B, F, and J) had opened within seven years of data collection. It could be that these newer centres were built to be more accessible for at-risk seniors. For instance, Centre B is located on the main street of a small town; Centre F is part of a community support service agency that services a low-income neighbourhood; and Centre J is part of a seniors community-housing building. Unfortunately, other studies (including the BBTP) do not report these centre characteristics.

7.4.2 Frequency

Frequency of attendance was generally similar across the two samples. In the BBTP, over half of users attended multiple times per week. Relatedly, MC-GEP participants recorded an

average of 2.5 trips per week in their diaries. These rates are similar to those reported by Turner (2004, 2006) but are lower than those by Ralston (1991) who found that 49% attended daily.

Centre users in Ontario attended more often compared to other Canadian studies where users attended about once per week or less often (Lai, 2001; Strain, 2001). Both these studies used data collected in the early 1990's so it could be that frequency of attendance has increased over the past three decades. Strain's study also enquired about frequency of participation over the past six months. It is important to consider the time of year when data is collected as Gavin and Myers (2003) found that enrollment and attendance in senior centre programs was significantly lower in the spring and summer months compared to winter and fall.

The BBTP showed that women and those who lived alone were more likely to attend multiple times per week, which is similar to findings reported by Schneider et al. (2014). Also consistent with prior studies (Miner et al., 1993; Sabin, 1993), those earning less than $25,000 per year (BBTP) and receiving GIS (MC-GEP) reported more frequent attendance. In the MC-GEP, post-secondary education was related to lower frequency of attendance. It could be that those with higher education and income levels have the means to access more expensive programming offered in the community and thus visit the centre less often. Indeed, participation at private clubs (that often have high membership fees, such as golf courses) reduced the odds of attending the centre multiple times per week in the BBTP (but not the MC-GEP).

Similar to previous research (Miner et al., 1993; Sabin, 1993; Strain, 2001) health was generally not associated with frequency of attendance. The MC-GEP project did not find any significant associations between visits per week and health indicators such as chronic conditions, falls history, use of mobility devices, balance confidence, or vitality. There is, however, some evidence from the MC-GEP to suggest that seniors who are lonely attend more frequently. More

research is needed to further examine this relationship, including how loneliness may change as a result of center participation.

The BBTP dataset showed that residential location was a strong predictor of attendance frequency, with those in urban/suburban locations attending more often than rural dwellers. This is likely due to accessibility, as those living in urban settings may live closer to their centre and have more transportation options (e.g., walking, public transit). Indeed, living in close proximity to the centre was associated with more frequent participation; however, distance travelled was not a significant predictor after adjusting for other variables, like residential location.

While the BBTP project found that a greater proportion of those who walked or biked to the centre attended daily, transportation was not a significant predictor after accounting for other variables like distance travelled or location. The MC-GEP also did not find any differences in frequency of attendance between drivers and non-drivers. Despite this, 20% of the BBTP sample reported they would attend the centre more often if they had better transportation options. These individuals were more likely to live alone, live in dwellings other than houses or apartments, and use other forms of transportations such as taxi's or accessible transit. Centres should explore additional options (e.g., centre transit, ride sharing) to address these barriers.

This is one of the first studies to examine how community engagement impacts OAC usage, and findings generally indicated that attending other community-based facilities predicted less frequent participation. In particular, participating at private clubs reduced frequency of attendance in the BBTP sample, while attending other community centres resulted in significantly fewer OAC visits in the MC-GEP sample.

7.4.3 Intensity

Participants spent roughly three hours per visit at their OAC, consistent with two previous studies that have reported on intensity (Aday et al., 2006; Rhynes et al., 2013). The MC-GEP further found that participants were at the centre approximately eight hours per week.

More intense participation was found for women, those who lived alone, those with less education, low-income seniors and those who experienced loneliness. Volunteering in other organizations was related to an increased likelihood of spending five or more hours per visit in the BBTP, while in the MC-GEP, participating in other community centres was related to reduced length of centre visits, as well as total hours spent at the centre each week. Proximity to the centre, location, and mode of transportation were also found to be significant. Specifically, in the BBTP, more intense participation was predicted by living in urban areas close to the centre.

7.4.4 Types of Activities

Most OAC users in Ontario participated in up to four different types of activities (e.g., exercise, music, crafts) at their centre, for an average of 2.5 programs each week; those with less education, non-drivers as well as legion participants engaged in more activities at the centre. These results are much lower than what has been previously described (Aday et al., 2006; Krout, 1991; Ralston, 1991) where participants reported which activities they ever did from a list of all the programs that were available. These studies did not account for the fact that not all programs will be offered on a regular basis (e.g., activities like special events and education programs may only be offered monthly) and some may be seasonal.

Walker et al. (2004) reported that OAC participants engaged in about three activities each visit; comparatively, the MC-GEP found that participants engaged in an average of one activity per visit. One reason for this difference might be that 16 of the 18 centres examined in Walker's

study offered a noon-time meal program. Research at one OAC in Ontario found that once their centre implemented a meal program, participants stayed at the centre longer, and attended activities in the afternoon (i.e., after lunch) when they otherwise would have left (Sheppard, Dube, Ducak, & Myers, 2018). While many of the centres in the MC-GEP had an on-site café, only one centre offered a meal program. The presence of a meal program is important for encouraging higher levels of participation throughout the day.

The data showed that current users participated in a significantly greater variety of programs compared to those from a decade ago (MC-GEP: 3.57 ± 1.99 activities, compared to the BBTP: 2.86 ± 1.68 activities). The most popular programs (i.e., fitness, cards and games, special events, and trips), however, have remained relatively stable and consistent with previous research (Turner, 2004, 2006).

Participation in several types of programs has increased over the past decade, including: educational seminars and workshops (11.5% in the BBTP compared to 27.3% in the MC-GEP), arts and crafts (17.7% versus 26.1%), and computers (11.5% compared to 17.8%). Other programs have remained consistently unpopular, with around 10% or less accessing language classes, intergenerational programs, and discussion groups. While it could be that special interest programs are not offered at all centres, the recent OACAO member profile survey did find that less popular programs such as music (65% of centres) intergenerational programs (50% of centres) were common (Sheppard et al., 2016). Unfortunately, neither the 2015 survey nor the current study, examined participation rates in relation to program offerings.

Findings suggested that OAC centre users participated in a greater number of non-fitness compared to fitness programs. In fact about half participated solely in non-fitness programs. These participants were more likely to be older, less educated, with lower levels of perceived

physical activity and male. To increase participation among older men, centres should consider offering fitness activities more tailored to their interests (Hasmanová Marhánková, 2014), such as intramural sports (Marken, 2005). (Hasmanová Marhánková, 2014)

Interestingly, the MC-GEP showed that around 13% of participants attended their centre at least once for the expressed purpose of socializing with staff and peers (and not to participate in a particular program). The characteristics of this sub-group did not differ from those who always participated programs during their visits; however, they did make more trips to the centre each week (3 versus 2.3), participated in nearly double the number of activities (4.1 versus 2.3), and reported more social support from the centre. The travel diaries also revealed that many people arrived at the centre up to an hour before their program started and/or stayed well after their program ended. This type of informal participation, which emphasizes the importance of opportunities for socialization, has not been previously documented although it is widely assumed to occur.

7.5 Social Connections and Support at the Centre

Social connections are an important feature of OACs, as evidenced by the findings above; furthermore, many people went early or stayed late to socialize with their peers. The MC-GEP provided further insight into centre friendships, loneliness, and the types of social support available at the centre.

7.5.1 Centre Friendships

Around half of users knew someone at the centre prior to joining; indeed, the BBTP report identified that the “tell a friend” method was the most widely adopted promotional tool to recruit new members (OACAO, 2010). Similar to previous research (Aday et al., 2006; Fulbright, 2010; McGovern et al., 2016; OACAO, 2013), centre friendships were important, with almost

everyone reporting that they had made new friends since joining. Aday et al. (2006) reported that female centre users who lived alone made an average of 13 friends. In the current study, the number of friends ranged from one to 25, most people (n=150) used phrases such as *"many"* or *"several"* to describe the number of friends they made.

Aday et al. (2006) found that virtually all women who lived alone reported spending time with their centre friends outside the centre, compared to only two-thirds of the current sample (which looked at males and females together). Popular activities with centre friends were similar, with the most common activity being going to restaurants together, followed by attending social events, shopping, playing games and cards, volunteering, going to church and providing transportation. Further research is needed to better understand the types of tangible support that is exchanged between centre friends. For instance, studies indicate that senior centre users have relied on their centre friends for help (Fulbright, 2010); however, it is not clear from the research what that entails or the context in which it was provided.

7.5.2 Social Support and Loneliness

Similar to Fitzpatrick et al. (2005), the Medical Outcomes Study Social Support Survey was used to examine the types of support that users felt was available at the centre should it be needed. The tangible support scale was excluded from the current study, as the PGP project advisory committee felt it was not relevant due to the fact that centres rarely offer the types of support services examined in that subscale. Unsurprisingly, positive interactions (e.g., someone to have a good time with) was rated the highest, while affection (e.g., someone to hug) was rated the lowest; however, scores for all subscales ranged from no support at all (0%) to always available (100%). It is not clear how these rates compare, as Fitzpatrick et al. (2005) did not actually report average scores.

Findings showed that perceived support was generally associated with more regular centre participation, including making more visits, spending more time, and engaging in more activities. Differences in participant characteristics were primarily found for affectionate support, with higher levels reported by non-drivers, those with less education and lower income.

Surprisingly, social support was not associated with loneliness. As described in **Section 7.2,** around a quarter of the sample reported high levels of loneliness. While these experiences may be due to a dissatisfaction with the quality of relationships outside the centre (i.e., relationships with other network members such as family), it may suggest that some centre users are "lonely in a crowd" (Newall & Menec, 2019) and thus it may be important to explore the potential discrepancy between the quantity of relationships (i.e., plenty of other centre members to engage with) and the perceived quality. One study observed that senior centres have cliques that facilitate exclusionary behaviours and foster feelings of hostility and unfriendliness (Salari, Brown, & Eaton, 2006), which may contribute feelings of being left out, isolated, and lacking companionship. More research is needed to examine how the social environment and dynamics at centres (e.g., cliques and friend-groups) impact experiences of isolation and loneliness, especially among new members integrating into the centre and changes in these experiences with ongoing participation.

While senior centres in Ontario are reaching some seniors who are lonely, data on social isolation was limited to living arrangements and retirement status. Other indicators of the structure and function of social relationships were not examined (Valtorta et al., 2016); thus, the full picture of the social situation of OAC users was not available. Ideally, indicators of social isolation and loneliness (inside and outside the centre) should be examined concurrently (Newall & Menec, 2019). Research has suggested that reduced proximity to and a lack of connection with

social network members increases intentions to participate at OACs (Ashida & Heaney, 2008), indicating that centres may be reaching seniors who are socially isolated. Conversely other research found that compared to non-users, users were more socially connected (Calsyn & Winter, 2000; Strain, 2001). None of these studies examined loneliness. Given that senior centres are thought to combat social isolation and loneliness, longitudinal studies are essential for better understanding how social isolation and loneliness may change with regular and ongoing participation at an OAC.

7.6 Centre as a Primary Place for Recreation and Social Activities

While many researchers (e.g., Pardasani, 2004a), governments (e.g., Government of Ontario, 2016), and advocacy bodies (e.g., the OACAO) believe that OACs are focal points for community participation among older adults, no research has actually examined the extent to which they are a primary place, especially in relation to other venues for out-of-home activities. The current study profiled users who viewed the centre as their primary place, as well as the extent to which the centre was a focal-point in out-of-home travel and community engagement.

Two-thirds of users reported that the centre was their primary place for recreation, leisure and social activities. Importantly, centre participation patterns varied between these two groups: those who indicated the centre was their primary place made more frequent and longer visits each week and participated in more activities. Having post-secondary education, being a current driver, and attending other community centres significantly reduced the odds of reporting the centre as a primary place, while loneliness increased the odds of doing so. Social support at the centre was also a significant predictor, whereby those who perceived higher levels of support were more likely to report the centre was their primary place.

The diaries showed that 27% of trips away from home included a stop at the centre; however, there was considerable variation within the sample, ranging from no trips to 93% of all trips from home involved the centre. Post-secondary education and participation at other community centres significantly reduced the extent to which the centre was a focal point, while loneliness had the opposite effect. Being a long-term member, believing the centre was a primary place, and reporting higher levels of social support at the centre were also significant. After accounting for these centre-related factors, loneliness was the only personal characteristic that remained significant.

Travel diary data was examined to identify the extent to which centre participation was a focal point in all recreation activities. As described in **Section 6.4.4**, recreation trips were those that included the centre, another recreation facility, the legion, private clubs, educational events, clubs and groups, sporting events/casinos, and threatre/art/movies. An average of two-thirds of all recreation trips were to attend the centre; however, this ranged from zero up to 100%. In general, the extent to which the centre was a focal point in recreation trips decreased with higher education but increased with higher loneliness. Neither of these factors were significant predictors once participation at other community facilities (including community centres, private clubs and the legion) were included in the model.

In general, the above predictors only explained between 20% and 35% of the total variance, suggesting that other factors need to be explored. For instance, social support networks (outside of the centre) may affect on the extent to which the centre is a focal point of their social activities. While this study examined participation at other community-based recreation facilities, it did not account for the proximity of those facilities or the types of activities offered due to increased participant burden associated with reporting this information.

7.7 Non-User Perceptions of Older Adult Centres

7.7.1 Images of Older Adult Centres

In the BBTP, non-users were asked to describe the image that pops into mind when they think of OACs. Senior centres were frequently described as central meeting places in the community; however, few were able to imagine what the space looked like, and only one was able to describe the types of amenities that might be available. Centres may not emphasize their facilities when promoting programs to potential members in the community due to concerns over facility maintenance (Pardasani & Goldkind, 2012), lack of space and the need to renovate or upgrade (Pardasani & Sackman, 2014; Sheppard et al., 2016).

Non-users accurately identified that OAC users were mostly women. Although OACs in Ontario are very interested in ways to attract male participants (Sheppard et al., 2016), they are unlikely to have widespread appeal to older men if non-users generally believe that older men do not participate (Hasmanová Marhánková, 2014). Non-members also believed that OACs were places specifically for *"old people"* and around 20% associated OAC participants with negative images of aging. These findings are consistent with another study (conducted around the same time) in which centre users believed that other older adults (who did not participate) had limited understanding of what a centre is and who participates (Lund & Engelsrud, 2008). These negative perceptions may challenge non-users whose self-image is incompatible with their impression of who attends (Lund & Engelsrud, 2008). Ageless marketing (e.g., removing ages from program titles) may also help OACs to reach seniors who do not identify as being 'old enough' to utilize centre programming (Beard, 2012).

Many non-users described centres as places for older adults to connect with others, be active, and learn new skills. Despite this, some felt senior centres predominately targeted inactive

seniors who "sit around" and "do nothing." Relatedly, while several described specific programs that attendees might participate in, most focused primarily on inactive and sedentary programs like cards, bingo, and crafts. Thus, it seems that those that do not attend an OAC have limited understanding of the diversity of programs available.

Senior centres in Ontario (Sheppard et al., 2016) and in the United States (Bobitt & Schwingel, 2017; Pardasani & Sackman, 2014) have both noted concerns reaching younger and more active seniors, which may be related to in part to negative stereotypes about OAC programs and participants. Indeed, the recent change in Ontario legislation, rebranding OACs from *Elderly Persons Centres* to *Seniors Active Living Centres* is certainly a step in the right direction for combating these negative images. Additionally, OACs should consider other ways to promote their innovative and diverse programming (Pardasani & Goldkind, 2012) to combat stereotypes among baby boomers and other older adults who feel that OACs are primarily for people older or less active than themselves. Promoting specific programs at the centre may be more effective than marketing the entire centre as a whole (Xaverius & Mathews, 1999), and modern updated websites with new marketing materials (e.g., professional photography showing seniors being active in their programs) may be needed to appeal to younger seniors. Offering more activities beyond the walls of the senior centre (such as fishing, biking, or hiking clubs), as well as partnerships with other community-based facilities (e.g., a centre-based bowling team that participates in a local league) or organizations (e.g., volunteerism) may also help OACs build their community profile and combat images of inactivity. One non-user remarked how they *"used to think [senior centres] were for old folks with nothing to do, [and I] just found out about all the different types of activities and programs,"* suggesting that showing potential users the diversity of programs available may be one way to generate interest. Indeed, one senior centre

found once they opened their café to the public, 78% of their patrons tried a centre activity after seeing the programs that were offered (Beard, 2012).

7.7.2 Future Participation Among Non-Users

Around two thirds of non-users indicated they would be interested in attending an OAC in the future. This finding is similar to rates reported by MaloneBeach and Langeland (2011) who found that 68% of baby boomers would use a senior centre. Higher intentions to participate at an OAC in the future were seen in younger seniors and those with more medical conditions (including osteoporosis), which is consistent with previous research (Ashida & Heaney, 2008; Strain, 2001). The present study showed that interest in physical activities, health and wellness programs, and special events predicted greater interest in joining.

Research should explore additional variables that may be important in promoting OACs. For instance, both Strain (2001) and Ashida and Heaney (2008) found that greater desire for social contacts and/or low levels of social connectedness predicted interest in joining. Transportation should also be considered.

Awareness of senior centre programming may also be important for encouraging people to join (Ashida & Heaney, 2008; Xaverius & Mathews, 1999), especially if non-users are looking for specific types of programs. Interestingly, very few non-users described how centres promote health and wellness among participants (even though they were interested in health programs); these programs are offered regularly at many centres (OACAO, 2010; Sheppard et al., 2016; Song et al., 2017). Given that centres are striving to offer more innovative and diverse programs (Pardasani & Goldkind, 2012), OACs should consider how their activities (especially health and wellness programs) are being marketed and promoted in their community. As the current study was conducted at OACs, it can be assumed that non-users had opportunities to

learn more about available programming; however, because the BBTP did not follow respondents over time, it is not possible to determine whether any of the non-users ended up joining their local centre.

7.8 Challenges and Limitations

A primary issue concerns the generalizability of findings, as only 36 centres participated (24 in the BBTP and 12 in the MC-GEP. Although these centres were from different regions of the province, they represent only a small portion of OACAO member centres and none of the other seniors centres in Ontario who are not affiliated with the OACAO. Furthermore, centre users that chose to participate in these studies may be those who are more connected and engaged at their centre (hence their willingness to participate) and may not reflect other users.

Another limitation is that both projects were survey-based cross-sectional studies. The fact that the data for the two projects was collected roughly a decade apart is problematic when making comparisons; however, it also provided insight into how things may have been changed (e.g., the types of seniors centres were attracting, the types of programs offered). The sections below describe the challenges and limitations that were specific to each of the projects.

7.8.1 Building Bridges to Tomorrow Project (BBTP)

The BBTP project was completed in 2008-2010; thus, information on recruitment and data collection challenges was limited to that presented in the final report and from discussions with the project lead nearly a decade later. While all OACAO member centres were invited to participate in the project, only 27 expressed interest and three of these centres ultimately did not participate due to time constraints. Furthermore, only two participating centres were from northern Ontario. It is not clear what proportion of the OACAO membership the BBTP centres represents, or how generalizable participating centres were to other OACs in Ontario in general.

Data collection was conducted via interview with designated centre volunteers, which certainly contributed to the high level of data completeness. Using a centre volunteer (as opposed to an external researcher) may also have helped foster buy-in among centre-users. Nonetheless, challenges in participant recruitment at OACs for research studies has been noted by others (Felix et al., 2014). It is not clear what recruitment strategies were used, how effective they were, or how many centres met their recruitment targets.

Another issue with the data collection protocol was that centre users were asked to identify potential non-users through snowball sampling techniques. While this sampling technique may have made it easier to promote buy-in, it creates significant issues regarding representativeness. Compared to seniors (aged 65+) in the Canadian Community Health Survey – Healthy Aging (conducted around the same time as the BBTP), women, those who lived alone, and those living in urban settings were over represented among non-users of the same age range (i.e., aged 65+), while low-income seniors were under-represented. The proportion of those with post-secondary education was similar among the two samples. Furthermore, several "non-users" were removed from the sample because they reported attending or volunteering at a different OAC in their community.

Another limitation is the survey design. In the user survey, response options for questions on centre participation (e.g., membership length, frequency of attendance and hours per visit) were categorical ranges (e.g., 2-4 days per week, 1-5 years of membership length). Also, data provided insight variety or types of programs (e.g., exercise) accessed, but not specifics (e.g., type of exercise class) or the total number (e.g., one versus three exercise classes).

While the user and non-user questionnaires used identical demographic and health questions, those regarding recreation participation differed in important ways that limited

comparisons. The non-user questionnaire included several questions exploring recreation and leisure habits (e.g., how often they participated each week, extensive questions on volunteer patterns); however, the user questionnaire only asked these questions in relation to participation at the centre, and not at other locations in the community. In fact, on the user questionnaire, participation in recreation outside the centre was limited to yes/no questions whether they volunteer (yes/no) and what other types of community organizations they use. Importantly, the checklist of community organizations was not identical across surveys (non-user survey asked about participation in senior centres, church, community recreation facilities, fitness facilities, or private clubs, while the user survey asked only about participation in other centres, church, private clubs, and the legion). These differences made it meaningless to compare overall recreation participation between users and non-users.

7.8.2 Multi-Centre Guided Evaluation Project (MC-GEP)

One of the main challenges was centre recruitment. While most contacts who were invited to participate felt the study was interesting and would provide valuable data, only 14 centres (53.8% of those invited) agreed. The others felt the time commitment or deadlines were not feasible and/or did not have a centre volunteer to support the project. Of the 14 that expressed interest, one was unable to generate any interest from their membership and another did not have the personnel to carry out the work.

Participant recruitment strategies varied, and centres had different levels of success engaging their members in the project. Four out of the 12 centres were unable to recruit a sample of 20 participants; two found that while people were happy to participate, it was challenging to actually arrange and collect the data at two sessions and suggested, similar to previous research (Felix et al., 2014), that a single-session project would be easier. Another described a language

barrier, noting that those who completed the entire project spoke English and those who dropped out after the first session generally spoke another language. The fourth centre compared the data collection process to *"herding cats"* and found the biggest challenge was getting people to return the diaries and complete the second session. Eight centres, however, described the recruitment and data collection process as *"very easy."* Most of these centers used personal invitations and recruitment announcements to generate interest and found, consistent with prior research (Felix et al., 2014), that emphasizing how the centre and its members would benefit from the data was effective at maintaining commitment.

Interestingly, the centre that dropped out due to lack of member interest relied heavily on the use of a recruitment flyer placed at the reception desk and the bulletin board. While these were high traffic areas in the centre, a stand-alone flyer was not effective at engaging members or explaining the benefits of the project for the centre. Another centre that used both a e-flyer and personal announcements in classes similarly found that 85% of their participants were recruited through the announcements, and only 15% from the flyer.

Despite participant recruitment challenges, over 80% of the sample completed both sessions and the travel diaries. The sessions were facilitated in a group format, which likely made it more interesting for participants. Importantly, all of the submitted travel diaries were fully completed. Many facilitators noted they *"checked-in"* with participants during the two-week monitoring period, which likely contributed to the high completion rate. While most participants noted the time of their arrival and departure, and the activities they did, they were not asked to do this for other trip purposes in order to reduce the overall burden. For instance, when a participant left their home at 2pm to go to the legion and get groceries, returning at 5pm, it is not clear how much time was spent at the legion versus running errands.

One of the advantages is the MC-GEP used standardized measures to examine mobility, balance confidence, loneliness, well-being and social support; however, the cross-sectional nature limits interpretation of the findings. While they build an initial profile for Ontario-based OAC members, longitudinal data collection initiating when someone first joins the centre, and repeated annually, is needed to examine baseline characteristics and how they change with varying levels of participation.

Another limitation is the relatively small sample, both in terms of number of centres and number of participants at each centre. Only 12 centres participated in the project, representing a very small portion of OACAO member centres, and an even smaller proportion of OACs in Ontario. Participating centres, however, constituted a mix of municipals and non-profits, from both urban and rural communities, and located in seven of the eight OACAO regions (including two centres from the northern regions), suggesting the sample represented at least some of the diversity in the OACAO membership.

Within each centre, convenience samples ranged in size from 14 to 50 participants, representing very small portions of the centres' total membership (which ranged from 100 to 3,000 members). Each centre was asked to recruit a variety of members who had been attending for six months that included a mix of men and women, as well as younger and older seniors who attended on different days of the week. Indeed, project facilitators indicated in the follow-up interviews that they tried to recruit from different types of programs (e.g., both fitness and non-fitness programs) offered on different days of the week and at different times of day. While the project facilitators indicated that they were generally happy with the diversity of users within their sample, several participants attended the same program at the centre (e.g., 10 who all attended darts), perhaps because people chose to participate with their friends.

Participating centres did not track refusal rates. Given the study requirements (i.e., two appointments and two weeks of completing a daily travel diary), it could be that the most dedicated and engaged members agreed to participate. The travel diaries, however, showed a lot of variation in terms of centre visits, hours spent, and programs attended, including some respondents who did attend over the study period.

7.9 Implications for Research and Practice

Findings from the current project suggest that OACs in Ontario have not been reaching younger seniors. For instance, research suggests that there needs to be a complete overhaul in senior centre branding, marketing, and programming in order to reach this population (Fitzpatrick & McCabe, 2008). A study exploring senior centres with pre-retirees found that they wanted centres to be colourful, bright, and to have outdoor green space (Marken, 2005). Research on baby boomers has also suggested that they were most interested in opportunities for civic engagement, travel, and programs that promote health and wellness (MaloneBeach & Langeland, 2011), and desired programs with strong leaders and concrete/attainable outcomes (Marken, 2005). Pre-retirees also indicated a strong interest in intergenerational programming, such as tutoring programs or reading buddies (Marken, 2005), which may be more prevalent in all-ages facilities. As less than 50% of Ontario-based OACs offer intergenerational programming (Sheppard et al., 2016), this may be one of the reasons they have not been successful in reaching this population.

As discussed above, centres could consider several strategies for reaching younger and more active seniors such as: offering programs that are carried out in the community, such as biking groups (Beard, 2012); modernizing promotional materials (e.g., updated websites with professional photography), with a focus on promoting key programs (Xaverius & Mathews,

1999); and making the centre more accessible to the public through facility rentals (Cohen et al., 2009) or public spaces within the centre, such as a café (Beard, 2012).

Findings from the current project also suggest that reaching older men continues to be a struggle for OACs in Ontario. Research has suggested that senior centre programming focuses predominately on the interests of older women (e.g., belly dancing, yoga, sewing, pottery), with few programs that cater to interests of older men (Hasmanová Marhánková, 2014). For example, older men have indicated that they wanted a senior centre offer competitive and intramural sports (Marken, 2005), which are not frequently offered at centres. More work is needed to help centres design and implement programming that aligns with the interests of older men; for instance, in 2018, the OACAO offered a series of regional workshops on OAC programming for older men, and emphasized the importance of programming opportunities for "side-to-side" (e.g,. wood working) socialization instead of "face-to-face"The primary focus of the current project was on recreation and social participation; however, many OACs, also offer a variety of health programs (Pardasani, 2004b; Sheppard et al., 2016; Song et al., 2017). A recent OACAO report shows that health programs vary widely between centres both in terms of what is offered and how frequently (Sheppard et al., 2016). This is not surprising, given that centres tend to tailor their programs to the needs of their membership, and may select health programs based on demand. In the MC-GEP none of the participant recorded attending a health program at their centre during the two-week period. The BBTP project examined the types of health programs that users attended but did not examine how frequently those programs were offered or accessed. Future research should explore health programs at OACs including what is offered and who attends.

The current study did not examine how centre factors (such as hours of operation, staffing levels) may impact participation rates. Other factors that may be important include class

sizes, amenities (e.g., quality, type) and facility size/layout (Walker et al., 2004), as well as organizational culture (e.g., leadership style) and how centres engage their members in decision-making processes with respect to fundraising, programming, recruitment and promotion (Cusack, 1994; Rosenberg, 2013).

The MC-GEP showed that there was a high degree of correspondence between participation rates reported on the questionnaires and in the real-time travel diaries; however, participation should ideally be examined using actual attendance records. Most centres in Ontario reportedly tracked daily centre attendance (through sign-in sheets), and some tracked individual attendance in specific registered programs; however, almost none tracked program drop-outs (Sheppard et al., 2016). Many OACs in Ontario also do not consistently and routinely collect background information on their membership (apart from age and sex) or use standardized measures to assess benefits (Sheppard et al., 2016). The OACAO should continue to support centre-driven data collection in order to enhance evaluation practices and capacity to report outcomes to funding agencies. For example, as part of the *Building Evaluation Capacity* project (see **Chapter 3**), the OACAO developed a user background questionnaire, identified relevant and easy-to-administer standardized measures, and created recommendations on how centres can easily collect and use this data. In the follow-up interviews in the MC-GEP, centre facilitators all felt the background questionnaire would be extremely useful for them, and most expressed their desire to implement it; however, some centres indicated they would need to focus on only a handful of questions due to time constraints and privacy concerns.

With respect to the standardized measures, all centres saw the value in this data, with one noting *"we should be doing more data collection […] the motivation is always to get funding and any data that proves we're important and helping seniors stay active is useful,"* but most did

not feel it would be feasible to use all the measures and would have to *"pick and choose."* For instance, one centre indicated they were going to start by administering the VPS on new members only. As this questionnaire was specifically designed to measure the health benefits of exercising (Myers et al., 1999), centres should certainly consider using it with those members attending fitness programs. The ABC scale was also of interest for measuring the benefits of fitness programming, with one centre (who had a fully equipped gym) interested in administering it during annual fitness assessments.

With respect to measuring the social environment at centres, three were interested in exploring centre friendships in more depth, and one noted that members especially liked these questions as it helped them *"realize they had made friends and actually do activities with them."* Interestingly, other research suggests that OACs have cliques and territorial displays that may lead to the exclusion of certain members (Salari et al., 2006). As described above, more research is needed to explore friendships and cliques at centres and identify how members may experience exclusion. While most centres were interested in continuing to use the UCLA 3-item loneliness measure, they could tailor to the three questions to examine isolation, lack of companionship, and feelings of being left-out At the centre specifically (versus in general).

While many centres felt the social support questionnaire addressed outcomes relevant to their mission statement and funders, most received pushback from members who found questions too personal or not relevant to how they use the centre. One manager, however, felt that questionnaire was important and viewed the pushback as an *"indicator that we need to explore this further at our centre, and better understand the type of support that is available and how we can better support people."* The MC-GEP tailored this questionnaire to examine support available at the centre specifically; however, as noted above, centres wishing to examine social

support in more depth should also consider the availability of social support outside of the centre, in order to disentangle the role of the centre versus other social network members, such as family members.

The current study took an in-depth look at OAC users, examining how a variety of demographic and health characteristics impact participation. While issues of multiple comparisons should be considered when interpreting the findings, they shed light on the types of variables may be most important for further research and evaluation at centres. All of the tools used in the MC-GEP were made available to OACAO members via their website; however, it was beyond the timeline of the PGP project to follow-up with centres to examine how many had actually incorporated the resources into their regular data collection practices. It is likely that those participating in the MC-GEP would have an easier time doing so, as they had experience with the tools. The OACAO should consider following-up to examine the uptake and utility of these resources among their membership.

7.10 Conclusions

Government and advocacy bodies strongly believe that older adult centre participation combats social isolation and loneliness among community-dwelling seniors. Although findings from the current study suggest that nearly a quarter of OAC users experience high levels of loneliness, it is possible that their loneliness has decreased since joining the centre. More research is needed to better understand this subset of centre users, and explore how the centre environment and ongoing participation impacts loneliness.

Directors of OACs have reported increased competition from other community-based facilities, like the YMCA, in marketing their recreation and social programs to younger and more active older adults (Bobitt & Schwingel, 2017). Indeed, ageist attitudes were prevalent among

non-users, who frequently associated OACs with old and inactive members. Centres should consider innovative and cost-effective ways they can combat these images through updated marketing and promotional efforts.

Although three-quarters of centre users did participate at other organizations, many did so in order to access programs or facilities not readily available at their centre (e.g., bowling league, swimming classes). Centres should consider partnering with others organizations (e.g,. YMCA) to offer programs these kinds of programs. Despite attending other facilities, the centre was still a focal-point for recreation and social activities, especially for those without post-secondary education, those who experienced loneliness, and those at greater risk for social isolation (i.e., living in rural areas, non-drivers, and living alone).

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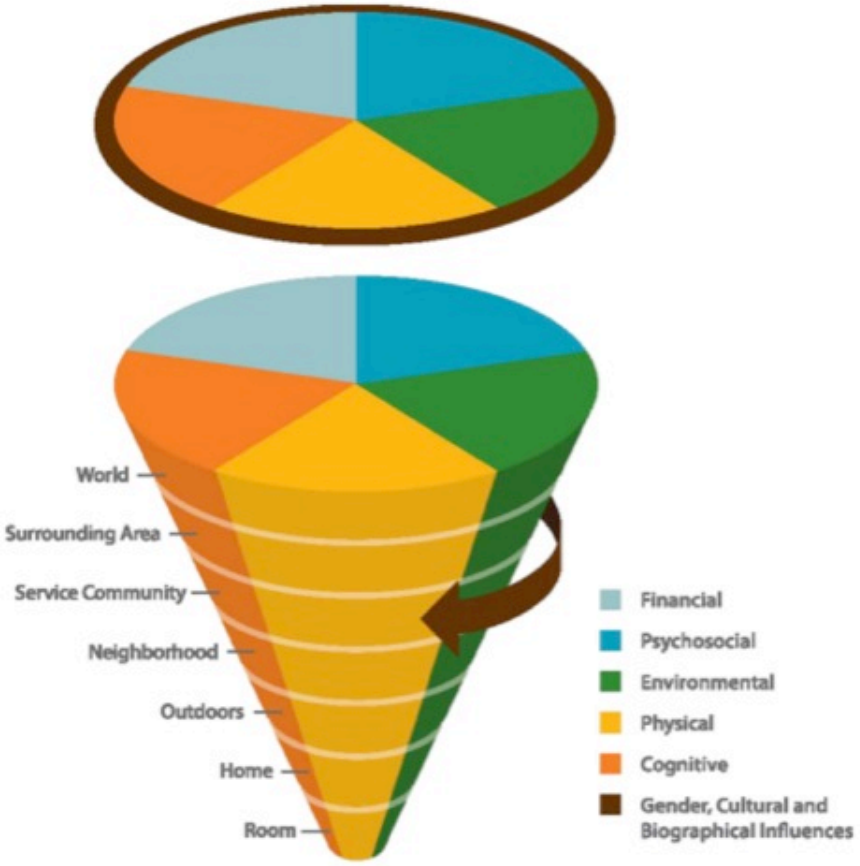
Appendix A. Conical Model of Mobility



Webber, S.C., Porter, M.M., Menec, V. (2010). Mobility in older adults: a comprehensive framework. *Gerontologist, 50*(4), 443-450. doi: 10.1093/geront/gnq013
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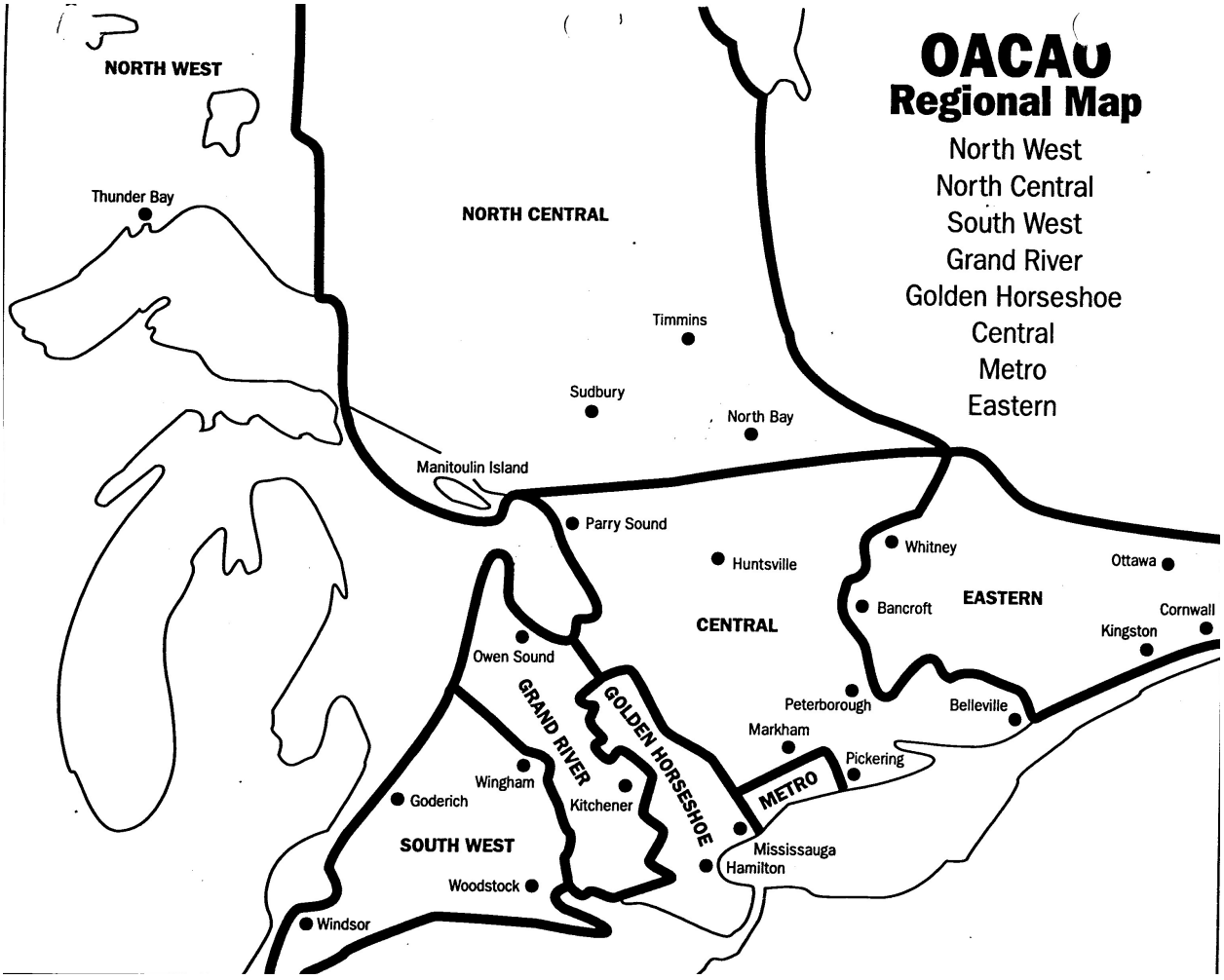
Appendix B. OACAO Regional Map



Appendix C. Building Bridges to Tomorrow Materials

Member Questionnaire

Centre Name: _____

Interviewer Name: _____

The following questionnaire has been designed by the research team for the *Building Bridges to Tomorrow Project*. The project is being funded through a three year grant from the Ontario Trillium Foundation and the project is being carried out by the Older Adult Centres' Association of Ontario. The goal of this project is to identify the issues Older Adult Centres in Ontario face today and to explore the future trends that will impact Older Adult Centres.

The purpose of this questionnaire is to develop a profile of the current members of Centres, to identify the health benefits that Older Adult Centres provide their members and the health system, and to identify the issues facing Older Adult Centres and their users. The results of this questionnaire will be used to form a strategic plan for your Centre as well as to contribute to a provincial wide report. Your participation will greatly benefit your Centre and others across Ontario.

All of the information you provide us with will be kept confidential and anonymous and will only be accessible to the OACAO and research staff. Your identity will not be recorded or the information you provide us cannot be traced back to you. The information you provide us will not be published on an individual basis, but will be used to contribute to the overall collection of data. This will be used to identify trends and will be published in both your Centre report and a provincial wide report. You are under no obligation to answer every question.

If at any time you wish to terminate this questionnaire or skip a question then please state so. I will ask you a question and then provide you with some possible answers. If you do not understand the question or would like some clarification then please state so.

Your participation is greatly appreciated and I would like to thank you on behalf of the Centre and the *Building Bridges to Tomorrow Project.*

Part 1: Attendance

The first part of this questionnaire will examine when and how you access the Centre. It will help in developing a profile of current users of Centres and help form a strategic plan for your Centre.

1.1 How long have you been coming to this Centre?

a. Less than 1 year
b. 1-2 years
c. 3-5 years
d. 6-10 years
e. More than 10 years
f. Do not know

1.2 Within in the past year, please estimate on average how often you have come to the Centre.

a. 5 or more times a week
b. 2-4 times a week
c. Once per week
d. 1-3 times per month
e. Less then once per month
f. Do not know

1.3 Please estimate on average how many hours you spend at the Centre on the days that you come in.

a. Less then 2 hours
b. 2-4 hours
c. 5 or more hours
d. Do not know

1.4 Please rank the following times of the day (morning, afternoon and evening) in the order you are most likely to come to the centre.

1 being the most preferred and 3 being the least preferred.

Time	Rank (1-3)
Morning	
Afternoon	
Evening	

1.5 How far is the centre from your house?

a. Less then 2km
b. 2-10km
c. 11-20km
d. More than 20km
e. Do not know

1.6 What is your primary form of transportation that you use to get to the Centre?

(Please do not read the choices and check each box that applies)

Transportation	Yes (√)
Drive my own car	
Public Transit	
Volunteer transportation	
Walk or Bike	
Ride from a friend or family member	
Centre transportation	
Taxi Service	
Special needs transportation service	

1.7 Would you attend the Centre more often if better transportation was available?

a. Yes
b. Maybe
c. No

1.8 How did you learn about the Centre?
(Please do not read the choices and check each box that applies)

Resources	Yes (√)
Spouse	
Friend	
Children	
Doctor or Nurse	
Centre Brochure	
Community agency	
Radio or TV	
Newspaper	
Internet	
Relatives	
Other _____	

1.9 Do you go to any other facilities, such as Centres, Churches, Private Clubs or Legions?

a. No → ***See Part 2: Participation***
b. Yes → ***See next question (#1. 10)***

1.10 What other facilities do you attend and how many times a week do you attend these facilities? ***(Please check all that apply)***

Facilities	Yes (√)	How often (per week)
Other Centres		/week
Church		/week
Private Clubs (i.e. fitness club)		/week
Legion		/week
Other		/week
Other		/week
Other		/week

Part 2: Participation

The second part of this questionnaire will examine what programs and services you access at the Centre. It will help in developing a profile of current users of Centres and help form a strategic plan for your Centre.

Section 1: Programs

2.1 Within the past year which activities or programs have you participated in at the Centre? ***(Please read each answer choice and check each box that applies)***

Activity	Yes, I Participate
Physical/Fitness Classes (Yoga, Tai Chi)	
Dancing Classes (line dancing, square dancing)	
Cards (Bridge, Mah Jong)	
Visual Arts (painting, pottery)	
Music (singing, choir)	
Crafts (needlepoint)	
Computer courses or workshops	
Snooker	
Woodworking	
Education (continuing education, workshops)	
Trips and Travel	
Special Events	
Health Seminars	
Pre-retirement	
Discussion Groups (books, news)	
Writing (journaling)	
English as a second language courses	
Intergenerational Programs	
Multicultural Programs	
Sports (golf, tennis)	
Other _____	

2.2 On a scale from one to ten please rate your overall satisfaction with the programs in the following areas or indicate that you do not know. **1 or 2 being Very Poor; 3 or 4 being Poor; 5 or 6 being Average; 7 or 8 being Good; 9 or 10 being Excellent.**

Area	Do Not Know	Very poor Poor Average Good Excellent **(Please circle the number)**									
Range or Quantity of programs		1	2	3	4	5	6	7	8	9	10
Quality of programs		1	2	3	4	5	6	7	8	9	10
Timing of programs		1	2	3	4	5	6	7	8	9	10

2.3 What programs and activities would you like to see offered more at the Centre?
(Please do not read the choices and check each box that applies)

Program	**Yes, offer more**
Physical Activity (Fitness, Dancing, Sports)	
Arts (Painting, Music, Writing, Crafts, Woodworking, Pottery)	
Education (Workshops, Seminars, Discussion Groups, Language Courses)	
Computers (Classes or Workshops)	
Health and Wellness (Fall Prevention, Weight Loss)	
Special Events (Christmas Dinner, Wine and Cheese)	
Trips and Travel (Day Trips or Over Night Trips)	
Other _____	

Section 2: Services

2.4 Within the past year which health services have you accessed at the Centre?
□ Do not access any health services → ***See Question 2.6***
(Please read the choices and check each box that applies)

Health Service	**Yes, I Access**
Public Health Nurse Visits	
Foot Care	
Hearing Clinics	
Eyesight Clinics	
Chiropractic Services	
Aesthetic/Grooming Services	
Weight Loss Program	
Health Promotion	
Fall Prevention Seminars	
Screening Clinics	
Alternative Therapy (reflexology)	
Other _____	

2.5 On a scale from one to ten please rate your overall satisfaction with the health services in the following areas or indicate that you do not know. **1 or 2 being Very Poor; 3 or 4 being Poor; 5 or 6 being Average; 7 or 8 being Good; 9 or 10 being Excellent.**

Area	Do Not Know	Very poor		Poor		Average		Good		Excellent	
		(Please circle the number)									
Quantity or Range of Services		1	2	3	4	5	6	7	8	9	10
Quality of Services		1	2	3	4	5	6	7	8	9	10
Timing of Services		1	2	3	4	5	6	7	8	9	10

2.6 What health services would you like to see offered more at the Centre?

□ Would not like to see any more health services offered

(Please do not read the choices and check each box that applies)

Health Service	**Yes, offer more**
Public Health Nurse Visits	
Foot Care	
Hearing Clinics	
Eyesight Clinics	
Chiropractic Services	
Aesthetic/Grooming Services	
Weight Loss Program	
Health Promotion	
Fall Prevention Seminars	
Screening Clinics	
Other _____	
Other _____	
Other _____	

2.7 Within the past year which community support services have you accessed at the Centre?

□ Do not access any community support services → ***See Question 2. 8***

(Please read the choices and check each box that applies)

Service	Yes, I Access
Meals on Wheels	
Homemaking	
Home Maintenance	
Friendly Visiting	
Day Programs	
Congregate Dining	
Social Work	
Transportation	
Telephone Reassurance	
Bereavement and Support Services	
Long Term Care Facility	

2.8 Do you receive community support services from other agencies?

a. No → ***See Section 3: Volunteering***
b. Yes → ***See nest questions (#2.9)***

2.9 What community support services do you receive from these other agencies?

(Please read the choices and check each box that applies)

Service	Yes (√)
Meals on Wheels	
Homemaking	
Home Maintenance	
Friendly Visiting	
Day Programs	
Congregate Dining	
Social Work	
Transportation	
Telephone Reassurance	
Bereavement and Support Services	
Long Term Care Facility	

Section 3: Volunteering

2.10 Do you currently volunteer at your Centre?

a. Yes → ***See next question (#2.11)***
b. No → ***See question 2.14***

2.11 How often do you volunteer?

a. 5 or more times a week
b. 2-4 times a week
c. Once per week
d. 1-3 times per month
e. Less then once per month
f. Do not know

2.12 How long have you been a volunteer at the Centre?

a. Less than 1 year
b. 1-2 years
c. 3-5 years
d. 6-10 years
e. More than 10 years
f. Do not know

2.13 What areas do you volunteer in at the Centre?

(Please do not read the choices and check each box that applies)

Position	**Yes (√)**
Front Desk or Greeter	
Administrative Assistance	
Running a program or activity	
Committee or Board	
Special Events	
Fundraising	
Community Support Services	
Cafeteria Assistance	
Travel Committee	
Other	
Other	

2.14 Do you volunteer for any other organizations or groups?

a. Yes
b. No

Part 3: Satisfaction

The third part of this questionnaire will examine your satisfaction with the facility, the staff and the volunteers at your Centre. It will help in identifying current issues within Centres and help form a strategic plan for your Centre.

3.1 In your opinion how affordable are the following centre activities?
Please state if it is Inexpensive, Reasonable or Expensive for each of the following programs.

(Please read the choices and check each box that applies)

Programs	Inexpensive	Reasonable	Expensive
Membership			
Programs			
Trips			
Special Events			

3.2 What resources do you use to receive information on programs and events at the Centre?

(Please read the choices and check each box that applies)

Resource	Yes (√)
Program Guide	
Flyers	
Newsletter	
Website	
Word of mouth	
Staff	
Other members	
Bulletin Board	
Other _____	
Other _____	
Other _____	

3.3 On a scale from one to ten please rate your overall satisfaction with the facility in the following areas or indicate that you do not know. **1 or 2 being Very Poor; 3 or 4 being Poor; 5 or 6 being Average; 7 or 8 being Good; 9 or 10 being Excellent.**

Facility	Do Not Know	Very poor Poor Average Good Excellent **(Please circle the number)**									
Signage for the building		1	2	3	4	5	6	7	8	9	10
Parking		1	2	3	4	5	6	7	8	9	10
Exterior Building Appearance		1	2	3	4	5	6	7	8	9	10
Interior Building Appearance		1	2	3	4	5	6	7	8	9	10
Wheelchair Accessibility		1	2	3	4	5	6	7	8	9	10
Space for programs and events		1	2	3	4	5	6	7	8	9	10
Hours of operation		1	2	3	4	5	6	7	8	9	10
Washroom facilities		1	2	3	4	5	6	7	8	9	10
Climate control		1	2	3	4	5	6	7	8	9	10
Maintenance of Centre		1	2	3	4	5	6	7	8	9	10
Cafeteria or Food Services		1	2	3	4	5	6	7	8	9	10
Location of centre		1	2	3	4	5	6	7	8	9	10
Transportation to the centre		1	2	3	4	5	6	7	8	9	10
Friendliness at the centre		1	2	3	4	5	6	7	8	9	10
Program Equipment		1	2	3	4	5	6	7	8	9	10

3.4 On a scale from one to ten please rate your overall satisfaction with the staff in the following areas or indicate that you do not know. **1 or 2 being Very Poor; 3 or 4 being Poor; 5 or 6 being Average; 7 or 8 being Good; 9 or 10 being Excellent.**

Areas	Do Not Know	Very poor Poor Average Good Excellent **(Please circle the number)**									
Assistance in meeting your needs		1	2	3	4	5	6	7	8	9	10
Courtesy and responsiveness		1	2	3	4	5	6	7	8	9	10
Knowledge about services, activities, and resources		1	2	3	4	5	6	7	8	9	10
Accessibility		1	2	3	4	5	6	7	8	9	10

3.5 On a scale from one to ten please rate your overall satisfaction with the volunteers in the following areas or indicate that you do not know. **1 or 2 being Very Poor; 3 or 4 being Poor; 5 or 6 being Average; 7 or 8 being Good; 9 or 10 being Excellent.**

Areas	Do Not Know	Very poor Poor Average Good Excellent **(Please circle the number)**									
Assistance in meeting your needs		1	2	3	4	5	6	7	8	9	10
Courtesy and responsiveness		1	2	3	4	5	6	7	8	9	10
Knowledge about services, activities, and resources		1	2	3	4	5	6	7	8	9	10
Accessibility		1	2	3	4	5	6	7	8	9	10

3.6 On a scale from one to ten please indicate the number that corresponds to how well your voice and concerns are heard and acted upon by the Centre. **1 being Never; 5 or 6 being Sometimes; 10 being Always.**

1 2 3 4 5 6 7 8 9 10

Never Sometimes Always

3.7 What other issues do you have with the Centre and your membership?

_____

_____

Part 4: Motivation
The fourth part of this questionnaire will examine why you come to the Centre. It will help in developing a profile of current users of Centres and help form a strategic plan for your Centre.

4.1 Please indicate your level of agreement with the following statements regarding why you come to the centre. **Please indicate if you Strongly Agree, Agree, are Neutral, Disagree or Strongly Disagree.**

I come to this centre to….	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Make fulfilling friendships					
Develop new skills					
Accomplish something worthwhile					
Have routine and structure in my life					
Help others					
Socialize with people					
Remain independent					
For personal growth					
Develop a healthy lifestyle					
Keep my mind active					
Have responsibilities and a position of status (i.e. a Board member or activity leader)					
Develop my creativity					
Stay physical fit					

Part 5: Health
The fifth part of this questionnaire will examine the impact the Centre has had on your health. It will help in identifying major health benefits that Centres provide and will help form a provincial wide report on the value of Centres.

5.1 In general, how would you describe your health?
   a. Very Poor
   b. Poor
   c. Fair or Moderate
   d. Good
   e. Excellent

5.2 In general, how would you describe your physical activity level?
   a. Very Low
   b. Low
   c. Moderate
   d. High
   e. Very High

5.3 On a scale from one to ten please rate how much the Centre has improved your quality of life in the following areas since becoming a member. **1 or 2 being Not at all; 3 or 4 being Slightly; 5 or 6 being Moderately; 7 or 8 being Considerably; 9 or 10 being Extremely.**

The Centre has improved my…	Do Not Know	Not at all		Slightly		Moderately		Considerably		Extremely	
Overall wellness		1	2	3	4	5	6	7	8	9	10
Knowledge and skill base		1	2	3	4	5	6	7	8	9	10
Level of social interaction		1	2	3	4	5	6	7	8	9	10
Sense of routine and structure		1	2	3	4	5	6	7	8	9	10
Creativity and personal growth		1	2	3	4	5	6	7	8	9	10
Physical activity level		1	2	3	4	5	6	7	8	9	10
Sense of accomplishment		1	2	3	4	5	6	7	8	9	10

5.4 Has the Centre increased your knowledge about health illnesses and healthy living since becoming a member?

a. Not at all
b. Slightly
c. Moderately
d. Considerably
e. Extremely

5.5 What medical conditions do you currently have?

□ Do not have any medical conditions → ***See Question 5.6***

(Please read the choices and check each box that applies)

Medical Condition	Yes (√)
Arthritis or Rheumatism	
High Blood Pressure	
Diabetes	
Back Problems	
Heart Disease	
Eye Problems (i.e. Cataracts)	
Hearing problems	
Osteoporosis	
Other _____	

5.6 Do you have a chronic or ongoing illness?

a. No → ***If No to both Questions 5.5 AND 5.6, please See Part 6: Profile***
b. Yes

5.7 How much have these medical conditions or illnesses impeded or stopped you from doing the activities or things you like to do?

a. Not at all
b. Slightly
c. Moderately
d. Considerably
e. Extremely

5.8 How much has the Centre helped you to manage your pain or discomfort directly or indirectly through programs or activities?

a. Not at all
b. Slightly
c. Moderately
d. Considerably
e. Extremely

Part 6: Profile
The final part of this questionnaire will ask a few personal questions. It will help in developing a profile of current users of Centres and help form a strategic plan for your Centre. This part is very crucial to the results but if you feel uncomfortable at any time you may skip a question or terminate the questionnaire.

6.1 Where do you live?
   a. City
   b. Suburban area
   c. Rural area

6.2 What type of dwelling do you live in while staying in this area?
   a. House
   b. Apartment or Condo
   c. Senior Retirement Residence
   d. Assisted Housing
   e. Mobile Home

6.3 How long have you lived in this area?
   a. Less than one year
   b. 1-5 years
   c. Over 5 years

6.4 Do you spend the entire year in this area or do you travel to another location for part of the year (i.e. winter months)?
   a. Stay in this area
   b. Travel to another location for part of the year

6.5 Who do you live with?
   a. Alone
   b. Spouse
   c. Children
   d. Parent
   e. Relatives
   f. Non-relatives

6.6 Including yourself, how many people live in your household? _____

6.7 What is your marital status?
   a. Married → ***See question 6.8***
   b. Widowed → ***See question 6.9***
   c. Divorced → ***See question 6.9***
   d. Single → ***See question 6.9***

6.8 Is your spouse a member of the centre?

a. Yes
b. No

6.9 Are there any other family members that are members of the centre?

a. No
b. Children
c. Parent
d. Sibling
e. Other _____

6.10 Do you currently work part time or full time?

a. No
b. Yes, part time
c. Yes, full time

6.11 Please indicate which of the following computer resources you access.

(Please read the choices and check each box that applies)

Resource	**Yes (√)**
Computer	
Email	
Dial Up Internet	
High Speed Internet	

6.12 Is English your first language?

a. Yes
b. No _____**(Please indicate which language)**

Please have the participant fill in the final questions on the next page. Close the survey upon completion, place it in the envelope and seal it.

6.13 Please indicate your sex.

a. Male
b. Female

6.14 What is your ethnic origin?

A. Canadian	B. North American Indian	C. American
D. English	E. Dutch	F. Greek
G. French	H. Polish	I. Spanish
J. Scottish	K. East Indian	L. Jamaican
M. Irish	N. West Indian	O. Vietnamese
P. German	Q. Pakistani	R. Latin American
S. Italian	T. Jewish	U. Caribbean
V. Chinese	W. Portuguese	X. Other
Y. Ukrainian	Z. Filipino	AA.

6.15 Please circle the year bracket in which you were born

a. 1959 or later
b. 1944-1958
c. 1934-1943
d. 1924-1933
e. 1923 or before

6.16 What is your highest level of education?

a. Less than High School Diploma
b. High School Diploma
c. College or Associate degree
d. Undergraduate degree
e. Post-graduate

6.17 Please circle your annual household income bracket.

a. Under $25, 000
b. $25, 000- $69, 999
c. $70, 000 and over

Thank you for taking the time to complete this questionnaire.
The questionnaire will now be closed and placed in a sealed envelope.
Your participation will greatly benefit your
Centre and others across Ontario.

Non- Member Questionnaire

Centre Name: _____

Location: _____

Interviewer Name: _____

The following questionnaire has been designed by the research team for the *Building Bridges to Tomorrow Project*. The project is being funded through a three year grant from the Ontario Trillium Foundation and the project is being carried out by the Older Adult Centres' Association of Ontario. The goal of this project is to identify the issues older adults and Older Adult Centres in Ontario face today and to explore the future trends that will impact Older Adult Centres.

The purpose of this questionnaire is to develop a profile of the current older adults in your community, to identify the health and recreation needs of older adults and to examine the current participation in recreation facilities. The results of this questionnaire will be used to form a strategic plan for your community as well as to contribute to a provincial wide report. Your participation will greatly benefit older adults across Ontario.

All of the information you provide us with will be kept confidential and anonymous and will only be accessible to the OACAO and research staff. Your identity will not be recorded or the information you provide us cannot be traced back to you. The information you provide us will not be published on an individual basis, but will be used to contribute to the overall collection of data. This will be used to identify trends and will be published in a provincial wide report. You are under no obligation to answer every question.

If at any time you wish to terminate this questionnaire or skip a question then please state so. I will ask you a question and then provide you with some possible answers. If you do not understand the question or would like some clarification then please state so.

Your participation is greatly appreciated and I would like to thank you on behalf of your community and the *Building Bridges to Tomorrow Project.*

Part 1: Recreation and Leisure Needs

The first part of this questionnaire will examine the current use of recreation facilities and volunteerism. It will help in identifying the recreation needs of older adults and help form a strategic plan for your community.

1.1 What facilities or groups are you a member of?

□ Not part of any facilities or groups → ***See Question 1.2***

Facility or Group	Yes, I am a member
Senior or Older Adult Centre	
Private Fitness Centre	
Community Recreation Facility	
Church Group	
Private Club i.e. Golf Club	
Other _____	

1.2 Please estimate on average how often you participate in recreation or leisure activities?

a. Daily
b. 3-5 times per week
c. 1-2 times per week
d. Less then once per week

1.3 On a scale from one to ten how active do you feel you are with recreation and leisure activities?

1 2 3 4 5 6 7 8 9 10

Not active at all Fairly active Extremely active

1.4 On a scale from one to ten how much time do you have available to do recreation and leisure activities?

1 2 3 4 5 6 7 8 9 10

Not enough Just Enough Excess

1.5 On a scale from one to ten how willing are you to spend money on your leisure and recreation needs?

1 2 3 4 5 6 7 8 9 10

Not willing at all Fairly willing Extremely willing

1.6 On a scale from one to ten how adequate do you feel your disposable income is to meet your leisure and recreation needs?

1 2 3 4 5 6 7 8 9 10

Not at all Fairly Extremely

1.7 Which of the following programs and services would you be interested in?

□ Not interested in any programs or services → ***See Question 1.8***

(Please read the choices and check each box that applies)

Program	**Yes, interested**
Physical Activity (Fitness, Dancing, Sports)	
Arts (Painting, Music, Writing, Crafts, Woodworking, Pottery)	
Education (Workshops, Seminars, Discussion Groups, Language Courses)	
Computers and Technology (Classes or Workshops)	
Health and Wellness (Fall Prevention, Weight Loss, Nutrition)	
Special Events (Christmas Dinner, Wine and Cheese)	
Trips and Travel (Day Trips or Over Night Trips)	
Other _____	

1.8 Do you currently volunteer?

c. Yes → ***See next question (#1.9)***
d. No → ***See question 1.11***

1.9 How often do you volunteer?

a. 5 or more times a week
b. 2-4 times a week
c. Once per week
d. 1-3 times per month
e. Less then once per month
f. Do not know

1.10 Where do you volunteer?

(Please do not read the choices and check each box that applies)

Position	Yes (√)
Senior or Older Adult Centre	
Community Support Services	
Hospital	
Homeless shelter	
Animal Shelter	
Not for profit organization	
Condominium	
Other _____	

1.11 Please indicate your level of agreement with the following statements regarding volunteering. **Please indicate if you Strongly Agree, Agree, are Neutral, Disagree or Strongly Disagree.**

(Please read the choices and check each box that applies)

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
It is important for me to volunteer.					
I like volunteer positions that allow me to take on a leadership role.					
I prefer volunteer opportunities that are time limited or short term rather than on- going.					
I prefer to work as a volunteer behind the scenes or in administrative roles.					
I would rather pursue other interests instead of volunteer work.					

Part 2: Older Adult Centres
The second part of this questionnaire will examine the current image of Centres. It will help in forming a strategic plan for recreation facilities and Centres.

2.1 When you think of an Older Adult or Senior Centre, what image pops into your mind?

_____

_____

_____

2.2 What do you think the average age is of a participant at an Older Adult or Senior Centre?

_____

2.3 On a scale from one to ten how active do you think the average member of an Older Adult or Senior Centre is?

1 2 3 4 5 6 7 8 9 10

Not active at all Fairly active Extremely active

2.4 Would you be interested in joining an Older Adult or Senior Centre?

a. No
b. Maybe
c. Yes

Part 3: Motivations
The third part of this questionnaire will examine the motivations towards leisure and recreation activities. It will help to develop a profile of the current older adults in your community and to identify health and recreation needs.

3.1 How important are the following aspects in your life? **Please say if it is Very Important, Important, Neutral, Moderately Important or Not Important.**

(Please read the choices and check each box that applies)

	Not Important	**Moderately Important**	**Neutral**	**Important**	**Very Important**
Making fulfilling friendships					
Developing new skills					
Accomplishing something worthwhile					
Having routine and structure in my life					
Helping others					
Socializing with people					
Remaining independent					
Personal growth					
Developing a healthy lifestyle					
Keeping my mind active					
Having responsibilities and a position of status					
Developing my creativity					
Staying physical fit					

Part 4: Health
The fourth part of this questionnaire will examine the impact recreation and leisure activities have had on your health. It will help in identifying the health and recreation needs of older adults and help form a strategic plan for your community.

4.1 In general, how would you describe your health?

f. Very Poor
g. Poor
h. Fair or Moderate
i. Good
j. Excellent

4.2 In general, how would you describe your physical activity level?

f. Very Low
g. Low
h. Moderate
i. High
j. Very High

4.3 On a scale from one to ten please rate how satisfied you are with the following qualities in you life. **1 or 2 being Not at all; 3 or 4 being Slightly; 5 or 6 being Moderately; 7 or 8 being Considerably; 9 or 10 being Extremely.**

(Please read the choices and check each box that applies)

Overall my satisfaction with my….	Do Not Know	Not at all		Slightly		Moderately		Considerably		Extremely	
Overall Wellness		1	2	3	4	5	6	7	8	9	10
Opportunities for knowledge and skill development		1	2	3	4	5	6	7	8	9	10
Level of social interaction		1	2	3	4	5	6	7	8	9	10
Sense of routine and structure		1	2	3	4	5	6	7	8	9	10
Opportunities for creativity and personal growth		1	2	3	4	5	6	7	8	9	10
Level of physical activity		1	2	3	4	5	6	7	8	9	10
Accomplishments		1	2	3	4	5	6	7	8	9	10

4.4 What medical conditions do you currently have?

□ Do not have any medical conditions → ***See Question 4.5***

(Please read the choices and check each box that applies)

Medical Condition	Yes (√)
Arthritis or Rheumatism	
High Blood Pressure	
Diabetes	
Back Problems	
Heart Disease	
Eye Problems (i.e. Cataracts)	
Hearing problems	
Osteoporosis	
Other _____	

4.5 Do you have a chronic or ongoing illness?

c. No → ***If No to both Questions 4.4 AND 4.5, please See Part 5: Profile***
d. Yes

4.6 How much have these medical conditions or illnesses impeded or stopped you from doing the activities or things you like to do?

f. Not at all
g. Slightly
h. Moderately
i. Considerably
j. Extremely

Part 5: Profile
The final part of this questionnaire will ask a few personal questions. It will help in developing a profile of members of your community. This part is very crucial to the results but if you feel uncomfortable at any time you may skip a question or terminate the questionnaire.

5.1 Where do you live?
a. City
b. Suburban area
c. Rural area

5.2 What type of dwelling do you live in while staying in this area?
a. House
b. Apartment or Condo
c. Senior Retirement Residence
d. Assisted Housing
e. Mobile Home

5.3 How long have you lived in this area?
a. Less than one year
b. 1-5 years
c. Over 5 years

5.4 Do you spend the entire year in this area or do you travel to another location for part of the year (i.e. winter months)?
a. Stay in this area
b. Travel to another location for part of the year

5.5 Who do you live with?
g. Alone
h. Spouse
i. Children
j. Parent
k. Relatives
l. Non-relatives

5.6 Including yourself, how many people live in your household? _____

5.7 What is your marital status?
e. Married → ***See question 5.8***
f. Widowed → ***See question 5.9***
g. Divorced → ***See question 5.9***
h. Single → ***See question 5.9***

5.8 Do you participate in recreation activities with your spouse?

a. Yes
b. No

5.9 Do you currently work part time or full time?

a. No
b. Yes, part time
c. Yes, full time

5.10 Please indicate which of the following computer resources you access.

(Please read the choices and check each box that applies)

Resource	Yes (√)
Computer	
Email	
Dial Up Internet	
High Speed Internet	

5.11 Is English your first language?

c. Yes
d. No _____**(Please indicate which language)**

Please have the participant fill in the final questions on the next page. Close the survey upon completion, place it in the envelope and

5.12 Please indicate your sex.

c. Male
d. Female

5.13 What is your ethnic origin?

A. Canadian
B. English
C. French
D. Scottish
E. Irish
F. German
G. Italian
H. Chinese
I. Ukrainian
J. North American Indian
K. Dutch
L. Polish
M. East Indian
N. West Indian
O. Pakistani
P. Jewish
Q. Portuguese
R. Filipino
S. American
T. Greek
U. Spanish
V. Jamaican
W. Vietnamese
X. Latin Mexican
Y. Caribbean
Z. Other

5.14 Please circle the year bracket in which you were born

f. 1959 or later
g. 1944-1958
h. 1934-1943
i. 1924-1933
j. 1923 or before

5.15 What is your highest level of education?

f. Less than High School Diploma
g. High School Diploma
h. College or Associate degree
i. Undergraduate degree
j. Post-graduate

5.16 Please circle your annual household income bracket.

d. Under $25, 000
e. $25, 000- $69, 999
f. $70, 000 and over

Thank you for taking the time to complete this questionnaire.
The questionnaire will now be closed and placed in a sealed envelope.
Your participation will greatly benefit your
Centre and others across Ontario.

Appendix D. Matrix of BBTP Variables for Analysis

	Variables	**Survey Section / Question**
Objective 1: Compare OAC users and non-users		
Demographics	Age range Sex Living arrangements[1] Education Employment status Income Location (urban/suburban, rural)[2] Dwelling type English as a first language status	Section 6 (users) Section 4 (non-users)
Health	Self-rated health Self-rated physical activity level Chronic conditions	Section 5 (users) Section 4 (non-users)
Community Participation	Other facilities accessed Volunteer in the community	Q1.9, Q1.10, Q2.14 (users) Q1.1, Q1.2, Q1.7, Q1.8 (non-users)
Interest in attending an OAC	Perceptions of OACs Interest in joining an OAC in future	Q2.1, Q2.4 (non-users only)
Objective 2: Compare frequent and in-frequent centre users		
Centre Participation	Frequency of attendance Hours per visit Hours per week[3] Program participation Volunteerism Interest in attending more with better transportation	Q1.2 Q1.3 Q2.1 Q2.4 Q2.10 Q1.7
Demographics	Described above	Section 6
Health	Described above	Section 5
Transportation	Proximity to centre Mode of transportation Availability of better transportation	Q1.5 Q1.6 Q1.7
Community Participation	Described above	Q1.9, Q1.10, Q2.14 (users)

1 Due to high correspondence between living arrangements and marital status, living arrangements was selected for analyses.

[2] Definitions of urban, suburban and rural not provided; as urban and suburban participants did not differ from one another on any variable, they were combined into one group.

3 Frequency of attendance and hours per visit were combined to compute an estimate for the number of hours per week spent at the centre.

Appendix E. MC-GEP Session 1 Materials

PARTICIPANT INFORMATION LETTER
Resource Development for Older Adult Centres

Thank you for your interest in this important project being conducted by the Older Adult Centres' Association of Ontario (OACAO), funded by the Ontario Ministry of Citizenship and Immigration. The goal of this project is to create resources that your centre and others can use to learn more about its members, and the types of programs and services that best meet their members' needs and interests.

For this project, you will be asked to meet with a staff member or volunteer from your centre on two separate occasions (about two weeks apart) for about 30 to 45 minutes. At each meeting, you will be asked to complete some short questionnaires that ask about your background, social and physical well-being. The meetings with staff or volunteers will take place at your centre at a convenient time and may be done in small groups with other members who are also participating in the project. In between meetings, you will be asked to fill out a simple travel diary for 14 days noting the types of trips you make each day and the basic purpose of each trip. These diaries are in checklist format and will only take a few minutes to complete each day. Throughout the process, you will have a chance to ask questions and provide feedback.

All of the information you provide will be kept totally confidential (no names will be used). Only the OACAO and associated researchers will have access to the data and results will be summarized anonymously across all participants. You may skip any questions you prefer not to answer.

If you have any questions or concerns about participating in this project, please contact: _____ at your centre.

Your participation is greatly appreciated and we would like to thank you on behalf of your centre and the OACAO.

Yours Sincerely,

Sue Hesjedahl
Executive Director, OACAO

Background Questionnaire for OAC Members

Instructions: The information from this questionnaire will assist our centre in promoting and delivering programs and services that meet member interests and needs. This should only take about 10 minutes. All information will be kept totally confidential. You may skip any questions you prefer not to answer; however, we hope you will provide as much information as you can. If you have any questions, please ask _____.

Part A. Please answer a few questions about the centre

1. People attend the centre for many reasons. What is the **number one reason** you joined or keep coming to this centre? Please check only one from list below.

   - ☐ To meet new people and socialize
   - ☐ To get out of the house
   - ☐ To have routine in my life
   - ☐ To develop new skills or try new things
   - ☐ To improve my diet/nutrition
   - ☐ To be creative
   - ☐ For personal growth
   - ☐ To be physically active
   - ☐ I like the staff and/or volunteers at the centre
   - ☐ To be involved in leadership positions (e.g., board member, or activity leader)
   - ☐ Other: _____

2. Are you interested in **volunteering** at this centre?

   - ☐ Yes
   - ☐ No, but I am interested to learn more about volunteer opportunities
   - ☐ No, I am not interested in volunteering with the centre at this time
   - ☐ I already volunteer at the centre

Part B. Tell us about your activities outside of the centre

1. In a typical week, how often (# of days) do you **leave your neighbourhood** (i.e., travel more than 1 km from home)?

   _____ days a week ☐ Less than once a week

2. In a typical week, how often (# of days) do you usually **get together** with people outside of your home (e.g., meet for lunch, go for a walk or to a movie)?

   _____ days a week ☐ Less than once a week

3. Do you consider this centre to be the **primary place** for your recreation, leisure and social activities?
   - ☐ Yes
   - ☐ No
   - ☐ Not applicable; I am new to the centre

4. Where else do you go for **recreation, leisure and social activities**? Check all that apply.

   - ☐ Cultural or religious centre
   - ☐ Fitness centre (e.g., YMCA)
   - ☐ Private clubs (e.g., golf club, sailing club)
   - ☐ Community centre or public facilities (e.g., swimming pool)
   - ☐ Another older adult centre (name: _____)
   - ☐ Other: _____

5. During the past year, did you **volunteer formally** with any organization?
   - ☐ Yes
   - ☐ No

6. Do you usually spend part of the year (i.e., a month or more) **away from home**?
   - ☐ No
   - ☐ Yes, I am usually away in the months of: _____

Part C. Now tell us about your health

1. **Overall**, would you say your health is:
   - ☐ Excellent
   - ☐ Very good
   - ☐ Good
   - ☐ Fair
   - ☐ Poor

2. Do you have any **allergies**?
   - ☐ No
   - ☐ Yes, I am allergic to: _____

3. Do you ever use a **cane** or **walker**?
   - ☐ Yes
   - ☐ No

4. In the past year, have you **fallen** (i.e., ended up on the ground or floor)?
   - ☐ Yes
   - ☐ No

5. Have you been **diagnosed** with any of the following? Check all that apply.

   - ☐ Arthritis
   - ☐ Osteoporosis
   - ☐ Diabetes
   - ☐ Respiratory conditions
   - ☐ Chronic back, foot, or joint (e.g., hip, knee) conditions
   - ☐ High blood pressure, high cholesterol, or heart conditions
   - ☐ Hearing loss
   - ☐ Vision disorders (e.g., glaucoma)

☐ Other diagnosed condition: _____

Part D. Lastly, tell us about yourself

1. What is your **date of birth**?

   _____ (month) _____ (year)

2. Are you:

   ☐ Male ☐ Female ☐ Transgender

3. What is your current **marital status**?

   ☐ Married / common-law relationship ☐ Widowed
   ☐ Divorced ☐ Never married

4. Who do you **live with**?

   ☐ I live alone ☐ Spouse or partner ☐ Relatives ☐ Non-relatives

5. What **languages** are you comfortable speaking?

   ☐ English ☐ French ☐ Other: _____

6. Do you consider yourself to be part of a **particular ethnic or cultural group** (e.g., Aboriginal, Caribbean, Spanish, Filipino, Chinese)?

   ☐ Yes (please specify: _____) ☐ No

7. What is your **highest level of education**?

   ☐ Some high school ☐ Completed some college or university
   ☐ Completed high school ☐ Completed college or university
   ☐ Completed post graduate studies

8. What is your current **employment status**?

   ☐ Full-time ☐ Part-time ☐ Retired ☐ Looking for work
   ☐ Not applicable; did not do paid work out of the home

9. How would you describe your **financial situation**?

   ☐ I can meet my needs and still have enough money left to do most things
   ☐ I have enough money to do many things I want if I budget carefully
   ☐ I have enough money to meet my needs but have little left for extras
   ☐ I can barely meet my needs and have nothing left for extras

10. Do you currently receive the **Guaranteed Income Supplement** (GIS)?

☐ Yes ☐ No ☐ Not sure

11. How **far do you live from this centre**?

☐ Less than 2km
☐ 2 to 10 km
☐ More than 10 km
☐ Not sure

12. How do you **usually get around**? Check all that apply.

☐ Drive myself
☐ Walk
☐ Motorized scooter or wheelchair
☐ Other: _____
☐ Rides from friends or family
☐ Public transit
☐ Accessible Transit

Vitality Plus Scale

This scale looks at how you are **currently feeling.** For each statement, circle a number from 1 to 5 that best describes you. For example, if you usually fall asleep quickly then you want to circle (5). Otherwise, circle a number from 1 to 4, depending on how much difficulty you usually have falling asleep.

Takes a long time to fall asleep	1	2	3	4	5	Fall asleep quickly
Sleep poorly	1	2	3	4	5	Sleep well
Tired or drowsy during the day	1	2	3	4	5	Feel rested
Rarely hungry	1	2	3	4	5	Excellent appetite
Often Constipated	1	2	3	4	5	Do not get constipated
Often have aches & pains	1	2	3	4	5	Have no aches & pains
Low energy level	1	2	3	4	5	Full of pep & energy
Often stiff in the morning	1	2	3	4	5	Not stiff in the morning
Often restless or agitated	1	2	3	4	5	Feel relaxed
Often do not feel good	1	2	3	4	5	Feel good

UCLA 3-Item Loneliness Scale

1. **How often do you feel that you lack companionship?**

Hardly ever	Some of the time	Often
1	2	3

2. **How often do you feel left out?**

Hardly ever	Some of the time	Often
1	2	3

3. **How often do you feel isolated from others?**

Hardly ever	Some of the time	Often
1	2	3

Appendix F. MC-GEP Travel Diary Materials

Travel Diary Instructions

We are asking you to complete a travel diary each day for 14 days. Each sheet has been dated and provides space to describe up to 6 round trips to and from your home (front and back). If you make more than six round trips on a particular day, please use one of the additional undated sheets provided and record the date at the top. Two travel diary examples have also been provided in your package.

- For **each trip that you make outside of your home** on a given day, please fill in the following information:
    - Approximate time that you left home
    - Type of transportation you used (e.g., I drove, took bus)
    - Purpose(s) of your trip (e.g., got groceries, went to a restaurant)
    - Maximum distance from your home to your destination
    - Type of transportation used to get home (i.e., same as above or different)
    - Approximate time you returned home

- Only record **trips made outside of your dwelling** (i.e., house, apartment). Please do not include times you went outside to the yard or the garage.

- For all the pages that you complete, please be sure to put your initials and the total number of trips that you took (at the top of each page). If you did not make any trips that day, please put "0" next to "# of trips" at the top right corner of the page.

- If you travelled to your destination by car, please indicate who drove. You don't need to give the person's name, just your relationship to that person (e.g., friend, daughter) and their initials. Please see provided examples.

- For the trip purpose(s), you do not need to provide a specific address of where you went, just tell us the general purpose of the trip (e.g., pharmacy or grocery store). If you travelled out of town, please indicate where you went (e.g., Toronto, Burlington).

- If your trip included multiple stops, please indicate the distance for the stop that is furthest from your home.

- Many people like to complete the diary at the end of the day when they are not going out again. Other people like to complete the diary after they return home from each trip. In any case, this should only take you a few minutes each day.

If you have any questions, please contact _____at your centre.

Centre: _____ Initials: _____ Date: _____ Total # trips: _____

Travel Diary - Day 1

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	FURTHEST DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 1					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 2					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 3					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					

Centre: _____ Initials: _____ Date: _____ Total # trips: _____

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 4					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 5					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 6					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					

Centre: Square One OAC Initials: CS Date: November 1 2016 Total # trips: 4

TRAVEL DIARY EXAMPLE 1

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	FURTHEST DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 1					
9:00 ☒ am ☐ pm	☐ Walked ☒ Car: I drove ☐ Public transportation ☐ Taxi ☐ Other:	Went to the grocery store, pharmacy and post-office.	☐ Less than 1km ☒ 1km to 15 km ☐ 15+ km	☒ same ☐ different (specify):	10:00 ☐ am ☐ pm
What was the weather like (e.g., raining): Sunny and warm					
TRIP 2					
10:45 ☒ am ☐ pm	☒ Walked ☐ Car: drove ☐ Public transportation ☐ Taxi ☐ Other:	Went to YMCA for aqua fitness class	☒ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☒ same ☐ different (specify):	12:15 ☐ am ☐ pm
What was the weather like (e.g., raining): Sunny with some clouds					
TRIP 3					
1:00 ☐ am ☒ pm	☒ Walked ☐ Car: drove ☐ Public transportation ☐ Taxi ☐ Other:	Went to the Square One Older Adult Centre to play bridge and do yoga.	☐ Less than 1km ☒ 1km to 15 km ☐ 15+ km	☐ same ☒ different (specify): *Friend drove me home*	4:00 ☐ am ☒ pm
What was the weather like (e.g., raining): Sunny with some clouds					

Centre: _____ Initials: _____ Date: _____ Total # trips: _____

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	FURTHEST DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 4					
6:00 ☐ am ☒ pm	☐ Walked ☒ Car: Son (J.D.) drove ☐ Public transportation ☐ Taxi ☐ Other: _____	Went to a restaurant for dinner with my son	☐ Less than 1km ☐ 1km to 15 km ☒ 15+ km	☒ same ☐ different (specify):	8:00 ☐ am ☒ pm
What was the weather like (e.g., raining): Cloudy and getting dark out					
TRIP 5					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 6					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					

Centre: Square One OAC Initials: CS Date: November 2 2016 Total # trips: 2

TRAVEL DIARY EXAMPLE 2

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	FURTHEST DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 1					
9:00 ☒ am ☐ pm	☐ Walked ☐ Car: _____ drove ☒ Public transportation ☐ Taxi ☐ Other: _____	Went to Square One Older Adult Centre for exercise and lunch. Also played euchre.	☐ Less than 1km ☒ 1km to 15 km ☐ 15+ km	☒ same ☐ different (specify):	2:30 ☐ am ☒ pm
What was the weather like (e.g., raining): Overcast and raining					
TRIP 2					
4:00 ☐ am ☒ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☒ Other: Biked	Went to Tim Hortons for coffee with friends	☐ Less than 1km ☒ 1km to 15 km ☐ 15+ km	☒ same ☐ different (specify):	5:00 ☐ am ☒ pm
What was the weather like (e.g., raining): Cloudy					
TRIP 3					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					

Centre: _____ Initials: _____ Date: _____ Total # trips: _____

TIME LEFT	MODE OF TRAVEL TO DESTINATION	TRIP PURPOSE(S)	FURTHEST DISTANCE FROM HOME	MODE OF TRAVEL BACK HOME	RETURN TIME
TRIP 4					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 5					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					
TRIP 6					
_____ ☐ am ☐ pm	☐ Walked ☐ Car: _____ drove ☐ Public transportation ☐ Taxi ☐ Other: _____		☐ Less than 1km ☐ 1km to 15 km ☐ 15+ km	☐ same ☐ different (specify):	_____ ☐ am ☐ pm
What was the weather like (e.g., raining):					

Appendix G. MC-GEP Session 2 Materials

Travel Verification

Looking at your travel diaries:

1. Did you have any difficulty completing the travel diaries?

   ____ Yes

   ____ No

2. Would you say that your travel patterns (i.e., # of trips made) over the past two weeks were **fairly typical?**

   ____ Yes

   ____ No, I took more trips than usual

   ____ No, I took fewer trips than usual

3. Do you usually use these modes of travel:

   ____ Yes

   ____ No

   If no, please explain what was different:

   _____

   _____

4. Where there any special circumstances (e.g., illness), events (e.g., birthdays), or cancellations in the past two weeks that may have affected your usual travel patterns?

   _____

   _____

Life-Space Assessment

Initials: _____ **Centre Name:** _____ **Date:** _____

In the past <u>two weeks</u>, have you been to:		**How often did you get there?**	**Did you use aids or special equipment?**	**Did you need help from another person?**	**How do you <u>usually</u> get there?**
Other rooms of your home, besides the room where you sleep?	☐ Yes ☐ No	☐ less than once a week ☐ 1-3 times a week ☐ 4-6 times a week ☐ Daily	☐ Yes ☐ No ☐ Not sure	☐ Yes ☐ No ☐ Not sure	
Areas outside your home such as your porch, patio or deck, hallway of apartment, or garage, in your own yard or driveway?	☐ Yes ☐ No	☐ less than once a week ☐ 1-3 times a week ☐ 4-6 times a week ☐ Daily	☐ Yes ☐ No ☐ Not sure	☐ Yes ☐ No ☐ Not sure	
Places in your neighbourhood, other than your own yard or apartment building?	☐ Yes ☐ No	☐ less than once a week ☐ 1-3 times a week ☐ 4-6 times a week ☐ Daily	☐ Yes ☐ No ☐ Not sure	☐ Yes ☐ No ☐ Not sure	☐ Drive my car ☐ Passenger ☐ Public transit ☐ Walk ☐ Other: _____
Places outside your neighbourhood, but within your town?	☐ Yes ☐ No	☐ less than once a week ☐ 1-3 times a week ☐ 4-6 times a week ☐ Daily	☐ Yes ☐ No ☐ Not sure	☐ Yes ☐ No ☐ Not sure	☐ Drive my car ☐ Passenger ☐ Public transit ☐ Walk ☐ Other: _____
Places outside your town?	☐ Yes ☐ No	☐ less than once a week ☐ 1-3 times a week ☐ 4-6 times a week ☐ Daily	☐ Yes ☐ No ☐ Not sure	☐ Yes ☐ No ☐ Not sure	☐ Drive my car ☐ Passenger ☐ Public transit ☐ Walk ☐ Other: _____

Questionnaire on Centre Utilization and Transportation

Part A: Driving Status

1. Do you **currently drive** a motor vehicle? ☐ Yes ☐ No

   If yes, **how often** do you usually drive? _____ days a week
   ☐ Less than once a week

   If no, did you **use to drive?**
   ☐ No
   ☐ Yes, I stopped driving less than one year ago
   ☐ Yes, I stopped driving more than one year ago

2. Apart from yourself, are there any other **drivers in your household?** ☐ Yes ☐ No

3. Does anyone **rely on you** to drive them? ☐ Yes ☐ No

Part B: Centre Use & Support

1. Which **programs or activities** do you usually do at this centre? Check all that apply.
   - ☐ Exercise & dance classes
   - ☐ Games (e.g., Bridge, Snooker)
   - ☐ Music (e.g., singing, choir)
   - ☐ Arts & Crafts (e.g., painting)
   - ☐ Discussion Groups (e.g., book club)
   - ☐ Computer courses or workshops
   - ☐ Education (e.g., seminars, lectures)
   - ☐ English as a second language classes
   - ☐ Intergenerational programs
   - ☐ Multi-cultural programs
   - ☐ Trips and travel
   - ☐ Special events
   - ☐ Other: _____

2. **How long** have you been coming to this centre?
   - ☐ Less than 1 year
   - ☐ 1 to 2 years
   - ☐ 3 to 5 years
   - ☐ 6 to 10 years
   - ☐ More than 10 years
   - ☐ Not sure

3. How often (# of days) do you **<u>usually</u> come to this centre?**
   _____ days a week ☐ Less than once a week

4. What **days of the week** do you usually come to this centre, and **how many hours** do you <u>typically</u> spend on those days?
   - ☐ Monday: _____ hours
   - ☐ Tuesday: _____ hours
   - ☐ Wednesday: _____ hours
   - ☐ Thursday: _____ hours
   - ☐ Friday: _____ hours
   - ☐ Saturday: _____ hours
   - ☐ Sunday: _____ hours

5. Did you **know anyone** (e.g., staff, volunteers or other members) at this centre before you joined?
   ☐ No ☐ Yes, I knew _____

6. Have you **made any new friends** at this centre?
   ☐ No *(skip to question 7)* ☐ Yes, I've made _____ friends

   If yes, do you spend time with these individuals outside of the centre?
   ☐ No ☐ Yes ☐ Not applicable

   If yes, what activities do you do with them? Check all that apply.
   - ☐ Go shopping
   - ☐ Attend an educational event (e.g., a lecture)
   - ☐ Go to church, temple, or Synagogue
   - ☐ Attend a club or group (e.g., book club, knitting club)
   - ☐ Volunteer together
   - ☐ Eat out at a restaurant
   - ☐ Provide transportation
   - ☐ Play games or watch TV
   - ☐ Go to the movies, theatre or concert
   - ☐ Attend social events (e.g., a party)
   - ☐ Go to a sporting event, casino, or racetrack
   - ☐ Overnight trips
   - ☐ Trips out of the province
   - ☐ Trips out of the country
   - ☐ Other: _____

7. I would come to this centre **more often** if the following things were improved (check all that apply):

   - ☐ Transportation
   - ☐ Parking
   - ☐ Program equipment and supplies
   - ☐ Space for programs
   - ☐ Signage for the building
   - ☐ Wheel chair accessibility
   - ☐ Building maintenance (e.g., cleanliness)
   - ☐ Hours of operation
   - ☐ Other features of the centre (please specify): _____
     _____
   - ☐ None of the above impact how often I attend the centre

Medical Outcomes Study Social Support Survey

People sometimes look to others for companionship, assistance or other types of support. How often is each of the following kinds of support available to you at the centre if you need it?

	Not at all		Sometimes		Always
	1	2	3	4	5
Someone you can count on to listen when you need to talk	☐	☐	☐	☐	☐
Someone to give you information to help you understand a situation	☐	☐	☐	☐	☐
Someone to give you good advice about a crisis	☐	☐	☐	☐	☐
Someone to confide in or talk to about yourself or your problems	☐	☐	☐	☐	☐
Someone whose advice you really want	☐	☐	☐	☐	☐
Someone to share your most private worries and fears with	☐	☐	☐	☐	☐
Someone to turn to for suggestions about how to deal with a personal problem	☐	☐	☐	☐	☐
Someone who understands your problems	☐	☐	☐	☐	☐
Someone who shows you love and affection	☐	☐	☐	☐	☐
Someone to love and make you feel wanted	☐	☐	☐	☐	☐
Someone who hugs you	☐	☐	☐	☐	☐
Someone to have a good time with	☐	☐	☐	☐	☐
Someone to get together with for relaxation	☐	☐	☐	☐	☐
Someone to do something enjoyable with	☐	☐	☐	☐	☐
Someone to do things with to help get your mind off things	☐	☐	☐	☐	☐

The Activities-specific Balance Confidence Scale

For each of the following activities, please indicate your level of self-confidence by checking one of the boxes from 0% (no confidence) to 100% (completely confident).

If you **normally** use a walking aid to do the activity or hold onto someone, rate your confidence as if you were using these supports.
If you do **not currently** do the activity, try and imagine yourself in the situation.

How confident are you that you can maintain your balance and remain steady when you....

	No Confidence		Moderately		Completely Confident
	0%	**25%**	**50%**	**75%**	**100%**
1. walk around inside your house or apartment?	☐	☐	☐	☐	☐
2. walk up or down stairs?	☐	☐	☐	☐	☐
3. bend over and pick up a slipper from the floor?	☐	☐	☐	☐	☐
4. reach for a small can off a shelf at eye level?	☐	☐	☐	☐	☐
5. stand on your tip toes and reach for something above your head?	☐	☐	☐	☐	☐
6. stand on a chair and reach for something?	☐	☐	☐	☐	☐
7. sweep the floor?	☐	☐	☐	☐	☐
8. walk outside to a car parked nearby?	☐	☐	☐	☐	☐
9. get into or out of a car?	☐	☐	☐	☐	☐
10. walk across a parking lot to a shopping centre?	☐	☐	☐	☐	☐

How confident are you that you can maintain your balance and remain steady when you....

	No Confidence		Moderately		Completely Confident
	0%	**25%**	**50%**	**75%**	**100%**
11. walk up or down a slope?	☐	☐	☐	☐	☐
12. walk in a crowded shopping centre where people rapidly walk past you?	☐	☐	☐	☐	☐
13. are bumped into by people?	☐	☐	☐	☐	☐
14. step onto or off of an escalator while holding onto a railing?	☐	☐	☐	☐	☐
15. step onto or off an escalator while holding parcels such that you cannot hold onto the railing?	☐	☐	☐	☐	☐
16. walk outside on slippery (wet or icy) pavement?	☐	☐	☐	☐	☐

Appendix H. MC-GEP Variables for Analysis

	Variables	**Data Source(s)**
Objective 1: Profile OAC Users on Indicators of Well-being and Mobility		
Well-being Characteristics	Loneliness Balance confidence Vitality Life-space mobility	UCLA 3-item Loneliness ABC Scale VPS Life-Space Assessment
Demographic Characteristics	Age Gender Living arrangements[1] Education Guaranteed Income Supplement Employment Driver status	OAC-BQ Centre use and transportation questionnaire
Health Characteristics	Falls history Use of a mobility device Self-rated health Chronic conditions	OAC-BQ
Objective 2: Characterize Out-of-Home Mobility and Activity Patterns of Centre Users		
Life-Space Mobility	Life-space composite score Restricted life-space	Life-Space Assessment
Out-of-Home Travel	Total trips Trips per day Total hours Hours per day Hours per trip Days with no trips Distance travelled Mode of transit	Travel diaries
Activity Patterns	Trip purpose	Travel diaries
Objective 3: Characteristics Associated with Actual OAC Participation		
Centre Participation (Travel Diaries)	Weekly visits Hours per week Hours per visit Program participation Distance travelled Number of days and hours per week in relation to the centre's operating hours	Travel dairies Centre use and transportation questionnaire
Social Environment at the Centre	Friends at the Centre Perceived Social Support	Centre use and transportation questionnaire Medical Outcomes Study Social Support Scale

Centre as Primary Place for Social Engagement	Primary place (yes/no) % of total trips to centre % of hours at centre % of recreation trips at the centre	OAC-BQ Travel diaries
General Characteristics	Described above	Described above
Health Characteristics	Described above	Described above
Well-being Characteristics	Described above	Described above

[1] Due to high correspondence between living arrangements and marital status, living arrangements was selected for analyses

Appendix I. Trip Purpose Coding

Code	Examples
Centre	Going to centre
Community Recreation Facility	Bowling alley, community centre, arena, YMCA
Legion	Legion
Private Club	Golf, sailing
Educational Event	Workshop, university classes
Club or Social Group	Knitting group, choir, board member
Art and Culture	Movies, theatre, art gallery, concert, play
Sporting Events & Casino	Baseball game, hockey games, casino
Shopping with Friends / Family	Go shopping with friends/family (E.g., Christmas shopping)
Informal Social Gatherings	Birthday party, wedding, BBQ, visiting friends, play cards
Restaurants	Eating at a restaurant, café, coffee shop
Household Errands	Groceries, post office, hardware store
Personal Errands	Hair or nail appointment, income tax, meet with lawyers
Medical Appointment	Chiropractor, medical doctor, social work, diagnostic tests
Church	Church
Work	Paid work
Volunteer	Volunteer
Helping Others	Give rides, babysit grandkids, deliver meals to neighbours
Outdoor Exercise / Work	Walk in the park, walk the dog, go for bike ride
Out-of-Town Trips	Travel to another town
Over Night Trips	Stay overnight in another location (e.g., camp, family)
Return Home	Return home from an overnight trip
Unknown	No purpose specified
Other	Political event, jury duty
Overall Category	**Codes and Examples**
Recreation	Centre, community recreation facility, private clubs, social groups, educational events, arts and culture, sporting events
Informal Social Gatherings	Shopping with friends, restaurants, social gatherings
Errands	Personal errands, household errands
Volunteering/Helping Others	Volunteering, helping others
Medical Appointments	Medical appointments
Out-of-Town Travel	Out-of-town travel, over-night trips
Other	Church, outdoor exercise trips, unknown trips, other trips

Appendix J. Additional Data for BBTP

Table 1. Demographic Characteristics of Included verses Excluded Users and Non-Users (presented as frequency (%) by category).

	Centre Users (n=2,412)		**Non-Users** (n=680)	
	Included (n=2,239)	**Excluded** (n=173)	**Included** (n=540)	**Excluded** (n=140)
Sex	**n=2,112**	**n=155**	**n=517**	**n=136**
Male	537 (25.4%)	48 (31%)	180 (33.3%)	38 (27.9%)
Female	1,575 (74.6%)	107 (69%)	337 (65.2%)	98 (72.1%)
Age[a,b]	**n=2,148**	**n=157**	**n=523**	**n=137**
50 or younger	0	16 (10.2%)	0	22 (16.1%)
51-65	315 (14.7%)	22 (14%)	290 (36.3%)	27 (19.7%)
66-75	907 (42.2%)	54 (34.4%)	202 (38.6%)	51 (37.2%)
76-85	747 (34.8%)	59 (37.6%)	107 (20.5%)	28 (20.4%)
86 or older	179 (8%)	6 (3.8%)	24 (4.6%)	9 (6.6%)
Living Arrangements[a,b]	**n=2,208**	**n=161**	**n=532**	**n=139**
Alone	916 (41.5%)	65 (40.4%)	172 (32.3%)	61 (43.9%)
Spouse	1,079 (48.9%)	69 (42.9%)	314 (59%)	70 (50.4%)
Other Friends/Family	213 (9.6%)	27 (16.7%)	46 (8.6%)	8 (5.8%)
Highest Education	**n=2,130**	**n=154**	**n=526**	**n=136**
Less than High School	373 (17.5%)	35 (22.7%)	100 (19%)	25 (18.4%)
High School	873 (41%)	53 (34.4%)	163 (31%)	41 (30.1%)
College or University	884 (41.5%)	66 (42.9%)	263 (50%)	70 (51.5%)
Employment	**n=2,170**	**n=155**[**]	**n=526**	**n=139**
Retired	1,960 (90.3%)	128 (82.6%)	362 (68.8%)	103 (74.1%)
Working	210 (9.7%)	27 (17.4%)	164 (31.2%)	36 (25.9%)
Annual Income	**n=1,758**	**n=135**	**n=467**	**n=110**
Under $25,000	457 (26%)	28 (20.7%)	93 (19.9%)	27 (24.5%)
$25,000 - $69,999	1,087 (61.8%)	85 (63%)	268 (57.4%)	57 (51.8%)
$70,000 and Over	214 (12.2%)	22 (16.3%)	106 (22.7%)	26 (23.6%)
Location	**n=2,200**	**n=159**	**n=531**	**n=139**
Urban area	1,376 (62.5%)	105 (66%)	323 (60.8%)	87 (62.6%
Suburban Area	580 (26.4%)	33 (20.8%)	155 (29.2%)	45 (32.4%)
Rural Area	244 (11.1%)	21 (13.2%)	53 (10%)	7 (5%)
Dwelling Type	**n=2,215**	**n=159**[***]	**n=533**	**n=139**
House	1,419 (64.1%)	89 (56%)	373 (70%)	78 (56.1%)
Apartment/Condo	706 (31.9%)	50 (31.4%)	146 (27.4%)	47 (33.8%)
Other (e.g,. mobile home)	90 (4.1%)	20 (12.6%)	14 (2.6%)	13 (10.1%)

[a] Significant group differences for included versus excluded centre users

[b] Significant group differences for included versus excluded non-users

Table 2. Health Characteristics of Included verses Excluded Users and Non-Users (presented as mean ± SD or frequency (%) by category).

	Centre Users		**Non-Users**	
	Included (n=2,239)	**Excluded** (n=179)	**Included** (n=540)	**Excluded** (n=139)
Self-Rated Health	**n=2,195**	**n=158**	**n=535**	**n=138**
Very Poor / Poor /Fair	555 (25.3%)	61 (38.6%)	163 (30.5%)	36 (26.1%)
Good / Excellent	1,640 (74.7%)	97 (61.4%)	372 (69.5%)	102 (73.9%)
Average Rating[1,a,b]	3.90 ± 0.73	3.54 ± 0.95	3.80 ± 0.78	3.97 ± 0.76
# Chronic Conditions	2.15 ± 1.64	2.29 ± 1.84	2.10 ± 1.70	1.81 ± 1.55
Physical Activity Level	**n=2,190**	**n=158**	**n=533**	**n=138**
Very Low / Low	201 (9%)	44 (27.8%)	103 (19.3%)	14 (10.1%)
Moderate	1,207 (53.9%)	87 (55.1%)	289 (54.2%)	74 (53.6%)
High / Very High	782 (34.9%)	27 (17.1%)	141 (26.5%)	42 (30.4%)
Average Rating[2,a,b]	3.32 ± 0.78	2.85 ± 0.86	3.09 ± 0.86	3.30 ± 0.79

[a] Significant group differences for included versus excluded centre users

[b] Significant group differences for included versus excluded non-users

[1] Rated on a 5-point likert scale: 1 = very poor; 2 = poor; 3 = fair; 4 = good; 5 = excellent.

[2] Rated on a 5-point likert scale: 1= very low; 2 = low; 3 = moderate; 4 = high; 5 = very high.

Table 3. Associations between Distance Travelled to Centre and Demographic and Health Characteristics (presented as mean ± SD or frequency (%) by category).

	Distance Travelled to Centre		
	< 2km (n=759)	**2-10 km** (n=1,117)	**11+ km** (n=301)
Sex	**n=715**	**n=1,067**	**n=274**
Male	185 (25.9%)	271 (25.4%)	71 (25.9%)
Female	530 (74.1%)	796 (74.6%)	203 (74.1%)
Age	**n=729**	**n=1,070**	**n=291**
51-65	107 (14.7%)	144 (13.5%)	57 (19.6%)
66-75	296 (40.6%)	468 (43.7%)	130 (44.7%)
76-85	267 (36.6%)	368 (34.4%)	83 (28.5%)
86 or older	59 (8.1%)	90 (8.4%)	21 (7.2%)
Living Arrangements***	**n=749**	**n=1,105**	**n=294**
Alone	330 (44.1%)	458 (41.4%)	94 (32%)
Spouse	366 (48.9%)	535 (48.4%)	159 (54.1%)
Other Friends/Family	53 (7.1%)	112 (10.1%)	41 (13.9%)
Highest Education**	**n=720**	**n=1,064**	**n=289**
Less than High School	144 (20%)	189 (17.8%)	33 (11.4%)
High School	298 (41.4%)	405 (38.1%)	138 (47.8%)
College or University	278 (38.6%)	470 (44.2%)	118 (40.8%)
Employment***	**n=740**	**n=1,084**	**n=290**
Retired	670 (90.5%)	997 (92%)	244 (84.1%)
Working	70 (9.5%)	87 (8%)	36 (15.9%)
Annual Income***	**n=601**	**n=882**	**n=230**
Under $25,000	180 (30%)	223 (25.3%)	42 (18.3%)
$25,000 - $69,999	359 (59.7%)	560 (63.5%)	140 (60.9%)
$70,000 and Over	62 (10.3%)	99 (11.2%)	48 (20.9%)
Location***	**n=743**	**n=1,101**	**n=297**
Urban/Suburban area	700 (94.2%)	990 (89.9%)	212 (71.4%)
Rural Area	43 (5.8%)	111 (10.1%)	85 (28.6%)
Dwelling Type***	**n=750**	**n=1,107**	**n=298**
House	448 (59.7%)	728 (65.8%)	209 (70.1%)
Apartment/Condo	274 (36.5%)	343 (31%)	67 (22.5%)
Other (e.g., mobile home)	28 (3.7%)	36 (3.3%)	22 (7.4%)
Self-Rated Health	**n=740**	**n=1,103**	**n=298**
Very Poor / Poor / Fair	197 (26.6%)	260 (23.6%)	83 (27.9%)
Good / Excellent	543 (73.4%)	842 (76.4%)	215 (72.1%)
# Chronic Conditions*	2.19 ± 1.66	2.17 ± 1.63	1.90 ± 1.54
Physical Activity Level	**n=738**	**n=1,099**	**n=299**
Very Low / Low	75 (10.2%)	102 (9.3%)	19 (6.4%)
Moderate	410 (55.6%)	596 (54.2%)	165 (55.2%)
High / Very High	253 (34.3%)	401 (36.5%)	115 (38.5%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Associations between Primary Mode of Transportation to the Centre and Demographic and Health Characteristics (presented as mean ± SD or frequency (%) by category).

	Primary Mode of Transportation			
	Drive Car (n=1,398)	**Transit** (n=181)	**Walk / Bike** (n=187)	**Other** (n=164)
Sex***	**n=1,328**	**n=170**	**n=177**	**n=151**
Male	398 (30%)	27 (15.9%)	40 (22.6%)	21 (13.9%)
Female	930 (70%)	143 (84.1%)	137 (77.4%)	130 (86.1%)
Age***	**n=1,345**	**n=175**	**n=183**	**n=154**
51-65	198 (14.7%)	24 (13.7%)	35 (19.1%)	17 (11%)
66-75	602 (44.8%)	69 (39.4%)	71 (38.8%)	36 (23.4%)
76-85	466 (34.6%)	69 (39.4%)	53 (29%)	57 (37%)
86 or older	79 (5.9%)	13 (7.4%)	24 (13.1%)	44 (28.6%)
Living Arrangements***	**n=1,381**	**n=178**	**n=187**	**n=160**
Alone	498 (36.1%)	127 (71.3%)	99 (53.2%)	72 (45%)
Spouse	769 (55.7%)	26 (14.6%)	73 (39.2%)	59 (36.9%)
Other Friends/Family	114 (8.3%)	25 (14%)	14 (7.5%)	29 (18.1%)
Highest Education***	**n=1,341**	**n=172**	**n=180**	**n=149**
Less than High School	232 (17.3%)	28 (16.3%)	31 (17.2%)	45 (30.2%)
High School	533 (38.1%)	80 (46.5%)	70 (37.4%)	71 (47.7%)
College or University	576 (41.2%)	64 (37.2%)	39 (42.2%)	33 (22.1%)
Employment*	**n=1,368**	**n=168**	**n=183**	**n=154**
Retired	1,221 (89.3%)	155 (92.3%)	167 (91.3%)	149 (96.8%)
Working	147 (10.8%)	13 (7.7%)	16 (8.7%)	5 (3.2%)
Annual Income***	**n=1,097**	**n=138**	**n=144**	**n=123**
Under $25,000	220 (20.1%)	59 (42.8%)	49 (34%)	56 (45.5%)
$25,000 - $69,999	730 (66.5%)	72 (52.2%)	73 (50.7%)	59 (48%)
$70,000 and Over	147 (13.4%)	7 (5.1%)	22 (15.3%)	8 (6.5%)
Location***	**n=1,378**	**n=179**	**n=183**	**n=161**
Urban/Suburban Area	1,171 (85%)	175 (97.8%)	175 (95.6%)	153 (95%)
Rural Area	207 (15%)	4 (2.2%)	8 (4.4%)	8 (5%)
Dwelling Type***	**n=1,384**	**n=180**	**n=187**	**n=161**
House	997 (72%)	60 (33.3%)	87 (46.5%)	84 (52.2%)
Apartment/Condo	357 (25.8%)	111 (61.7%)	89 (47.6%)	56 (34.8%)
Other (e.g., mobile home)	30 (2.2%)	9 (5%)	11 (5.9%)	21 (13%)
Self-Rated Health***	**n=1,376**	**n=175**	**n=187**	**n=155**
Very Poor / Poor / Fair	313 (22.8%)	50 (28.4%)	49 (26.2%)	82 (52.9%)
Good / Excellent	1,062 (77.2%)	126 (71.6%)	138 (73.8%)	73 (47.1%)
# Chronic Conditions***	2.07 ± 1.60	2.27 ± 1.49	1.93 ± 1.55	2.74 ± 1.84
Physical Activity Level***	**n=1,370**	**n=178**	**n=187**	**n=156**
Very Low / Low	120 (8.8%)	15 (8.4%)	8 (4.3%)	36 (23.1%)
Moderate	742 (54.2%)	106 (59.6%)	108 (57.8%)	91 (58.3%)
High / Very High	508 (37.1%)	57 (32%)	71 (38%)	29 (18.6%)

associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5. Spearman Rank Correlations between Centre Participation Variables

	Member-ship Length	**Attendance Frequency**	**Hours / Visit**	**Hours / Week**	**Rec. Program**	**Vol. Status**
Member-ship Length	$r_s = 1.00$ N = 2,235					
Attendance Frequency	$r_s = .105^{***}$ N = 2,235	$r_s = 1.00$ N = 2,239				
Hours/Visit	$r_s = .104^{***}$ N = 2,235	$r_s = .218^{***}$ N = 2,225	$r_s = 1.00$ N = 2,225			
Hours/Week	$r_s = .129^{***}$ N = 2,221	$r_s = .845^{***}$ N = 2,225	$r_s = .675^{***}$ N = 2,225	$r_s = 1.00$ N = 2,225		
Recreation Programs	$r_s = .088^{***}$ N = 2,235	$r_s = .244^{***}$ N = 2,239	$r_s = .102^{***}$ N = 2,225	$r_s = .234^{***}$ N = 2,225	$r_s = 1.00$ N = 2,239	
Volunteer Status	$r_s = .158^{***}$ N = 2,063	$r_s = .145^{***}$ N = 2,067	$r_s = .288^{***}$ N = 2,055	$r_s = .254^{***}$ N = 2,055	$r_s = .173^{***}$ N = 2,067	$r_s = 1.00$ N = 2,067

$^{***}p < .001$

Table 6. Associations between Interest in Joining an OAC and Demographic and Health Characteristics among Non-Users (presented as mean ± SD or frequency (%) by category).

	Interested in Attending OAC (n=359)	**Not Interested in Attending OAC** (n=178)
Gender	**n=343**	**n=172**
Men	114 (63.3%)	66 (36.7%)
Women	229 (68.4%)	106 (31.6%)
Age**	**n=349**	**n=171**
51-65	142 (75.1%)	47 (24.9%)
66-75	131 (64.9%)	71 (35.1%)
76-85	66 (62.3%)	40 (37.7%)
86 or older	10 (43.5%)	13 (56.5%)
Living Arrangements	**n=355**	**n=174**
Alone	114 (66.7%)	57 (33.3%)
Spouse	211 (67.6%)	101 (32.4%)
Other Friends/Family	30 (65.2%)	16 (34.8%)
Highest Education	**n=351**	**n=172**
Less than High School	63 (63%)	37 (37%)
High School	117 (71.8%)	46 (28.2%)
College or University	171 (65.8%)	89 (34.2%)
Employment	**n=351**	**n=172**
Retired	234 (65.2%)	125 (34.8%)
Working	117 (71.3%)	47 (28.7%)
Annual Income	**n=314**	**n=151**
Under $25,000	41 (54.2%)	22 (45.8%)
$25,000 - $69,999	180 (44.2%)	87 (55.8%)
$70,000 and Over	63 (33.3%)	42 (66.7%)
Location	**n=356**	**n=172**
Urban/Suburban Area	322 (66.8%)	153 (33.2%)
Rural Area	34 (64.2%)	19 (35.8%)
Dwelling Type	**n=356**	**n=174**
House	253 (68.2%)	118 (31.8%)
Apartment/Condo	92 (63.4%)	53 (36.6%)
Other (e.g., mobile home)	11 (78.6%)	3 (21.4%)
Self-Rated Health	**n=355**	**n=177**
Very Poor / Poor	114 (70.4%)	48 (29.6%)
Good/ Excellent	241 (65.1%)	129 (34.9%)
# Chronic Conditions**	2.26 ± 1.76	1.80 ± 1.53
Physical Activity Level	**n=353**	**n=177**
Very Low / Low	66 (64.1%)	37 (35.9%)
Moderate	202 (70.1%)	86 (29.9%)
High	85 (61.2%)	54 (38.8%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7. Associations between Interest in Joining an OAC and Community Participation among Non-Users (presented as frequency (%) by category).

	Interested in Attending OAC (n=359)	**Not Interested in Attend OAC** (n=178)
Community Facilities	**n=359**	**n=178**
Do not attend community facilities	100 (61.3%)	63 (38.7%)
Attend at least one community facility	259 (69.3%)	115 (30.7%)
Types of Facilities Attended	**n=359**	**n=178**
Recreation Facility	56 (73.7%)	20 (26.3%)
Fitness Centre*	52 (77.6%)	15 (22.4%)
Church	100 (69.9%)	43 (30.1%)
Private Clubs	35 (63.6%)	20 (36.4%)
Program Interest	**n=359**	**n=178**
Physical activity***	226 (77.7%)	65 (22.3%)
Arts*	145 (72.1%)	56 (27.9%)
Education**	129 (75.4%)	42 (24.6%)
Computers and Technology***	157 (78.9%)	42 (21.1%)
Health and Wellness***	192 (80%)	48 (20%)
Special Events***	180 (79.3%)	47 (20.7%)
Trips and Travel***	221 (74.4%)	76 (25.6%)
Current Volunteer	**n=330**	**n=157**
Do not volunteer	161 (64.7%)	88 (35.3%)
Volunteer	169 (67.8%)	69 (32.2%)

Significant associations: * $p < .05$; ** $p < .01$; *** $p < .001$

Appendix K. Additional Data for MC-GEP

Table 1. Centre Closures during Travel Diary Periods

Centre	Closure	Days Closed	Participants Impacted[1]
D	Adverse Weather	2 days	6 out of 13
G	Statutory Holiday	1 day	20 out of 20
H	Statutory Holiday	2 days	5 out of 14
I	Statutory Holiday	2 days	4 out of 23
J	Statutory Holiday	1 day	27 out of 27
K	Statutory Holiday	1 day	31 out of 31
L	Adverse Weather	0 days[2]	23 out of 48

[1] reflects the number of participants completing travel diaries during the closure compared to the total number of diaries completed for that centre.
[2] severe two-day ice storm, but centre remained open.

Table 2. Centre Characteristics

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre A (1974) Municipal EPC Municipal Population: 40,000	**Centre:** Mon – Fri 9:00 – 4:00 Extended Hours Wed (6:00 – 9:00) 38 hours/week **Café:** Mon-Thurs: 8:45 – 1:30	**Age:** 55+ **Members:** 1200 **Non-Members:** 200 **Attendance:** 200/day	**Staff:** - 3 FT - 3 PT - 20 Instructors **Volunteer:** - 150 - 8,000 hours **Board:** - 12 members - 4 sub-committees	- 2 craft studios - 2 fitness studios - 2 Activity rooms - Woodshop - Learning centre - Health room - Board room - Grand hall - Kitchen	**Member Fee:** - $31.62 (residents) - $45.42 (non-residents) **Program Fees:** - Drop in: $0.50-$5.00 - Registered: $5-$75 **Budget:** - Unknown	120 free parking spots No public transit Taxi agreement for $2.50 fare from town to centre	English programs only Membership valid for 5 OACs in municipality Municipality takes ½ of membership, daily entry, and taxi fees Do not share space with others
Centre B (2013) Non-Profit Not EPC Municipal Population: 8,000	**Centre:** Mon – Fri: 10:00 – 3:00 Evenings for special events only 25 hours/week	**Age:** 50+ **Members:** 300 **Non-Members:** 50 **Attendance:** 30/day	**Staff:** - 1 FT - 0 PT - 0 Instructors **Volunteers:** - 75 - 3,000 hours **Board:** - 10 members	- 1200 sq. foot facility - Kitchen - Dance floor	**Member Fee:** - $20 **Program Fees:** - Access to all programs provided - Meals are extra ($4-$8) **Budget:** - $80,000	12 free parking spots Free street parking No public transit	English programs only Do not share space with others Rely heavily on volunteers to run programs

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre C (1990) Non-Profit EPC Municipal Population: 2.8 million	**Centre:** Mon – Fri: 8:30 – 4:30 40 hours/week	**Age:** 55+ **Members:** 600 **Non-Members:** 50 **Attendance**: 75/day	**Staff:** - 3 FT - 1 PT - 5 Instructors **Volunteers:** - 30 - 1,000 hours **Board:** - 6 members	- Large main room - Computer lab - 4 activity rooms	**Member Fee:** - $0 (in name only) **Program Fees:** - Drop in: None - Registered: $1 - $48 **Budget:** - Unknown	Limited parking Public transit frequent Centre Transit for $5/ride (not used)	English program only Share space with other groups but does not impact programming Part of a CSS with 3 other senior centres
Centre D (2000) Non-Profit Not EPC Municipal Population: 12,000	**Centre:** Mon: 9:00 – 11:00 Wed: 9:00 – 11:00, 12:30 – 3:00 Thurs: 10:00 – 12:00 Fri: 9:30 – 1:30 (off site) 12.5 hours/week	**Age:** 50+ **Members:** 200 **Non-Members:** 0 **Attendance**: 10/day	**Staff:** - 0 FT - 0 PT - 0 Instructors **Volunteers:** - 25 - 3,000 hours **Board:** - 5 members	- 2 room school house on 5 acres - Kitchen - Walking trails behind building	**Member Fee:** - $10 **Program Fees:** - Access to all programs provided **Budget:** - $13,000	Free parking No public transit Other members offer rides when needed Centre too far away to walk or bike	English program only Programs led by volunteers Do not share space Program offerings limited by space and restrictions (no alcohol, heating expensive) Centre outside of town (rural)

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre E (1975) Municipal EPC Municipal Population: 90,000	**Centre:** Mon – Fri: 9:00 – 9:00 pm Sat (Billiards only): 9:00 – 12:00 63 hours/week	**Age:** 55+ **Members:** 1000 **Non-Members:** 0 **Attendance**: 150/day	**Staff:** - 3 FT - 2 PT - 0 Instructors **Volunteers:** - 300 - 12,000 hours **Board:** - 10 members	- Billiards lounge - Office - Computer room / board room - Library - Main hall for dances and shuffle board	**Member Fee:** - $20 **Program Fees:** - Drop in: none - Registered: $10 - $85 **Budget:** - $180,000	240 free parking spaces Public transit available, but infrequent	English programs only Do not share space, but compete for other space in the community centre in which they are located Drop-in programs run by volunteers, but registered programs run by municipality
Centre F (2010) Non-Profit EPC Municipal Population: 2.8 million	**Centre:** Mon-Wed, Fri: 10:00 – 4:00 Thurs: 10:00– 5:00 Sat: 10 – 1:00 34 hours/week	**Age:** 55+ **Members:** 400 **Non-Members:** 52 **Attendance**: 70/day	**Staff:** - 2 FT - 1 PT - 4 Instructors **Volunteers:** - 43 - 2,250 hours **Board:** - None; have monthly membership meetings	- 5 program spaces - Kitchen - Computer lab - Library section - Specialized art equipment (easels, sewing machines)	**Member Fee:** - $40 **Program Fees:** - Access to all programs provided - Meals are extra ($3.50) **Budget:** - $80,000	No centre parking & limited street parking Centre transit ($6/trip) Public transit frequent	English and Spanish programs Can attend exercise 2x per week with no membership fee Part of a CSS Do not share space with others

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre G (1987) Non-Profit EPC Municipal Population: 380,000	**Centre:** Mon – Fri: 7:00 – 3:00 40 hours/week **Café:** Mon – Fri: 8:00 – 2:00	**Age:** 55+ **Members:** 1500 **Non-Members:** 100 **Attendance**: 250/day	**Staff:** - 3 FT - 1 PT - 4 Instructors **Volunteers:** - 200 - 20,000 hours **Board:** - 15 members	- 2 pools - Fitness room (with equipment) - Craft room - Music room - Board room - Gym - Woodshop - Lounge - Kitchen	**Member Fee:** - $70-$200 (income test) **Activity Pass:** - $35/year, one program per week **Program Fees:** - Access to all programs provided - $0.25 - $20 fees for some programs **Budget:** - $400,000	200 parking spots - $3 per month - $30 per year Centre transit ($3/ride) Public transit available	English programs only Share space with children's centre, which impacts schedule – hours remain same but reduced program space in summer Centre transit has 3 pick-up and drop-off times only
Centre H (1987) Non-Profit EPC Municipal Population: 950,000	**Centre:** Mon – Fri: 8:30 – 3:30 35 hours/week **Café:** Mon – Fri 8:30 – 3:30	**Age:** 50+ **Members:** 550 **Non-Members:** 50 **Attendance**: 65/day	**Staff:** - 1 FT - 2 PT - 11 Instructors **Volunteers:** - 120 - 9,000 hours **Board:** - 11 members	- Main Hall - Reception - Lounge - Library - Kitchen - Have exercise equipment but no art supplies	**Member Fee:** - $30 **Program Fees:** - Drop-in: $1 - Registered: $11 - $100 - Meals extra ($1-$8) **Budget:** - $230,600	Ample free parking Public transit available (not main route)	English programs only Do not compete for space, but building is small and has no green space

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre I (1978) Non-Profit EPC Municipal Population: 165,000	**Centre:** Mon – Thurs: 8:30 – 8:00pm Fri-Sat: 8:30 – 4:30 Sun: 10 – 4:30 68.5 hours/week **Café:** Open daily with monthly menu	**Age:** 50+ **Members:** 950 **Non-Members:** None **Attendance**: 300/day	**Staff:** - 2 FT - 3 PT - 20 Instructors **Volunteers:** - 130 - 16,000 hours **Board:** - 11 members	- Large multi-purpose room - Board room - Sound-proof room - Kitchen & dining area - Games room - Library - Hobby and craft room - Outdoor patio	**Member Fee:** - $45 **Program Fees:** - Drop-in: None - Registered: $2-$55 - Meals extra ($2-$8) **Budget:** - $475,000	City parking ($0.70/hr for 55+, free on evenings and weekends) Public transit available (frequent)	English programs only Do not share space Fully licensed facility (i.e., sell alcohol)
Centre J (2012) Non-Profit Not EPC Municipal Population: 2.8 million	**Centre:** Mon – Fri: 9:00 – 4:00 35 hours/week	**Age:** 55+ **Members:** 100 **Non-Members:** None **Attendance**: 20/day	**Staff:** - 1 FT - 1 PT - 0 Instructors **Volunteers:** - 21 - 1,000 hours **Board:** - None	- One large room - Kitchen & dining area - Library - Computer lab	**Member Fee:** - None **Program Fees:** - None **Budget:** - Unknown	6 free parking spots (rarely used) Public transit available (frequent)	English and Mandarin programs Part of a CSS but located in community housing; many participants live in the building Do not share space

	Hours	Membership	Staff	Facilities	Fees	Transit	Other
Centre K (1965) Non-Profit Municipal EPC Municipal Population: 50,000	**Centre:** Mon, Wed, Thurs: 8:30 – 5:00 Tues: 8:30 – 9:00pm Fri: 8:30 – 11:30 pm 53 hours/week	**Age:** 50+ **Members:** 1600 **Non-Members:** 100 **Attendance**: 260/day	**Staff:** - 3 FT - 2 PT - 12 Instructors **Volunteers:** - 165 - 18,000 hours **Board:** - 9 members - 8 sub-committees	- Woodshop - Library - Kitchen - Computer Lab - Billiards room - Gym - Bocce court - 4 meeting rooms - Outdoor terrace - 1 multi-purpose room	**Member Fee:** - $25 (residents) - $35 (non-residents) **Program Fees:** - $1 activity fee per day - Registered programs for $35-$120 **Budget:** - $250,000	Parking free but share lot Street parking available Public Transit available (used by 5%)	English programs only Do not share space Fully licensed facility (i.e., sell alcohol) Almost all members drive; 50% of daily participants cannot find centre parking
Centre L (1991) Municipal EPC Municipal Population: 111,000	**Centre:** Mon-Thurs: 8:30 – 9:30pm Fri: 8:30 – 10pm Sat: 9 – 4:00 Sun: 12 – 5:00 65 hours/week **Café:** Mon – Sat 8:30 – 3:30	**Age:** 50+ **Members:** 3,000 **Non-Members:** N/A **Attendance**: 500/day	**Staff:** - 8 FT - 5 PT - 20 Instructors **Volunteers:** - 250 - 23,000 hours **Board:** - 13 members	- Auditorium - Multi-purpose room - 4 meeting rooms - 2 craft rooms - outdoor patio - Kitchen & dining area	**Member Fee:** - None **Program Fees:** - Drop-on: $2 per activity - Registered: $10-$110 - Meals extra ($4-$7.50) **Budget:** - $500,000	100 free parking spots Use Church parking if lot full Public transit available	English programs only Have 2nd rural location open Mon-Fri with 2-5 activities per day Do not share space but give up space for rentals

Table 3. Comparison of Week 1 and Week 2 Out-of-Home Travel Patterns

	Week 1	Week 2
Travel		
Total Trips***	10.84 ± 4.66 (3 – 29)	9.93 ± 4.98 (1 – 34)
Trips Per Day***	1.55 ± 0.67 (0.43 – 4.14)	1.41 ± 0.71 (0.14 – 4.86)
Total Hours **	30.84 ± 12.35 (1.58 – 76.42)	28.90 ± 12.46 (3.50 – 70.58)
Hours Per Day**	4.41 ± 1.76 (0.23 – 10.92)	4.13 ± 1.78 (0.50 – 10.08)
Hours Per Trip	3.14 ± 1.42 (0.53 – 10.07)	3.24 ± 1.34 (0.82 – 9.78)
Days with No Trips***	0.80 ± 1.04 (0 – 4)	1.11 ± 1.33 (0 – 6)
Distance from Home		
Within 1km***	2.88 ± 4.75 (0 – 29)	2.35 ± 4.15 (0 – 21)
1-15 km*	6.41 ± 3.77 (0 – 17)	5.97 ± 4.02 (0 – 27)
16+ km	1.54 ± 1.93 (0 – 10)	1.61 ± 1.94 (0 – 9)
Mode of Transit°		
Drive Oneself**	5.80 ± 4.54 (0 – 25)	5.43 ± 4.64 (0 – 31)
Rides from Others	1.59 ± 2.37 (0 – 14)	1.57 ± 2.16 (0 – 11)
Walk or Bike***	2.80 ± 4.90 (0 – 29)	2.30 ± 4.41 (0 – 23)
Public Transit	0.29 ± 1.15 (0 – 13)	0.33 ± 1.23 (0 – 14)
Taxi	0.01 ± 0.14 (0 – 2)	0.03 ± 0.22 (0 – 3)
Other Transit	0.21 ± 0.92 (0 – 6)	0.17 ± 0.71 (0 – 6)
Split Transit^	0.13 ± 0.44 (0 – 3)	0.10 ± 0.37 (0 – 2)

Note: Values are mean ± standard deviation.
Significant differences by week: * $p < .05$; ** $p < .01$; *** $p < .001$; + trend $p < .08$.
° Modes of transportation used for the round trip.
^ Participants used one mode of transit to their destination and used a different mode of transit on the way home (e.g., walk to grocery store and take public transit home).

Table 4. Trip Purpose

	% of Sample	Average Trips Per Week	% of Individual Trips
Centre	95.40	2.45 ± 1.44 (0 – 8.50)	27.29 ± 18.46 (0 – 92.86)
Recreation Facility	49.81	1.16 ± 2.28 (0 – 17)	9.55 ± 14.79 (0 – 83.33)
Legion	9.96	0.09 ± 0.33 (0 – 2.50)	0.95 ± 3.63 (0 – 29.41)
Private Club	2.68	0.04 ± 0.31 (0 – 4.50)	0.29 ± 2.13 (0 – 27.27)
Educational Event	8.43	0.08 ± 0.35 (0 – 4)	0.67 ± 2.97 (0 – 27.59)
Clubs/Group	20.69	0.23 ± 0.59 (0 – 4)	2.35 ± 6.42 (0 – 47.06)
Theatre/Art/Movies	24.90	0.21 ± 0.42 (0 – 2.50)	2.19 ± 4.63 (0 – 23.53)
Sporting Event/Casino	8.81	0.07 ± 0.28 (0 – 3)	0.55 ± 2.08 (0 – 15.79)
Shopping with Friends/Family	25.67	0.18 ± 0.36 (0 – 2)	2.15 ± 4.74 (0 – 33.33)
Social Gatherings	79.69	1.13 ± 1.14 (0 – 8.50)	11.64 ± 11.13 (0 – 70.83)
Restaurants	70.50	1.11 ± 1.26 (0 – 6)	11.62 ± 13.75 (0 – 90.91)
Household Errands	98.85	3.26 ± 1.72 (0 – 10)	34.74 ± 16.40 (0 – 87.50)
Personal Errands	33.72	0.24 ± 0.39 (0 – 2)	2.66 ± 5.29 (0 – 50)
Medical Appointments	58.62	0.52 ± 0.64 (0 – 5.50)	5.62 ± 7.39 (0 – 57.89)
Church	33.72	0.37 ± 0.70 (0 – 4.50)	3.69 ± 7.05 (0 – 50)
Paid Work	7.28	0.14 ± 0.74 (0 – 8.50)	1.42 ± 6.82 (0 – 56.67)
Volunteer	14.56	0.18 ± 0.62 (0 – 5.50)	1.74 ± 5.39 (0 – 43.48)
Helping Others	36.40	0.61 ± 1.13 (0 – 6)	5.74 ± 10.60 (0 – 66.67)
Out-of-Town Trips	41.76	0.42 ± 0.67 (0 – 3.50)	4.51 ± 7.48 (0 – 50)
Over-Night Trips	14.94	0.09 ± 0.24 (0 – 1.50)	0.98 ± 2.51 (0 – 21.43)
Returning from Over-Night	13.03	0.08 ± 0.22 (0 – 1.50)	0.80 ± 2.30 (0 – 14.29)
Outdoor Activities[a]	41.76	1.21 ± 2.64 (0 – 18.50)	8.67 ± 15.04 (0 – 88.10)
Other Purpose[b]	25.67	0.30 ± 0.88 (0 – 7)	2.57 ± 6.45 (0 – 47.37)
Unknown	16.48	0.14 ± 0.42 (0 – 4.0)	1.21 ± 3.30 (0 – 27.59)

Note: Values are mean ± standard deviation (range).

[a] Includes walking the dog, walking in the park, going for a bike ride.

[b] Includes political events, jury duty, funeral, going for a bus/car ride.

Table 5. Associations between Trip Purposes and Travel Indicators

Trips Per Week	Rec[a]	Social Gather[b]	Errands	Help Others[c]	Medical	Out-of-Town[d]	Other[e]
# Trips	**.527*****	**.277*****	**.486*****	**.254*****	.049	.064	**.653*****
Duration	**.375*****	**.479*****	**.263*****	**.288*****	.113^{+}	**.306*****	**.214*****
No Trips	**-.427*****	**-.299*****	**-.448*****	**-.172****	**-.130***	-.089	**-.332*****
Trips/Day	**.527*****	**.277*****	**.486****	**.254*****	.049	.064	**.653*****
Hours/Day	**.375*****	**.479*****	**.263****	**.287*****	.113	**.306*****	**.214****
Hours/Trip	-.090	**.127***	**-.296*****	-.005	.000	**.148***	**-.346*****
Distance from Home							
< 1km	**.541*****	-.011	**.181****	-.084	-.058	-.118^{+}	**.427*****
1 - 15 km	.040	**.262*****	**.315*****	**.306*****	.037	.030	**.264*****
16+ km	-.034	**.200****	**.166****	**.228*****	**.186****	**.382*****	.107
Mode of Transit							
Driving	.026	**.365*****	**.409*****	**.456*****	**.130***	**.214****	**.230*****
Rides	-.045	**.126***	.075	.061	.097	.118^{+}	-.025
Walk	**.515*****	-.103	.082	**-.155***	-.119^{+}	**-.152***	**.458*****
Transit	.088	-.107	.021	**-.138***	-.023	**-.161****	.012
Taxi	.038	-.030	-.079	-.075	.017	-.065	-.037
Other	-.015	-.052	**-.139***	**-.123***	.028	-.053	-.041

Values are Pearson's *r*. Travel indicators were averaged to one week.
Significant correlations: * $p < .05$; ** $p < .01$; *** $p < .001$; $^{+}$ trend $p < .08$.

[a] Includes the centre, recreation facilities, legion, private club, educational levels, clubs/groups, theatre/art, and sporting events/casino

[b] Includes informal social gatherings, shopping with friends/family, and restaurants

[c] Includes formal volunteering and informal activities to help others (e.g., bring neighbour mail)

[d] Includes out-of-town trips, over-night trips, and returning home from over-night trips

[e] Includes church, outdoor activities, paid work, other trips and unknown trips

Associations between Travel Indicators and Participant Characteristics

Associations between travel indicators and participant characteristics (such as demographic and health characteristics), are presented below. Travel indicators were averaged to one week; trip purposes, distance travelled, and mode of transportation were also examined as a proportion of trips per week (as opposed to number of trips).

Age was negatively correlated with several travel characteristics, including total hours away from home (r = -.201, p = .001), trip duration (r = -.212, p = .001), hours per day (r = -.201, p = .001), errands (r = -.148, p = .017), and out-of-town travel (r = -.136, p = .029). Age was also negatively correlated with the proportion of trips taken that were more than 15km from home (r = -.133, p = .032).

Men and women did not differ on number of trips taken, hours away from home, days with no trips, or with respect to trip purposes. For women, a greater proportion of trips were within 1km of home (mean difference = 10.60%; $t(255)$ = -2.626, p = .009) while men reported a greater proportion of trips were between 1km and 15km of home (mean difference: 8.65%; $t(255)$ = 2.003, p = .045). Men also reported a higher proportion of driving trips in their diaries (mean difference: 17.55%; $t(255)$ = 3.229, p = .001), while women were more likely to get rides from friends or family (mean difference: 11.55%; $t(255)$ = -3.403, p = .001).

Living arrangements did not impact overall travel (trips or duration), but was significant for trips: within 1km of home ($t(257)$ = 2.000, p = .047), for social gatherings ($t(257)$ = 3.049, p = .003) and where rides from others ($t(257)$ = -3.620, $p < .001$) or public transit ($t(257)$ = 2.252, p = .025) were used. Compared to those who lived with others (a spouse or other; n=149), those who lived alone (n=110) recorded a greater proportion of trips close to home (mean difference: 6.60%), for social gatherings (mean difference: 6.43%) and by public transit (mean difference: 3.31%), but took fewer trips involving rides from others (mean difference: 10.04%).

Those still working (n=22) spent more time away from home overall (mean difference: 7.25 hours; $t(252)$ = 2.912, p = .004) and per trip (mean difference: 0.78 hours/trip; $t(252)$ = 2.764, p = .006). Post-secondary education did not impact total number of trips, trip duration, days with no trips; however, those who attended college/university took more long-distance trips (mean difference = 7.14%; $t(248)$ = -2.709, p = .007). Trips for recreation were less common among post-secondary graduates (mean difference = 5.23%; $t(248)$ = 2.053, p = .041), but trips for "other" purposes were more common (mean difference = 7.96%; $t(248)$ = -3.494, p = .001).

For income, those who received GIS (n=60) made more trips overall (mean difference" 1.55 trips/week; $t(235) = -2.251$, $p = .025$) but trips were shorter (mean difference: 0.36 hours; $p = .061$), closer to home (16.45%; $t(235) = -4.276$, $p < .001$), and more likely to be via walking (mean difference: 20.30%; $t(235) = 5.024$, $p < .001$). On the other hand, those who did not receive GIS took more trips between 1km and 15km from home (mean difference: 12.60%; $t(235) = 3.103$, $p = .002$) and were more likely to drive (mean difference: 13.38%; $t(235) = 2.503$, $p = .013$), or get rides from others (mean difference: 8.79%; $t(235) = 2.628$, $p = .009$). Several differences in trip purposes also emerged: those receiving GIS took more trips for recreation (mean difference: 6.32% $t(235) = -2.113$, $p = .036$) , but fewer trips for social activities (mean difference: 5.13%; $t(235) = 2.070$, $p = .040$), errands (mean difference: 9.17%; $t(235) = 3.821$, $p < .001$), and volunteer activities (mean difference: 3.02%; $p = .062$).

Generally, self-rated health did not impact travel patterns; however, trips to volunteer were less common among those with poor to fair health (mean difference: 3.92%; $t(257) = -2.004$, $p = .046$), but trips for medical appointments were more frequent (mean difference: 2.83%; $t(257) = 2.078$, $p = .043$). Compared to those who rated their health as good to excellent, those with poorer health also tended to travel more frequently within 1km of home (mean difference: 15.10%; $t(257) = 3.394$, $p < .001$) and less often 15km from home or further (mean difference: 7.76%; $t(257) = -2.167$, $p = .031$). They also reported fewer driving trips (mean difference: 15.05%; $t(257) = -2.436$ $p = .016$), but more by public transit (mean difference: 4.63; $t(257) = 2.311$, $p = .022$) or by walking (mean difference: 11.10; $t(257) = 2.330$, $p = .021$).

Number of chronic conditions was found to negatively correlate with total number of trips from home ($r = -.131$, $p = .035$), but was positively correlated with trips for social activities ($r = .181$, $p = .004$), and medical appointments ($r = .282$, $p < .001$). No other travel indicators were related to number of chronic conditions. All of the examined chronic conditions had significant associations with at least one travel indicator (data not shown).

Travel patterns were generally not impacted by falls status, although those who had fallen in the past year took fewer trips to volunteer or help others (mean difference: 4.06%; $t(254 = 2.468$, $p = .014$), but more trips for medical appointments (mean difference: 2.50%; $t(254) = -2.236$, $p = .021$). Use of a mobility device such as a cane or walker was associated with fewer trips out-of-home (mean difference: 2.17 trips; $t(257) = 2.918$, $p = .004$), and more days with no

trips (mean difference = 0.40 days; $t(257) = -2.335$, $p = .019$). There was also an increase in the proportion of trips for medical appointments (mean difference: 4.12; $t(257) = -3.440$, $p = .001$).

Although drivers and non-drivers did not differ on total trips and hours away from home, days with no trips, or trip duration, most other variables were significant. Non-drivers made more trips within 1km of home (mean difference = 27.99%; $t(257) = 7.509$, $p < .001$), while drivers made more trips between 1km to 15km (mean difference = 16.89%; $t(257) = -3.974$, $p < .001$) and more than 15km (mean difference = 11.11%; $t(257) = -43.452$ $p = .001$) from home. For non-drivers, a greater proportion of trips were by rides from friends/family (mean difference = 7.16%; $t(257) = 2.046$, $p = .042$), walking (39.78%; $t(257) = 11.103$, $p < .001$) or using public transit (mean difference = 13.29%; $t(257) = 8.258$, $p < .001$). The proportion of trips taken for recreation were greater for non-drivers (mean difference = 10.8%; $t(257) = 3.504$, $p = .001$); however, the reverse was true for social gatherings (mean difference = 5.64%; $t(257) = -2.137$, $p = .0340$, errands (mean difference = 7.47%; $t(257) = -2.963$, $p = .003$), out-of-town travel (mean difference = 3.54%; $t(257) = -3.037$, $p < .003$), volunteering (mean difference = 7.06%; $t(257) = -4.041$), $p < .001$).

Correlations between travel characteristics and indicators of well-being are shown in the table below, Overall, balance confidence and life-space mobility were correlated with total number of trips and hours away from home, as well as number of days with no trips, and the proportion of driving trips, all in the expected direction. Scores on the VPS were significantly associated with only a few travel indicators, as were overall loneliness scores.

Those with high loneliness were found to receive more rides from others (mean difference = 7.41% of trips; $t(250) = 2.195$, $p = .029$), and use public transit more frequently (mean difference = 5.30% of trips; $t(250) = -3.041$, $p = .003$), but had a fewer trips to volunteer or help others (mean difference = 3.99% of trips; $t(250) = 2.337$, $p = .020$).

Table 6. Correlations between Travel Characteristics and Indicators of Wellbeing

Trips per Week	**ABC**	**VPS**	**Lonely**	**LS-C**
Total Trips	**.148***	-.117	.036	**.278*****
Total Hours	**.175****	-.037	.082	**.474*****
Days with No Trips	**-.154***	.043	-.012	**-.290*****
Trips Per Day	**.148***	-.117	.036	**.278*****
Hours Per Day	**.175****	-.037	.082	**.474*****
Hours Per Trip	-.008	.037	.041	.088
Distance from Home				
% trips within 1km	-.071	.069	-.047	-.086
% trips 1km to 15km	.002	-.017	-.018	-.030
% trips more than 15km	.090	-.064	-.082	**.149***
Mode of Transit				
% driving trip	**.191****	-.037	.067	**.289*****
% riding trips	-.020	-.105	-.011	-.018
% walking trips	-.020	-.023	.013	**-.195****
% public transit trips	-.101	**.237*****	**-.126***	-.114
% taxi trips	**-.144***	-.085	**.152***	-.088
% other transit	**-.386*****	-.040	.065	**-.249*****
% split transit$^{\wedge}$	-.067	-.081	.107	-.077
Trip Purpose				
% trips for recreation	.046	.045	.063	-.087
% trips social gathering	-.083	.081	-.029	.109
% trips for errands	.068	.059	-.034	-.004
% trips to help others	**.178****	**-.130***	.024	**.162***
% trips medical apt.	**-.272*****	**.130***	**-.177****	-.079
% trips out-of-town	.106	.038	.051	**.263*****
% trips other reasons	.039	-.032	.022	.076

Values are Pearson's *r*. Significant correlations: * $p < .05$; ** $p < .01$; *** $p < .001$.

$^{\wedge}$ Participants used one mode of transit to their destination and used a different mode of transit on the way home (e.g., walk to grocery store and take public transit home).