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# Using Travel Diaries to Examine the Extent to Which Older Adult Centres Are a Focal Point for Recreation and Social Activities

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## Article

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**Résumé**

Cette étude visait à mieux cerner dans quelle mesure les centres pour personnes âgées sont un point central d'activités sociales et récréatives pour leurs membres. Des journaux de déplacements remplis par 261 membres de 12 centres pour personnes âgées situés partout en Ontario ont permis de recueillir des données complètes « en temps réel » (sur 24 heures) au cours de deux semaines consécutives concernant le temps passé hors de chez eux, les destinations de leurs déplacements et les moyens de transport utilisés. Les données ont montré que près d'un tiers de leurs trajets comprenaient un arrêt à leur centre pour personnes âgées. Les trois-quarts des participants se sont aussi rendus à d'autres lieux communautaires au cours de la période de l'étude, notamment pour avoir accès à des aménagements non disponibles dans leur centre (p. ex., une piscine). Quoiqu'il en soit, leur centre pour personnes âgées était encore le point central de leurs déplacements hors de chez eux, en particulier pour les personnes plus vulnérables, y compris celles qui ne conduisaient pas, qui avaient moins d'années d'études et qui se sentaient plus seules. Les journaux ont aussi souligné l'importance du temps passé à socialiser avec les membres et le personnel du centre, outre la participation à des programmes organisés.

**Abstract**

This study aimed to better understand the extent to which older adult centres are a focal point for recreation and social activities for their members. Travel diaries completed by 261 members of 12 older adult centres across Ontario provided comprehensive and real-time (24-hour) data over two consecutive weeks concerning time away from home, trip purposes, and modes of travel. The data showed that nearly one-third of their trips included a stop at their older adult centre. Three-quarters also went to other community venues over the study period, possibly to access amenities (e.g., pools) not available at their centre. Notwithstanding, their local older adult centre was still a focal point in out-of-home travel, particularly for potentially more vulnerable older adults, including those who were non-drivers, had less education, and felt lonelier. The diaries also substantiated the importance of time spent socializing with peers and staff at the centre, apart from formal program participation.

## Introduction

Social participation outside the home is considered essential for successful aging and has been shown to reduce social isolation and loneliness and promote health and well-being (Levasseur, Richard, Gauvin, & Raymond, 2010). Social participation may occur informally (such as visits or outings with friends or family) or more formally through engagement in structured group activities or volunteerism (Levasseur et al., 2010; Pristavec, 2016). The focus on healthy aging is becoming increasingly important as the population continues to age and an estimated one in four Canadians will be over 65 by 2030 (Statistics Canada, 2019).

Older adult centres play a vital role in providing programs and services, as well as opportunities for socialization, tailored to the needs of older adults. Delivered in centralized locations, these centres have been described as community "focal points" or "hubs" for recreation and social activities for older adults (Kadowaki & Mahmood, 2018). Most of the research on older adult centres have been conducted in the U.S., with only seven Canadian studies published since 2000 identified in a recent scoping review (Kadowaki & Mahmood, 2018). This context is important as, unlike the U.S., there is no federal funding for older adult centres in Canada;

provincial legislation and support vary by province (Dubé, Myers, Sheppard, & Friedman, 2016; Kadowaki & Mahmood, 2018).

Across the U.S. and Canada, it has been estimated that 10 to 30 per cent of older adults participated at their local centre (Calsyn & Winter, 2000; Krout, Cutler, & Coward, 1990; Lai, 2006; Schneider, Ralph, Olson, Flatley, & Thorpe, 2014; Strain, 2001); however, participation was broadly defined as any visit in the past year, without considering whether people attended regularly or infrequently (e.g., for special events). Studies comparing users and non-users have shown that older adult centre participants tend to be older, female, live alone, and have lower incomes; however, they also tend to be more socially engaged and have fewer functional impairments (e.g., Calsyn & Winter, 2000; Krout et al., 1990; Lai, 2006; Schneider et al., 2014; Strain, 2001; Turner, 2004).

Many older adults appear to form long-term relationships with their centre (e.g., Turner, 2004). They attend around three times per week (Turner, 2004; Walker, Bisbee, Porter, & Flanders, 2004), for about four hours per visit (Aday, Kehoe, & Farney, 2006; Rhynes, Hayslip, Caballero, & Ingman, 2013). Proximity to the centre does not appear to influence awareness or utilization of centre services (Dondzila et al., 2014).

Participation in older adult centres has been associated with multiple benefits (Kadowaki & Mahmood, 2018). For example, the literature has documented (a) nutritional benefits of congregate meal programs (e.g., Gitelson, Ho, Fitzpatrick, Case, & McCabe, 2008; Swan, Severance, & Turner, 2016); (b) physical benefits, including enhanced activity levels and improved physical functioning, as a result of various exercise programs (e.g., Fitzpatrick et al., 2008; Swan, Turner, Shashidhara, & Sanders, 2013; Taylor-Harris & Zhan, 2011); (c) health benefits, including improved knowledge and behaviour changes (Song et al., 2017); and (d) social benefits, including new friendships, enhanced social support, and reduced feelings of loneliness, often attributed to being with others (peers and staff) as opposed to participating in specific programs (e.g., Aday et al., 2006; Fitzpatrick, McCabe, Gitelson, & Andereck, 2006; Fulbright, 2010; Hickerson et al., 2008; McGovern, Brown, & Gasparro, 2016; Turner, 2004). In fact, Pardasani (2010) and Strain (2001) found that a desire for socialization was the primary motive for participating at older adult centres.

What has not been addressed in the literature is how members use older adult centres to meet their recreational and social needs relative to using programs and amenities offered by other organizations or facilities in their communities. There is some evidence suggesting that older adult centres may be preferred by older people as they cater specifically to their age group (Hickerson et al., 2008), thus minimizing fears of social rejection and ageism (Goll, Charlesworth, Scior, & Stott, 2015). However, some older adult centre directors have described increased competition from other organizations, like YMCAs, in attracting younger and more active older adults (Bobitt & Schwingel, 2017). The overarching aim of this descriptive study was to examine the extent to which older adult centres in Ontario, Canada, constitute a focal point or primary place for recreational and social activities by concurrently examining the extent to which members accessed other community venues for these purposes. Specific research objectives were to (a) document the travel patterns (including number of trips, distance from home, modes, purposes) of members; (b) examine the extent of and venues for out-of-home recreational and social activities; and (c) explore factors associated with centre participation.

## Methods

### *Study Context*

This study was designed and facilitated in partnership with the Older Adults Centres' Association of Ontario (OACAO), a non-profit organization that provides advocacy, support, and resources for community-based older adult centres in Ontario. At the time of the study, over 120 centres were members of the OACAO, comprising a mix of non-profits (about 64%) and municipal agencies (36%); 90 per cent charged membership or user fees (Sheppard, Myers, & Dube, 2016).

Older adult centres can apply for funding from the Government of Ontario through the Seniors Active Living Centres (SALC) Act, conditional on providing activities and services that promote social engagement, activity, and healthy living for adults who are primarily older. Additionally, centres must demonstrate that their programming fills a need in their community, provides maximum benefits to older adults, supports age-friendly community initiatives, and incorporates a social inclusion strategy to reduce isolation and loneliness (Ministry of Seniors Affairs, 2017). At the time of the study, there were close to 300 SALC-funded programs across Ontario, 177 of which were represented by the OACAO.

### *Participants*

A total of 12 OACAO member centres participated in this project, representing a mix of municipal and non-profit agencies from communities of varying sizes. Characteristics of participating centres can be found in the Appendix, including when the centre opened; hours of operation; membership size, fees, facilities; and available parking and public transit.

Each centre designated a project facilitator (usually a program coordinator or manager) to lead recruitment and data collection. Centres were asked to recruit a convenience sample of at least 20 participants, using strategies they felt would be effective at their location (such as flyers, announcements, and word-of-mouth). They were instructed to recruit members who had attended the centre for at least six months (to allow time to get acquainted with the staff, volunteers, and programming) and to aim for a mix of men and women, older and younger representations of older adults, as well as those who attended on different days of the week and took part in different programs and activities to increase sample diversity. In total, centres recruited 295 participants; sample size by centre is shown in the Appendix.

### *Procedure*

Ethics approval was provided by the Office of Research Ethics at the University of Waterloo. Participants were told that they would be asked to meet in small groups with a staff member or volunteer from their centre on two separate occasions for about 30 to 45 minutes to complete short questionnaires and daily travel diaries (checklist format). They were also informed that they could withdraw at any time, skip any questions they preferred not to answer, and that all information provided would be kept confidential and analysed by researchers associated with the OACAO.

Facilitators collected data over two, in-person sessions, scheduled approximately two weeks apart, with a 14-day monitoring period in between for participants to complete daily travel diaries. Sessions took place in a quiet room at the centre and were held in small groups. Data collection began in November 2016 and ended

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in May 2017; each centre took approximately one month to schedule small group sessions and collect its data.

In the first session, participants completed the study consent form, followed by a background questionnaire to gather information on socio-demographics, health and mobility, community engagement, how far they lived from the centre, and whether they considered the centre their primary place for recreation, leisure, and social activities. They also completed measures of loneliness and general well-being. At the end of the session, they were introduced to the travel diaries, which asked them to document each trip they made outside of their home (excluding yard work or taking out the garbage) for 14 consecutive days. Participants were given instructions, templates, as well as examples of completed diaries for illustration. At the second session, participants submitted and verified their diaries. They then completed a questionnaire on their usual participation patterns at the centre, as well as measures of life-space mobility and balance confidence.

Following data collection, telephone interviews were conducted with each of the project facilitators to gather information on their centre, as shown in the Appendix. They were also asked about successes and challenges experienced with the project and feedback they received from participants. Following analysis, each centre was given its own anonymized database and codebook, as well as an infographic profile of the participating members.

### Measures

As one centre served Mandarin- as well as English-speakers, a bilingual staff member translated all participant materials into Mandarin using a forward and back translation procedure. The final translations were checked by a second bilingual staff person. They also translated written responses (open-ended questions and comments on travel diaries) for the researchers.

### Socio-Demographics

Primary variables included age, sex, living arrangements (alone vs. with others), education (high school or less vs. post-secondary), and driving status (current vs. non-driver). As an indicator of income, participants reported if they received the Guaranteed Income Supplement (GIS), available to low-income adults age 65 and over who qualify in Canada.

### Health, Mobility, and Well-Being

*Self-rated health* was assessed through the question, "Overall, would you say your health is: excellent, very good, good, fair, or poor?" Responses were reverse scored on a 5-point scale (1 = poor; 5 = excellent) so that higher scores reflected better perceived health. *Chronic health conditions* were assessed by having participants check whether they had been diagnosed with various common conditions from a list that was provided.

To assess *mobility problems,* participants were asked whether they ever used a walker or cane (yes/no) and had fallen (i.e., ended up on the ground or floor) over the past year (yes/no). *Balance confidence* was measured using the 16-item Activities-specific Balance Confidence (ABC) Scale, which has demonstrated good test-retest reliability, convergent and discriminant validity (Myers, Fletcher, Myers, & Sherk, 1998; Powell & Myers, 1995). Scores range from 0 to 100 per cent, and higher scores indicate greater confidence in maintaining one's balance and remaining steady when performing progressively challenging activities.

*Life space mobility* was measured using the Life Space Assessment (LSA; Baker, Bodner, & Allman, 2003), which examines self-reported movement throughout five levels of life-space spanning from the home to places beyond town. For each level, respondents reported how often they achieved it and whether they relied on a mobility device or another person. The LSA has demonstrated good short-term stability and convergent validity with measures of physical function and health (Baker et al., 2003). For the current study, respondents were asked about their movement over the past two weeks (as opposed to four weeks) to correspond with the time frame of the travel diaries. The life-space composite scores can range from 0–120, with higher scores representing greater life-space mobility. Scores less than 60 indicate a restricted life-space (Baker et al., 2003).

*Loneliness* was measured using the UCLA three-item loneliness scale (Hughes, Waite, Hawkley, & Cacioppo, 2004). Respondents were asked to rate how often (i.e., hardly ever, some of the time, and often) they feel a lack of companionship, left out, or isolated from others. Scores can range from 3 to 9; scores > 3 indicate some loneliness, whereas scores > 5 indicate a high degree of loneliness (Hughes et al., 2004; Steptoe, Shankar, Demakakos, & Wardle, 2013). The scale has shown good internal consistency and associations with depression, marital status, and other variables in the expected direction (Hughes et al., 2004). *Psychophysical well-being* was assessed using the 10-item Vitality Plus Scale (VPS), which was developed to measure the accumulated health-related benefits of exercise and active lifestyles in older adults and has shown excellent test-retest reliability and strong associations with measures of physical functioning such as the Timed-Up-and-Go, walking speed, and the SF-36 (Myers et al., 1999). Items include sleep quality, appetite, energy level, aches and pains, restlessness, and generally feeling good. Each item is rated on a 5-point analog scale (e.g., low energy to full of pep and energy). Scores can range from 10 to 50, with higher scores indicating greater vitality.

### Community Engagement

Participants were asked whether they attended other facilities for recreation, leisure, and social activities, including community centres and public facilities (e.g., swimming pool, YMCA), private clubs (e.g., golf club), legions, another older adult centre, and church. Participants were also asked whether they volunteered with other community organizations.

### Centre Relationship

*Length of membership* was assessed by asking respondents how long they had been coming to the centre; responses were coded to compare newer (five or fewer years) and more long-standing members (at least six years). *Distance from home* was assessed by asking participants how far they lived from the centre (< 2 km; 2 to 10 km; more than 10 km; not sure); responses were re-coded to compare those who lived close to the centre (< 2 km) with those farther away (2 km or greater). *Primary place for recreation, leisure, and social activities* was assessed by asking respondents to indicate (yes/no) whether their centre was their primary place for these activities. Finally, to characterize general participation patterns at the centre, participants were asked how often they *usually* attended, for how long, and the types of programs/activities they joined.

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### Travel Diaries

Travel diaries were modelled after those used in previous studies on older drivers to obtain data such as trip purposes and weather conditions that could not be captured through electronic in-vehicle devices with GPS (Blanchard, Myers, & Porter, 2010; Myers, Trang, & Crizzle, 2011). Using the templates provided, participants were asked to record the number of trips out of their home for each 24-hour period for 14 consecutive days. For each trip, they were asked to record the general purpose(s) (e.g., shop for groceries, attend the centre), mode of travel, approximate distance to their destination, and the times they left and returned home. With respect to recreational trips, they were asked to briefly describe their activities. For trips to the centre, they were also asked to include the approximate time spent at each visit.

Following the two-week monitoring period, participants completed a verification form to determine whether (a) they had any difficulties with the diaries; (b) their travel patterns and modes of travel over the past two weeks were typical; and (c) there were any special circumstances (e.g., illness, events) over the past two weeks that may have altered their travel patterns.

### Data Handling and Analysis

Completed study materials were sent to the OACAO who in turn forwarded the packages (containing no individual identifiers) to the researchers for coding and analysis. Travel diaries were coded to examine (a) number of trips; (b) trip purpose(s); (c) duration (time away from home); (d) mode of transportation; and (e) distance travelled. Trip purposes were broadly classified into seven categories: recreation, social gatherings, errands (which included household errands such as grocery shopping and personal errands such as haircuts), volunteering/helping others, medical appointments, out-of-town travel, and other (such as attending church). Sub-categories were created to get a more nuanced picture of how and where participants were spending their recreational time. After examining the consistency of travel patterns for weeks one and two, indicators were averaged to provide a weekly profile.

Data from the travel diaries were then used to examine the extent to which the centre was a focal point in out-of-home travel. Indicators were examined in relation to participant characteristics and scores on self-reported health, well-being, and mobility measures using Pearson's correlations and t-tests. A hierarchical multiple regression was then conducted to identify factors associated with the percentage of weekly trips from home that included the centre. The first model included demographic and health characteristics; community participation was added in the second step. In the final model, variables related to centre relationship were included. All analyses were conducted using SPSS Version 25 with a significance level set at $p < .05$.

## Results

### Sample Characteristics

As shown in Table 1, the sample was predominantly older women, and there was a wide age range; only one person was under the age of 50, which is typically the minimum age stipulated by centres. The sample comprised roughly equal proportions of individuals who lived alone versus with others (predominantly their spouse), as well as post-secondary graduates and non-graduates. About a quarter of the sample (26.9%) could be considered earning low income, based on receiving the GIS. Most participants (81%) were still driving and usually got around by driving themselves (74.2%), walking or cycling (38.1%), got rides from friends or family (18.9%), and used public transit (17.5%) or other options such as taxis and accessible transit (9.5%).

Most participants rated their health as good to excellent (85.3%); only 14.7 per cent rated their health as fair or poor. On average, they reported two chronic conditions, most commonly high blood pressure, cholesterol, or heart problems (48.5%), arthritis (39.6%), and back, foot, or joint pain (26.3%). Almost 40 per cent reported using a cane or walker and 23.4% reportedly had fallen over the past year, which is lower than the 30% typically reported by community dwelling older adults (e.g., Pearson, St-Arnaud, & Geran, 2014). Balance confidence scores varied widely (6.3 to 100%) but were generally high (average 85.8). Vitality scores were also high (average 36.4) but also ranged from 10 to 50. About half the sample ($n$ = 139) experienced some loneliness (i.e., scores higher than 3), and nearly one quarter ($n$ = 62) experienced high loneliness (i.e., scores greater than 5). Overall, the sample had a high degree of life-space mobility beyond their neighbourhood; however, approximately one quarter ($n$ = 61) had a restricted life space (i.e., scores less than 60).

Participants were quite engaged in their community. Almost three-quarters of the sample reported attending other facilities (besides their centre), including community centres and fitness facilities (39.2%), church (32.1%), the legion (9.9%), and another older adult centre (4.8%). Furthermore, 63% volunteered in their community. With respect to their centre, 40 per cent were long-term members, and nearly 70 per cent reported that the centre was their primary place for recreation, leisure, and social activities. The sample reported that they usually attended the centre, on average, three days a week (range 0 to 7) for just under three hours per visit. Mondays were the least popular (49% attended), whereas Tuesdays and Fridays were the most popular (61% attended). The participants attended a variety of programs, including exercise and dance (62.8%), games (36.4%), trips (32.8%), education (27.3%), and arts and crafts (26.1%).

### Out-of-Home Travel

Travel diaries were completed by 261 study participants (88.5% of the sample). Only 15 (5.7%) reported some difficulty completing the travel diaries; however, visual inspection of these diaries did not reveal any anomalies or confusion in their reporting. Eighty-five per cent ($n$ = 222) reported that their travel over the two-week period was typical, and almost all participants noted that their modes of travel reflected how they usually got around. Several people also noted there was at least one special circumstance over the two weeks that affected their usual travel patterns, such as more social events like weddings or parties ($n$ = 27), poor weather ($n$ = 26), illness ($n$ = 22), or out-of-town travel ($n$ = 12).

A comparison of weeks one and two showed that the number of trips was slightly higher in the first week (average 10.8 ± 4.7 compared with 9.9 ± 4.9), whereas the number of days with no trips from home was slightly lower (average 0.8 ± 1.0, range 0 to 4 compared with 1.1 ± 1.3, range 0 to 6). However, the general trends (such as driving oneself being the most common mode of travel) were similar. Travel indicators, averaged to one week to compare with survey data from this study and prior studies, are presented in Table 2.

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**Table 1.** Sample characteristics

| | *n* | Percentage | Mean (SD) | Range |
|---|---|---|---|---|
| **Socio-demographics** | | | | |
| Age (*n* = 290) | | | 71.7 (7.9) | 42–93 |
| Sex (*n* = 291) | | | | |
| Men | 59 | 20.3 | | |
| Women | 232 | 79.9 | | |
| Living arrangements (*n* = 293) | | | | |
| Lived alone | 129 | 44 | | |
| Lived with others | 164 | 56 | | |
| Education (*n* = 279) | | | | |
| High school or less | 146 | 52.3 | | |
| Post-secondary | 133 | 45.1 | | |
| Low income (*n* = 268) | 72 | 26.9 | | |
| Current driver (*n* = 281) | 228 | 81.1 | | |
| **Health and well-being** | | | | |
| Self-rated health (n = 293) | | | 3.5 (0.9) | 1–5 |
| Number of chronic conditions (*n* = 293) | | | 2.0 (1.5) | 0–8 |
| Used cane/walker (*n* = 293) | 116 | 39.6% | | |
| Fallen in past year (*n* = 290) | 68 | 23.4% | | |
| Balance confidence (*n* = 244) | | | 85.8 (17.4) | 6.3–100 |
| Life-space mobility (*n* = 247) | | | 72.8 (18.3) | 20–120 |
| Loneliness (*n* = 285) | | | 4.1 (1.4) | 3–9 |
| Vitality (*n* = 285) | | | 36.2 (7.4) | 10–50 |
| **Community engagement** | | | | |
| Used other facilities (*n* = 293) | 215 | 73.4 | | |
| Volunteered (*n* = 289) | 181 | 62.6 | | |
| **Centre relationship** | | | | |
| Length of membership (*n* = 250) | | | | |
| 5 or fewer years | 152 | 60.8 | | |
| 6 and greater years | 98 | 39.2 | | |
| Usual participation patterns | | | | |
| Days per week (*n* = 249) | | | 2.9 (1.4) | 0–7 |
| Hours per week (*n* = 240) | | | 8.5 (6.8) | 0–41 |
| Hours per visit (*n* = 240) | | | 2.7 (1.4) | 0–8 |
| Distance from home (*n* = 278) | | | | |
| Lived within 2 km | 96 | 34.5 | | |
| Lived more than 2 km away | 182 | 65.5 | | |
| Considered centre their primary place for recreation and social activities (*n* = 281) | 190 | 67.6 | | |

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 1 and 15 km from home. The most common mode of travel was driving oneself (accounting for 55.6% of their round trips), followed by walking (19.3%), and rides from others (17.3%). Only 3.5 per cent of trips were by public transit and very few people used taxis or other transit options. Most participants (98%) used the same mode of transport for the round trip.

### *Travel Purposes*

Participants travelled from their home for a variety of reasons (see Table 3), most often for recreational activities, which accounted for almost 42 per cent of their trips per week. Errands (personal or household) accounted for 33 per cent of their trips, followed by social gatherings (23%), which included shopping and dining out with friends or family as well as other get-togethers.

According to the travel diaries, all but 12 individuals (5%) attended their centre at least once during the two-week monitoring period, and no one attended another older adult centre. As shown in Table 4, 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) there. On average, they visited their centre two and a half times per week for approximately eight hours in total, and 20 per cent made more than one trip there a day. Around one-third (*n* = 79) spent 10 or more hours per week at their centre, whereas 11 per cent (*n* = 31) spent two or less. Each trip to the centre was around three hours in duration; around 20 per cent (*n* = 56) spent four or more hours per visit, but only two people spent less than one hour per visit. Centre participation patterns documented in the travel diaries (days per week, hours per visit) correlated highly with "usual" practices reported in the questionnaires (Pearson's *r* ranged from .67 to .78).

Interestingly, about 13 per cent (*n* = 34) attended their centre at least once over the two weeks for the expressed purpose of "socializing" or "hanging out" and did not participate in any specific programs or volunteer. Based on the arrival/departure times in the diaries, almost all participants spent time socializing before and/or after programs, although they did not explicitly state this as a purpose for attending.

### *Associations Between Sample Characteristics, Travel Patterns, and Trip Purposes*

In general, age was negatively correlated with several characteristics, including hours away from home ($p$ = .001), average trip duration ($p$ =.001), hours per day ($p$ = .001), trips for errands ($p$ = .017), and out-of-town travel ($p$ = .029); however, correlations were relatively weak, ranging from -.14 to -.21. Although men and women generally had similar travel patterns, men recorded a significantly higher proportion of driving trips ($p$ = .001), whereas women were more likely to receive rides from others ($p$ = .001). Compared to those who lived with a spouse, those who lived alone recorded a greater proportion of trips close to home ($p$ = .047), greater reliance on rides from others ($p$ < .001), and trips for social gatherings ($p$ = .003). Post-secondary education generally did not impact travel patterns; however, those who graduated college/university took more long-distance trips ($p$ = .001), as well as fewer trips to the centre ($p$ < .001). Low-income participants made more trips overall ($p$ = .025), but trips were closer to home ($p$ < .001) and more likely to be via walking ($p$ < .001). Those receiving GIS also took more trips for recreation ($p$ = .036) but fewer trips for informal social activities ($p$ = .040) and errands ($p$ < .001). Although drivers and non-drivers generally did not differ on the amount of travel, non-drivers made more trips close to home (i.e., within

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**Table 2.** Out-of-home travel patterns from the diaries

| | | Average Number of Trips per Week | | Proportion of Trips per Week (%) | |
|---|---|---|---|---|---|
| | Total | Mean (SD) | Range | Mean (SD) | Range |
| **Trip indicators** | | | | | |
| Total trips | 5,421 | 10.4 (4.6) | 3–30 | | |
| Trips per day | 387.2 | 1.5 (0.7) | 0.4–4.3 | | |
| Total hours | 15,592.6 | 29.9 (11.3) | 5.1–71.7 | | |
| Hours per day | 1,113.8 | 4.3 (1.6) | 0.7–10.2 | | |
| Hours per trip | 2.88 | 3.2 (1.3) | 0.7–9.9 | | |
| Days with no trips | 500 | 1.0 (1.1) | 0–4.5 | | |
| **Distance from home** | | | | | |
| < 1 km | 1,365 | 2.6 (4.3) | 0–25 | 20.4 (26.3) | 0 – 100 |
| 1–15 km | 3,232 | 6.2 (3.6) | 0–20.5 | 62.3 (28.9) | 0 – 100 |
| 16 or more km | 824 | 1.6 (1.8) | 0–9 | 17.4 (21.0) | 0 – 100 |
| **Mode of travel** | | | | | |
| Drive oneself | 2,938 | 5.6 (4.4) | 0–28 | 55.6 (36.2) | 0 – 100 |
| Rides from others | 824 | 1.6 (2.1) | 0–12 | 17.3 (22.5) | 0 – 100 |
| Walk or bike | 1,325 | 2.5 (4.6) | 0–26 | 19.3 (27.9) | 0 – 100 |
| Public transit | 163 | 0.3 (1.2) | 0–13.5 | 3.5 (11.7) | 0 – 87.1 |
| Taxi | 10 | 0.02 (0.2) | 0–2 | 0.3 (1.9) | 0 – 22.2 |
| Other transit[a] | 101 | 0.2 (0.8) | 0–6 | 2.6 (11.6) | 0 – 92.3 |
| Split transit[b] | 60 | 0.1 (0.3) | 0–2.5 | 1.6 (4.7) | 0 – 45.5 |

[a]Other transit included: centre transit, accessible transit.
[b]Participants used one mode of transit to get to their destination and a different mode to return home (e.g., walked to grocery store and took public transit home).

1 km, $p < .001$); the proportion of trips for recreation was also higher for non-drivers ($p = .001$), but the reverse was true for social gatherings ($p = .034$), errands ($p = .003$), out-of-town travel ($p = .003$), and volunteering ($p < .001$).

Generally, self-rated health did not impact travel patterns, but trips to volunteer were less common among those with poor to fair health ($p = .046$) and trips for medical appointments were more frequent ($p = .043$). Those with fair/poor health also tended to travel more often within 1 km of home ($p = < .001$). The number of chronic conditions was inversely correlated with total number of trips from home ($p = .035$) but positively correlated with trips for social activities ($p = .004$) and medical appointments ($p < .001$). Falls and use of a mobility device showed similar associations with the proportion of trips for medical appointments ($p = .021$ and $p = .001$, respectively). Use of a mobility device was also related to fewer trips out of home ($p = .004$).

Overall, balance confidence and life-space mobility showed weak correlations with the out-of-home travel indicators, all in the expected direction. Vitality scores were not associated with travel indicators or trip purposes. Loneliness, however, was positively correlated with the proportion of trips to the centre ($p = .045$).

### *Factors Associated with the Percentage of Trips that Included the Centre*

Table 5 shows the factors associated with the proportion of trips that included the centre. Balance confidence and life-space mobility were excluded from the model due to moderate to strong associations with each other ($r = .40$, $p = .001$), as well as other mobility indicators (i.e., driving status, use of a cane or walker, and falls history). Vitality scores were also excluded as they were not associated with any out-of-home travel indicators. In the first step, having post-secondary education significantly reduced the proportion of trips that included the centre, whereas better self-rated health and higher loneliness had the opposite association. These factors remained significant when adding recreation participation at other community-based facilities and volunteerism. In the final step, education levels, self-rated health, and loneliness remained significant. In addition, being a long-term member, living at least 2 km from the centre, and considering the centre was their primary place for recreation and social activities positively predicted the proportion of trips that included the centre. In the final model, driving status also emerged as a significant predictor, whereby current drivers had a lower proportion of trips from home that included the centre.

## Discussion

Social participation outside the home (community engagement) is considered crucial for successful aging; however, most of the research to date have been limited to survey data. Unlike surveys, 24-hour diaries capture real-time data on what people "actually" did over a specific period. The present study used both methodologies to better understand how members use their older adult centre, relative to other community venues, to meet their recreational and social needs.

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**Table 3.** Travel purposes

| | | Average Trips per Week | | Trips per Week (%) | |
|---|---|---|---|---|---|
| | Sample (%) | Mean (SD) | Range | Mean (SD) | Range |
| **Recreation** | 98.5 | 4.1 (2.6) | 0–18.5 | 41.87 (20.1) | 0 – 100 |
| Older adult centre | 95.4 | 2.4 (1.4) | 0–8.5 | 27.29 (18.5) | 0 – 92.9 |
| Community facility | 49.8 | 1.2 (2.3) | 0–17 | 9.55 (14.8) | 0 – 83.3 |
| Legion | 10.0 | 0.1 (0.3) | 0–2.5 | 0.95 (3.4) | 0 – 29.4 |
| Private club | 2.7 | 0.04 (0.3) | 0–4.5 | 0.29 (2.1) | 0 – 27.3 |
| Educational event | 8.4 | 0.08 (0.4) | 0–4 | 0.67 (3.0) | 0 – 27.6 |
| Another club/group | 20.7 | 0.2 (0.6) | 0–4 | 2.35 (6.4) | 0 – 47.1 |
| Theatre/art/movies | 24.9 | 0.2 (0.4) | 0–2.5 | 2.19 (4.6) | 0 – 23.5 |
| Sport event/casino | 8.8 | 0.07 (0.3) | 0–3 | 0.55 (2.1) | 0 – 15.8 |
| **Social gatherings** | 92.7 | 2.2 (1.7) | 0–11 | 22.86 (17.0) | 0 – 100 |
| Shop with others | 25.7 | 0.2 (0.4) | 0–2 | 2.15 (4.7) | 0 – 33.3 |
| Informal gatherings | 79.7 | 1.1 (1.1) | 0–8.5 | 11.64 (11.1) | 0 – 70.8 |
| Restaurants | 70.5 | 1.1 (1.3) | 0–6 | 11.62 (13.8) | 0 – 90.9 |
| Errands/shopping | 99.2 | 3.4 (1.7) | 0–10 | 33.22 (16.5) | 0 – 87.5 |
| Helping others | 46.0 | 0.8 (1.3) | 0–6 | 7.44 (11.5) | 0–66.7 |
| Medical appointments | 58.6 | 0.5 (0.6) | 0–5.5 | 5.62 (7.4) | 0–57.9 |
| Out-of-town trips | 44.1 | 0.4 (0.7) | 0–3.5 | 4.72 (7.6) | 0–50 |
| Other | 75.5 | 2.1 (3.0) | 0–19 | 17.16 (19.1) | 0–88.1 |
| Church | 33.7 | 0.4 (0.7) | 0–4.5 | 3.69 (7.1) | 0–50 |
| Outdoor activities | 41.8 | 1.2 (2.6) | 0–18.5 | 8.67 (15.0) | 0–88.1 |
| Other purpose | 25.7 | 0.3 (0.9) | 0–7 | 2.57 (6.5) | 0–47.4 |
| Unknown | 16.5 | 0.1 (0.4) | 0–4 | 1.21 (3.3) | 0–27.6 |

**Table 4.** Centre participation patterns recorded in travel diaries (weekly average)

| | Mean (SD) | Range |
|---|---|---|
| Visits to the centre | 2.5 (1.4) | 0–8.5 |
| Hours spent at the centre | 8.0 (6.6) | 0–36.5 |
| Average hours per centre visit | 2.92 (1.4) | 0–7.7 |
| Number of activities per visit | 1 (0.5) | 0–2.8 |
| Trips (%) that included the centre | 27.3 (18.5) | 0–92.9 |
| Time (%) away from home spent at the centre | 27.7 (19.8) | 0–94.6 |
| Recreational trips (%) that included the centre | 66.6 (29.7) | 0–100 |

### *Out-of-Home Travel Patterns*

Data from the travel diaries showed that participants made an average 10 trips per week, for a total of 30 hours away from home. Participants preferred to drive themselves, consistent with prior research (Novek, Menec, Tran, & Bell, 2013; Turcotte, 2012). In fact, during the two-week monitoring period, over 80 per cent drove at least once, and driving was used for 55 per cent of all trips. Also consistent with previous findings (e.g., Dahan-Oliel, Mazer, Gelinas, Dobbs, & Lefebvre, 2010; Turcotte, 2012), public transit was used by a small portion of the sample and accounted for less than 5 per cent of all trips. This is not surprising, as older adults frequently describe public transit as inconvenient due to wait times and schedules (Glasgow & Blakely, 2000). Furthermore, half of our project facilitators noted that there was no public transit in their community or that it was infrequent with limited routes (see Appendix).

Trips were predominantly for recreation (42%) and informal social activities like visiting friends (23%); 33 per cent were for errands. Comparatively, one of the few other studies that examined out-of-home travel (Myers et al., 2011) found that about half of driving trips by older adults over a two-week monitoring period were for shopping or other errands, followed by social, entertainment and leisure activities (including get-togethers with friends and family [42%]), and helping others (15%).

Participation in community-based recreation facilities, including the centre, was much higher in this Ontario sample compared to Menec's study (2003), which found that only 18 per cent of Manitoba older adults surveyed had participated in organized recreation groups in the past week. Participation was also higher than Richard et al.'s finding (2013) that only 27 per cent of a large sample of over 500 older adults surveyed in Montreal attended activities at a community or leisure centre at least once per week. The current sample was also younger and more educated compared with that of the two previous Canadian studies.

### *The Role of Older Adult Centres*

The travel diaries showed that 27 per cent of trips away from home included a stop at the centre; however, this ranged from no trips to

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**Table 5.** Factors associated with the percentage of trips that included the centre

| | Demographic and Health | | Demographic, Health, and Community Participation | | Demographic, Health, Community Participation, and Centre Factors | |
|---|---|---|---|---|---|---|
| | B | SE | B | SE | B | SE |
| Age | –.173 | .176 | –.165 | .178 | –.227 | .170 |
| Female | .715 | 3.079 | .688 | 3.095 | 1.021 | 2.873 |
| Lived alone | –1.125 | 2.882 | –1.087 | 2.913 | –.135 | 2.727 |
| Post-secondary | **-9.235*** ** | **2.544** | **-9.112*** ** | **2.580** | **-7.598** ** | **2.474** |
| Low-income | .779 | 3.126 | .685 | 3.151 | .618 | 2.942 |
| Current driver | –5.590 | 3.341 | –5.803 | 2.439 | **-7.466*** | **3.487** |
| Uses cane/walker | 1.558 | 3.714 | 1.452 | 3.746 | 2.009 | 3.488 |
| Fallen in past year | 1.133 | 2.849 | 1.215 | 2.873 | .297 | 2.676 |
| Self-rated health | **4.754** ** | **1.651** | **4.660** ** | **1.679** | **4.077*** | **1.565** |
| Number of chronic conditions | 1.080 | 1.012 | 1.039 | 1.023 | .713 | .951 |
| Loneliness | **2.938** ** | **1.014** | **2.938** ** | **1.025** | **2.437*** | **.958** |
| Attended another facility | | | –1.036 | 2.953 | 2.606 | 2.837 |
| Volunteered in community | | | .593 | 2.740 | .745 | 2.629 |
| Member for six or more years | | | | | **7.352** ** | **2.596** |
| Considered centre primary place for recreation | | | | | **11.334*** ** | **2.675** |
| Centre > 2 km from home | | | | | **5.852** ** | **2.720** |
| Adjusted $R^2$ | .096 | | .087 | | .214 | |

*Notes.* $n$ = 192;
*$p$ < .05;
**$p$ < .01;
***$p$ < .001.

93 per cent of all trips. Furthermore, time spent at the centre (approximately eight hours per week) represented about one-third of their out-of-home travel, again with considerable variation from no time to 95 per cent of time away from home.

About a quarter of the sample carried out all their recreational activities over the two-week period at their centre. Almost 75 per cent also travelled to other venues for recreation, often to engage in activities (e.g., swimming, playing hockey, bowling) not available at their centre. While the older adult centres strive to offer innovative and diverse programs (e.g., Pardasani & Thompson, 2012), funding and space are two major limitations (Pardasani & Goldkind, 2012; Pardasani & Sackman, 2014). For instance, only 2 of the 12 centres in this study had access to pools. Depending on the level of interest by their members, centres might consider forming sports teams (e.g., bowling, baseball, hockey), joining local leagues, and/or partnering with community centres (e.g., YMCA) to offer programs with specialized facilities. Although older adult centres want to attract more members, it is also important to recognize that for older adults and society, there are potential benefits to participating in a variety of recreational activities with different age groups and in various locations.

Notwithstanding, for this sample, the proportion of trips to the centre was nearly double that to other facilities (27% compared with 16%), suggesting that even among those who attended other organizations, the centre was still a focal point for recreation and social activities. As noted by other researchers, some older adults may feel more comfortable participating in centres that cater to their age group (Hickerson et al., 2008). This may be particularly true for persons who have health and mobility issues, as program offerings can be tailored to abilities (e.g., Zumba Gold, chair exercises, enlarged playing or bingo cards).

Our study suggested that the centre was a focal point in their out-of-home travel, particularly for potentially more vulnerable older adults, including those who were non-drivers, had less education, and felt lonelier. Not surprising, long-term membership (six years and over) and the belief that the centre was their primary place for recreation, leisure, and social activities were also important. The predictors examined in this study explained only 21 per cent of the variance; thus, other factors must be considered. For instance, social support networks (inside and outside of the centre) may affect the extent to which the centre is a focal point of their recreational activities.

In the present study, a subset of participants (13%) attended their centre for the stated purpose of socializing with staff and peers (versus program participation per se). The diaries also showed that many people arrived at the centre early (up to an hour before their program started) and/or stayed long after their program ended. This type of informal participation (i.e., socialization) has not been well-documented in the literature, although it is widely assumed to occur. For example, one evaluation of a congregate dining program at an older adult centre in Toronto found through program observations that many participants joined the lunch groups without purchasing a meal themselves (Sheppard, Dube, Ducak, & Myers, 2018). Together, with the present findings, this suggests that all older adult centres should maximize opportunities for socialization (e.g., coffee clubs, dedicated spaces) outside of formal programming. More research is also needed in this area, as informal socialization with staff and peers may be key to reducing social isolation.

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Other contextual factors such as costs (e.g., program fees, transportation, parking), where older adults live in relation to organizations (e.g., urban versus rural dwelling), and availability of culturally or linguistically diverse programming are also important to consider. With respect to costs, all 12 older adult centres in the current study had program fees, including annual membership fees that ranged from $10 to $200 (for an average of $40), as well as additional registration fees that were as high as $120 for a sessional program. Furthermore, most centres offered on-site parking for free (58%) or at significantly reduced rates (17%). Particularly for low-income older adults, program costs and availability of parking may impact the extent to which they are able to participate in social and recreational programs.

Another factor that is critical to consider is the impact of centre location (i.e., urban versus rural) on the nature and extent of participation. While centres in urban areas may offer more programs (e.g., see Krout, 1987, 1994), rural dwellers may participate more often as they have fewer alternatives for recreation (Calsyn & Winter, 2000; Strain, 2001). Although the current study included centres from communities of varying sizes, it was not possible to determine whether individual participants were urban or rural dwellers, as they could commute from various places. The current study did find that living more than 2 km away from the centre significantly increased the proportion of out-of-home trips that included the centre, which may provide further support that older adult centres are focal points for those who live farther away.

Availability of culturally or linguistically diverse programming is also important to consider. The present study did not examine ethnicity; however, only 32 participants (11% of the sample) spoke a language other than English or French (over half of which were Mandarin speakers from Centre J). Furthermore, only two centres (F and J) regularly offered programs in other languages. This suggests that our sample comprised primarily White, English-speaking older adults, which is consistent with other research at Ontario-based older adult centres (Gavin & Myers, 2003). More research is needed on how best to reach and engage older adults from diverse communities. For instance, Lai (2001) reported low attendance in a random sample of Chinese older adults participating at an older adult centre in Calgary: 25 per cent visited more than once per week, 11 per cent went weekly, and the remaining, less often. Culturally diverse programming at older adult centres positively correlates with participation rates among ethnically diverse older adults (Lai, 2006; McCaffrey, 2008; Pardasani, 2004); however, centres must have ethnically and linguistically diverse staff to support these programs (Pardasani, 2004), as was observed at one of our study centres.

While the centre characteristics examined in our study (refer to Appendix) provide a good starting point, there are other important contextual factors that may impact participation, such as accessibility supports for persons with mobility and other challenges (Sheppard, 2020). Centres should track how changes in these factors (e.g., reducing fees, providing more amenities, offering programs in the evenings) affect user rates and characteristics. Additionally, as shown by Sheppard et al. (2018), environmental scans are useful to examine whether similar programs and services are being offered in the vicinity by other groups (e.g., community recreation centres, libraries, churches), together with their associated costs, transportation options, languages, and so forth.

### Study Strengths and Limitations

This study utilized a relatively novel approach to examine out-of-home travel patterns. Participants were asked to fill out their diaries after each trip or at the end of the day when they returned home. Nearly 90 per cent of the sample submitted their diaries with no missing days. Facilitators "checked in" with participants over the two-week monitoring period, which likely contributed to compliance. Facilitators also described how participants enjoyed filling out the diaries; many were surprised to discover how busy they actually were.

Despite the positive feedback on the diaries, there were some challenges. While participants were diligent in filling in their trip information (e.g., travel times, trip purpose), details on weather conditions, as well as who gave them rides, were not consistently provided, similar to prior studies (e.g., Myers et al., 2011). Furthermore, while participants were asked to report times of arrival and departure with respect to trips to their centres, they were not asked to do so for trips to other locations (to minimize burden). For instance, if a person left at 2 p.m. to go to the legion and get groceries, returning home at 5 p.m., it is not clear how much time was spent at the legion versus running errands. Participants also did not provide the same level of detail concerning their leisure activities at other venues; for instance, some just noted they went to the legion, whereas others reported they went to the legion to play cards.

Centre participation patterns according to the diaries were congruent with usual practices reported in the questionnaires, increasing confidence in the findings, and attesting to the value of mixed methods. However, as individuals reported on usual practices at the end of the second session (i.e., after they submitted and verified their diaries), it is possible that diary completion influenced their responses to the centre use questionnaire.

This study recruited a diverse group of participants from 12 centres across Ontario; however, sample representativeness is unknown as most centres did not routinely collect background information on their clientele, apart from sex and age groups (Sheppard et al., 2016). Now that the OACAO has recommended all centres ask new members to complete a common background questionnaire (which was used in this project), future research and evaluation will have a basis of comparison.

Centres were generally successful at reaching participants who attended a variety of programs and on different days of the week; however, staff were instructed to recruit only members who had attended the centre for at least six months, and refusal rates were not tracked. Therefore, it could be that more dedicated and engaged members agreed to participate. Having staff (as opposed to researchers) facilitate recruitment and data collection likely contributed to study completion. Notwithstanding, the travel diaries showed substantial variation with respect to number of trips to the centre, hours spent, and activities. In fact, some participants did not attend the centre at all over the two weeks, except for the scheduled data collection sessions.

Time of data collection (i.e., late fall to early spring) should also be considered. Previous research has found that class enrolment and attendance rates were highest in the fall, with a small decline in the winter and a sharp decline in the spring (Gavin & Myers, 2003). Many centres also offer limited programming in the summer as members often pursue outdoor leisure activities (such as golf, hiking, biking, cottaging, and travel).

Previous research also suggests that older adults are less likely to drive for recreational and social purposes when the weather is bad (Myers et al., 2011). Although we could have consulted regional weather archives, this would have been an arduous undertaking given the volume of trips (over 5,000) and the location of participants in different parts of the province. Fortunately, severe weather conditions were reportedly infrequent over the study period (based on travel dairies and days when a centre closed), potentially impacting

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about 29 participants from two centres in the second week of travel (11% of the sample). For similar reasons, we did not do further breakdowns of trips according to daytime versus nighttime, or weekdays versus weekend, as has been done in previous studies (Blanchard et al., 2010; Myers et al., 2011). As many centres were not open in the evening or on weekends, we may have underestimated the proportion of trips to the centre (which were based on the 24-hour, 7 days a week travel diaries).

Lastly, the current study explored how older adult centre members use these facilities to meet their recreational and social needs but did not explore why some older adults choose not to attend older adult centres. There has been very little research in this area (Kadowaki & Mahmood, 2018)—primarily surveys to examine potential interest in these facilities (Cohen-Mansfield, Parpura-Gill, Campbell-Kotler, Vass, & Rosenberg, 2005; MaloneBeach & Langeland, 2011; Marken, 2005). If older adult centres want to attract more older adults, further research and evaluation are needed to understand potential barriers/facilitators such as interest, cost, transportation, and availability of cultural programming, as discussed previously.

As noted in the methods, provincial funding in Ontario is conditional on evidence that centres meet a need in their community and provide benefits to their members (Ministry of Seniors Affairs, 2017). Partnerships with universities and other evaluation experts are vital to build and sustain evaluation capacity among stakeholders (including staff, volunteers, and board of directors). By the same token, funding models (such as the SALC Act) should expand to provide dedicated resources to support evaluation activities.

## Conclusions

The travel diaries provided a two-week snapshot of out-of-home travel patterns, allowing us to determine the proportion of trips that included a stop at the centre, as well as other locations people travelled to for recreational and social activities. Although three-quarters of centre members made use of other community venues over the monitoring period, one-third of all trips from home included a stop at the centre. For this sample, their older adult centre was a focal point in their recreational and social activities, particularly for those who may be more vulnerable (i.e., who did not drive, had low education, or experienced loneliness). Prospective, mixed-methods studies with new joiners are required to examine whether centre participation, in conjunction with other types of community engagement, produces desired outcomes (such as reduced loneliness and social isolation).

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## References

Aday, R. H., Kehoe, G. C., & Farney, L. A. (2006). Impact of senior center friendships on aging women who live alone. *Journal of Women & Aging*, **18** (1), 57–73. https://doi.org/10.1300/J074v18n01_05

Baker, P. S., Bodner, E. V., & Allman, R. M. (2003). Measuring life-space mobility in community-dwelling older adults. *Journal of the American Geriatrics Society*, **51**(11), 1610–1615. https://doi.org/10.1046/j.1532-5415.2003.51512.x

Blanchard, R. A., Myers, A. M., & Porter, M. M. (2010). Correspondence between self-reported and objective measures of driving exposure and patterns in older drivers. *Accident Analysis and Prevention*, **42**(2), 523–529. https://doi.org/10.1016/j.aap.2009.09.018

Bobitt, J., & Schwingel, A. (2017). Evidence-based programs for older adults: A disconnect between U.S. national strategy and local senior center implementation. *Journal of Aging and Social Policy*, **29**(1), 3–19. https://doi.org/10.1080/08959420.2016.1186465

Calsyn, R. J., & Winter, J. P. (2000). Who attends senior centers? *Journal of Social Service Research*, **26**(2), 53–69. https://doi.org/10.1300/J079v26n02_03

Cohen-Mansfield, J., Parpura-Gill, A., Campbell-Kotler, M., Vass, J., & Rosenberg, F. R. (2005). Elderly persons' preferences for topics of discussion and shared interest groups. *Journal of Gerontological Social Work*, **44**(3–4), 39–57. https://doi.org/10.1300/J083v44n03_04

Dahan-Oliel, N., Mazer, B., Gelinas, I., Dobbs, B., & Lefebvre, H. (2010). Transportation use in community-dwelling older adults: Association with participation and leisure activities. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, **29**(4), 491–502. https://doi.org/10.1017/S0714980810000516

Dondzila, C. J., Swartz, A. M., Keenan, K. G., Harley, A. E., Azen, R., & Strath, S. J. (2014). Geospatial relationships between awareness and utilization of community exercise resources and physical activity levels in older adults. *Journal of Aging Research*, **2014**, 302690. https://doi.org/10.1155/2014/302690

Dubé, L., Myers, A. M., Sheppard, C., & Friedman, L. (2016). *Environmental scan: Review of senior centre associations, relevant evaluation materials, and guidelines from select Canadian funding agencies*. Ontario: Older Adult Centres' Association of Ontario.

Fitzpatrick, S. E., Reddy, S., Lommel, T. S., Fischer, J. G., Speer, E. M., Stephens, H., et al. (2008). Physical activity and physical function improved following a community-based intervention in older adults in Georgia senior centers. *Journal of Nutrition for the Elderly*, **27**(1–2), 135–154. https://doi.org/10.1080/01639360802060223

Fitzpatrick, T. R., McCabe, J., Gitelson, R., & Andereck, K. (2006). Factors that influence perceived social and health benefits of attendance at senior centers. *Activities, Adaptation & Aging*, **30**(1), 23–45. https://doi.org/10.1300/J016v30n01_02

Fulbright, S. A. (2010). Rates of depression and participation in senior centre activities in community-dwelling older persons. *Journal of Psychiatric and Mental Health Nursing*, **17**(5), 385–391. https://doi.org/10.1111/j.1365-2850.2009.01535.x

Gavin, T. S., & Myers, A. M. (2003). Charateristics, enrollment, attendance and dropout patterns of older adults in beginner Tai-Chi and line dancing programs. *Journal of Aging and Physical Activity*, **11**, 123–141. https://doi.org/10.1123/japa.11.1.123

Gitelson, R., Ho, C., Fitzpatrick, T., Case, A., & McCabe, J. (2008). The impact of senior centers on participants in congregate meal programs. *Journal of Park and Recreation Administration*, **26**(3), 136–151.

Glasgow, N., & Blakely, R. M. (2000). Older nonmetropolitan residents' evaluations of their transportation arrangements. *Journal of Applied Gerontology*, **19**(1), 95–116. https://doi.org/10.1177/073346480001900106

Goll, J. C., Charlesworth, G., Scior, K., & Stott, J. (2015). Barriers to social participation among lonely older adults: The influence of social fears and identity. *PLoS One*, **10**(2), e0116664. https://doi.org/10.1371/journal.pone.0116664

Hickerson, B., Moore, A., Oakleaf, L., Edwards, M., James, P. A., Swanson, J., et al. (2008). The role of a senior center in promoting physical activity for older adults. *Journal of Park and Recreation Administration*, **26**(1), 22–39.

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale measuring loneliness in large surveys: Results from two population based studies. *Research in Aging*, **26**(6), 655–672. https://doi.org/10.1177/0164027504268574

Kadowaki, L., & Mahmood, A. (2018). Senior centres in Canada and the United States: A scoping review. *Canadian Journal on Aging*, **37**(4), 420–441. https://doi.org/10.1017/S0714980818000302

Krout, J. A. (1987). Rural-urban differences in senior centre activities and services. *The Gerontologist*, **27**, 92–97. https://doi.org/10.1093/geront/27.1.92

Krout, J. A. (1994). Community size differences in senior center resources, programming and participation: A longitudinal analysis. *Research on Aging*, **16**(4), 440–462. https://doi.org/10.1177/0164027594164006

Krout, J. A., Cutler, S., & Coward, R. T. (1990). Correlates of senior centre participation: A national analysis. *The Gerontologist*, **30**, 72–79. https://doi.org/10.1093/geront/30.1.72

Lai, D. W. L. (2001). Use of senior center services of the elderly chinese immigrants. *Journal of Gerontological Social Work*, **35**(2), 59–79. https://doi.org/10.1300/J083v35n02_05

Lai, D. W. L. (2006). Predictors of use of senior centers by elderly chinese immigrants in Canada. *Journal of Ethnic and Cultural Diversity in Social Work*, **15**(1–2), 97–121. https://doi.org/10.1300/J051v15n01_05

Levasseur, M., Richard, L., Gauvin, L., & Raymond, E. (2010). Inventory and analysis of definitions of social participation found in the aging literature: Proposed taxonomy of social activities. *Social Science & Medicine*, **71**(12), 2141–2149. https://doi.org/10.1016/j.socscimed.2010.09.041

MaloneBeach, E. E., & Langeland, K. L. (2011). Boomers' prospective needs for senior centers and related services: A survey of persons 50–59. *Journal of Gerontological Social Work*, **54**(1), 116–130. https://doi.org/10.1080/01634372.2010.524283

Marken, D. M. (2005). One step ahead: Preparing the senior center for 2030. *Activities, Adaptation & Aging*, **29**(4), 69–84. https://doi.org/10.1300/J016v29n04_05

McCaffrey, R. (2008). The lived experience of Haitian older adults' integration into a senior center in Southeast Florida. *Journal of Transcultural Nursing*, **19**(1), 33–39. https://doi.org/10.1177/1043659607309139

McGovern, J., Brown, D., & Gasparro, V. (2016). Lessons learned from an LGBTQ senior center: A Bronx tale. *Journal of Gerontological Social Work*, **59**(7–8), 496–511. https://doi.org/10.1080/01634372.2016.1255692

Ministry of Seniors Affairs. (2017). *Seniors active living centres program expansion call for proposals (2017–2018)*. Ontario: Government of Ontario.

Myers, A. M., Fletcher, P. C., Myers, A. H., & Sherk, W. (1998). Discriminative and evaluative properties of the activities-specific balance confidence (ABC) scale. *Journal of Gerontology. Series A: Biological Sciences and Medical Sciences*, **53**(4), M287–M294. https://doi.org/10.1093/gerona/53a.4.m287

Myers, A. M., Malott, O. W., Gray, E., Tudor-Locke, C., Ecclestone, N. A., O'Brien Cousins, S., et al. (1999). Measuring accumulated health-related benefits of exercise participation for older adults: The vitality plus scale. *Journal of Gerontology. Series A: Biological Sciences and Medical Sciences*, **54A**(9), M456–M466. https://doi.org/10.1093/gerona/54.9.m456

Myers, A. M., Trang, A., & Crizzle, A. M. (2011). Naturalistic study of winter driving practices by older men and women: Examination of weather, road conditions, trip purposes and comfort. *Canadian Journal on Aging*, **30**(4), 577–589. https://doi.org/10.1017/S0714980811000481

Novek, S., Menec, V. H., Tran, T., & Bell, S. (2013). *Social participation and it's benefits*. Centre on Aging. Retrieved March 1, 2022, from http://www.gov.mb.ca/shas/publications/docs/senior_centre_report.pdf.

Pardasani, M. P. (2004). Senior centers: Increasing minority participation through diversification. *Journal of Gerontological Social Work*, **43**(2–3), 41–56. https://doi.org/10.1300/J083v43n02_04

Pardasani, M. P. (2010). Senior centers: Characteristics of participants and nonparticipants. *Activities, Adaptation & Aging*, **34**(1), 48–70. https://doi.org/10.1080/01924780903552295

Pardasani, M. P., & Goldkind, L. (2012). Senior centers and policy advocacy: Changing public perceptions. *Educational Gerontology*, **38**(6), 375–390. https://doi.org/10.1080/03601277.2010.544588

Pardasani, M. P., & Sackman, B. (2014). New York City senior centers: A unique, grassroots, collaborative advocacy effort. *Activities, Adaptation & Aging*, **38**(3), 200–219. https://doi.org/10.1080/01924788.2014.935907

Pardasani, M. P., & Thompson, P. (2012). Senior centers: Innovative and emerging models. *Journal of Applied Gerontology*, **31**(1), 52–77. https://doi.org/10.1177/0733464810380545

Pearson, C., St-Arnaud, J., & Geran, L. (2014). *Understanding seniors' risk of falling and their perception of risk. Health at a Glance: October 2014* (Catalogue no.82-624-X). Retrieved March 15, 2022, from https://www150.statcan.gc.ca/n1/pub/82-624-x/2014001/article/14010-eng.pdf.

Powell, L. E., & Myers, A. M. (1995). The activities-specific balance confidence (ABC) scale. *Journal of Gerontology. Series A: Biological Sciences and Medical Sciences*, **50**, M28–M34. https://doi.org/10.1093/gerona/50a.1.m28

Pristavec, T. (2016). Social participation in later years: The role of driving mobility. *Journals of Gerontology. Series B: Psychological Sciences and Social Sciences*, **78**, 1457–1469. https://doi.org/10.1093/geronb/gbw057

Rhynes, L., Hayslip, B., Caballero, D., & Ingman, S. (2013). The beneficial effects of senior center attendance on grandparents raising grandchildren. *Journal of Intergenerational Relationships*, **11**(2), 162–175. https://doi.org/10.1080/15350770.2013.782746

Schneider, A. E., Ralph, N., Olson, C., Flatley, A. M., & Thorpe, L. (2014). Predictors of senior center use among older adults in New York City public housing. *Journal of Urban Health*, **91**(6), 1033–1047. https://doi.org/10.1007/s11524-014-9906-3

Sheppard, C. (2020). *Older Adult Centres' Association of Ontario (OACAO) Member and Seniors Active Living Centre (SALC): 2020 member profile survey*. Ontario: Older Adult Centres' Association of Ontario. http://www.oacao.org/wp-content/uploads/2020/11/OACAO-Member-and-SALC-2020-Profile-Survey-Report.pdf.

Sheppard, C. L., Dube, L., Ducak, K., & Myers, A. M. (2018). Development and evaluation of let's do lunch: A congregate meal program at an urban senior center. *Journal of Nutrition in Gerontology and Geriatrics*, **37**(2), 49–58. https://doi.org/10.1080/21551197.2018.1478760

Sheppard, C. L., Myers, A. M., & Dube, L. (2016). *2015 Profile of the OACAO's Member Centres and an Examination of Evaluation Capacity*. Ontario: Older Adult Centres' Association of Ontario.

Song, M., Seo, K., Choi, S., Choi, J., Ko, H., & Lee, S. J. (2017). Seniors centre-based health intervention programmes in the United States and South Korea: A systematic review. *International Journal of Nursing Practice*, **23**(5), 12568. https://doi.org/10.1111/ijn.12568

Statistics Canada. (2019). *Population Projections for Canada (*2018 to 2068*), Provinces and Territories (2018 to 2043)* (Catelogue no. 91-520-X). Retrieved March 15, 2022, from https://www150.statcan.gc.ca/n1/en/pub/91-520-x/91-520-x2019001-eng.pdf?st=WllNBcZR.

Steptoe, A., Shankar, A., Demakakos, P., & Wardle, J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences of the United States of America*, **110**(15), 5797–5801. https://doi.org/10.1073/pnas.1219686110

Strain, L. A. (2001). Senior centres: Who participates? *Canadian Journal on Aging*, **20**(4), 471–491.

Swan, J. H., Severance, J. J., & Turner, K. (2016). Senior centers and nutritional outcomes: A Texas example. *Social Work in Public Health*, **31**(5), 439–452. https://doi.org/10.1080/19371918.2015.1137506

Swan, J. H., Turner, K., Shashidhara, S., & Sanders, D. (2013). Increased physical activity, physician recommendation, and senior center participation. *Health*, **05**(12), 8–18. https://doi.org/10.4236/health.2013.512A002

Taylor-Harris, D., & Zhan, H. J. (2011). The third-age African American seniors: Benefits of participating in senior multipurpose facilities. *Journal of Gerontological Social Work*, **54**(4), 351–371. https://doi.org/10.1080/01634372.2010.539588

Turcotte, M. (2012). *Profile of seniors' transportation habits* (Catalogue no. 11-008-X). Retrieved February 28, 2022, from http://www.statcan.gc.ca/pub/11-008-x/2012001/article/11619-eng.pdf.

Turner, K. (2004). Senior citizens centers: What they offer, who participates, and what they gain. *Journal of Gerontological Social Work*, **43**(1), 37–47. https://doi.org/10.1300/J083v43n01_04

Walker, J., Bisbee, C., Porter, R., & Flanders, J. (2004). Increasing practitioners' knowledge of participation among elderly adults in senior center activities. *Educational Gerontology*, **30**(5), 353–366. https://doi.org/10.1080/03601270490433549