

# BMJ Open Impact of COVID-19 on mobility and participation of older adults living in Hamilton, Ontario, Canada: a multimethod cohort design protocol

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## ABSTRACT

**Introduction** The novel COVID-19 required many countries to impose public health measures that likely impacted the participation and mobility of community-dwelling older adults. This protocol details a multimethod cohort design undertaken to describe short-term and medium-term changes to the mobility and participation of older Canadians living in the community rather than retirement facilities during the COVID-19 pandemic.

**Methods and analysis** A longitudinal telephone (or online)-administered survey is being conducted with a random sample of older adults living within 20 km of McMaster University, Hamilton, Ontario, Canada, identified from census dissemination areas. Baseline data collection of community-dwelling older adults aged 65 years and over began in May 2020 with follow-ups at 3, 6, 9 and 12 months. The Late-Life Function and Disability Instrument and global rating of change anchors are the primary outcomes of interest. A subsample of respondents will participate in open-ended, semistructured interviews conducted over the telephone or through video-conference, to explore participants' lived experiences with respect to their mobility and participation during the pandemic. Descriptive statistics and quantitative approaches will be used to determine changes in mobility and social and personal participation, and associated personal and environmental factors. For the interviews, qualitative data will be analysed using descriptive phenomenology.

**Ethics and dissemination** Approval was obtained from the Hamilton Integrated Research Ethics Board of McMaster University (2020-10814-GRA). This study may inform the design of programmes that can support community-dwelling older adults during and after the COVID-19 pandemic. Findings will be disseminated through peer-reviewed publications and conferences focused on ageing.

## INTRODUCTION

The emergence of SARS-CoV-2, also known as COVID-19, caused a pandemic with enormous economic, health and social repercussions

## Strengths and limitations of this study

- This protocol was designed to describe the impact of COVID-19 and social distancing on the mobility and participation of community-dwelling older adults.
- The qualitative interviews will explore the lived experience of older adults and how their activities, mobility and social networks may have changed during the pandemic.
- The longitudinal nature of the study, with 3-month, 6-month, 9-month and 12-month follow-ups, will allow us to examine both short-term and medium-term changes in mobility and participation in older adults as the pandemic unfolds.
- These data will inform the development of strategies that researchers and clinicians can use to minimise the adverse consequences of this pandemic on the lives of older adults.
- Given the timing of the study, we will be unable to comment with certainty on the usual mobility and participation levels of our sample prior to the pandemic, and responses could be subject to recall bias and social desirability. In addition, given the nature of the telesurvey, our study consists of entirely self-reported measures. Participants may not remember their previous health conditions or changes to their mobility. They may also over-rate their physical function and social status. To minimise bias, we opted to use validated self-reported questionnaires, selected an appropriate recall period (before the pandemic), and ensured our survey administrators and interviewers were well trained.

worldwide.<sup>1</sup> The group most vulnerable to COVID-19 are older adults and those with chronic underlying health conditions.<sup>2 3</sup> Recent data indicate the mortality rate is 3.6% among those in their 60s, which increases to 8.0% and 14.8% for those in their 70s and those aged 80 years and older,<sup>4 5</sup> respectively. The WHO strongly recommends public

health measures, including physical/social distancing and masking, as the primary means of prevention and slowing the spread of the virus.<sup>4 6</sup> These measures suggest all individuals, particularly older people, avoid any physical contact with others beyond their household. Older adults living with chronic health conditions are at an even higher risk of complications from COVID-19 and, as such, Canada's and other countries' national public health agencies emphasise the importance of avoiding unnecessary trips outside the home. Although social distancing has shown to be effective in reducing the spread of COVID-19 and deaths due to this virus,<sup>6</sup> the resulting impact of social isolation and reduced activity on the ageing population could be devastating.<sup>7</sup>

The importance of complying with social distancing and other public health measures during the pandemic has also impacted the usual patterns and routines of those who live in the community.<sup>4</sup> Complying with these measures may mean a reduction in meaningful social contact and participation in life roles—a critical aspect of health recognised by the WHO. For older people, in particular, social isolation is often intertwined with feelings of loneliness,<sup>8 9</sup> which can result in subjective feelings of anxiety and dissatisfaction with one's lack of meaningful connectivity with others.<sup>4 10</sup> Although many older people live alone and engage less often in social gatherings, those in their cohort have been disproportionately affected by COVID-19. Furthermore, to comply with such measures, community-dwelling older adults may have essential items delivered to their home, such as groceries and medication, rather than go to a store, which means they may not be able to fully participate in their daily life activities and roles at a level with which they are satisfied.

Sustaining regular physical activity in later life has many known health benefits, including maintenance of muscle strength, mobility and self-care tasks.<sup>11</sup> Older adults who are less active are at risk of becoming frail and deconditioned and may experience losses in physical function/mobility that further increase their risk of adverse outcomes such as falls and hospitalisation. Mobility limitation may additionally pose a strong barrier to home and community participation.<sup>12</sup> Hence, it is crucial that we better understand the impact of pandemic-related public health measures on the everyday functioning and participation of community-dwelling older people.

The WHO International Classification of Functioning, Disability and Health (ICF) defines participation as the 'involvement in a life situation' and recognises that restrictions in home and community life can lead to dysfunction and disability.<sup>13</sup> Within the ICF, the wide scope and complexity of mobility and its impact on health is also acknowledged, which ranges from moving one's limb or transferring from a chair, to getting around the community using various forms of transportation. Key factors known to influence mobility and participation in later life are physical and functional declines in health as well as contextual barriers that prevent access to activities.<sup>14</sup> Thus, we developed a longitudinal survey

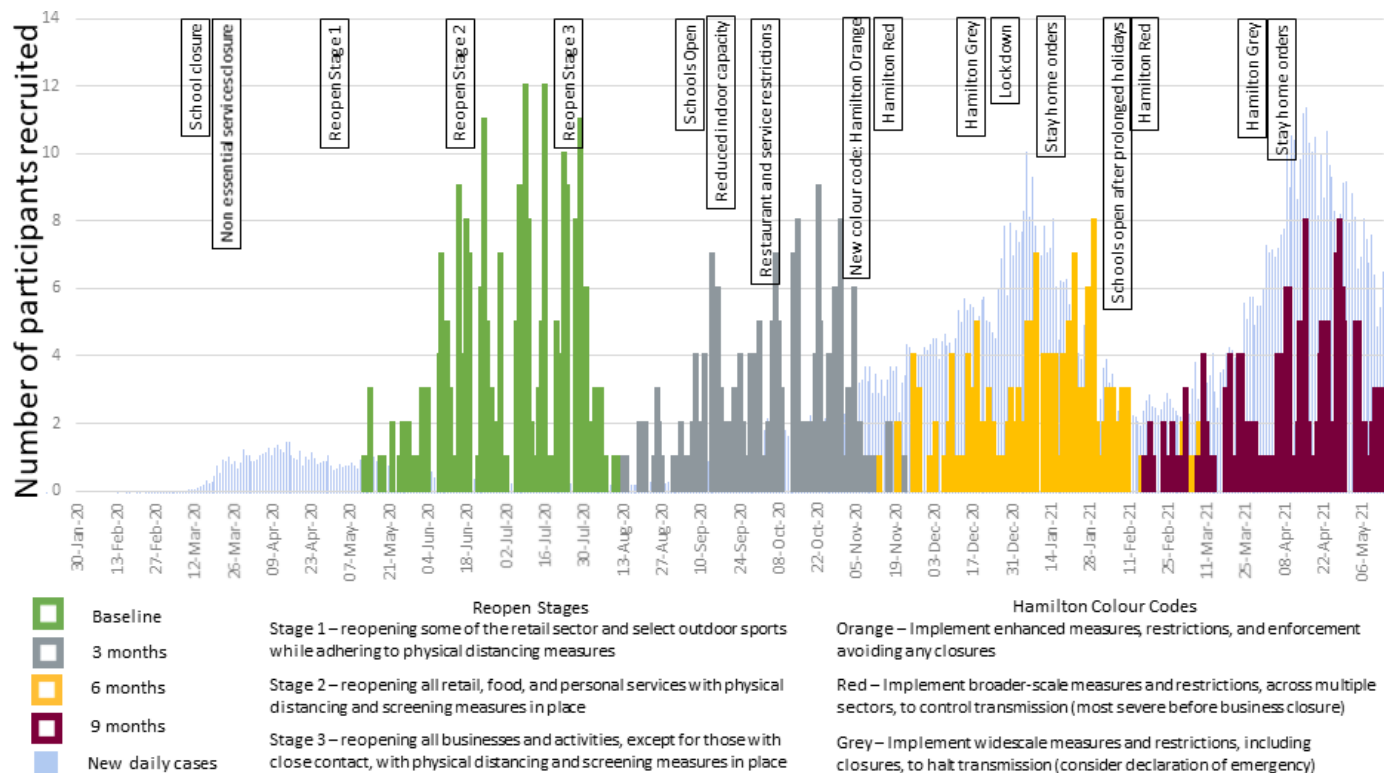
to understand the short-term and medium-term impact of COVID-19 and associated public health measures on the mobility and participation of community-dwelling older adults. Our protocol also includes qualitative interviews with a subsample of respondents to explore their lived experiences of participation while pandemic-related public health restrictions are in place. During the interviews, participants will be asked to elaborate on their participation in activities pre-pandemic, during, as well as post-pandemic.

By understanding the impact of the pandemic on mobility and participation of community-dwelling older adults, findings from this study can inform interventions and other strategies that can mitigate the health and social-related consequences of the pandemic as well as prioritise scarce resources to those most at risk. In March 2020, the WHO reminded governments to support interventions to ensure older people can access what is needed during this pandemic to maintain their well-being. Such interventions could include innovations that support social connectivity with families and friends, how to get help for everyday needs, and recommendations on how to maintain their mental and physical health when stringent public health measures are in place.<sup>15</sup> We anticipate the results of both the survey and interviews will inform targeted interventions that support the health and mobility of older adults living in the community during the current and future pandemics, or any other circumstances that challenge or disrupt their participation in everyday life.

## Objectives

To describe changes in mobility and participation among community-dwelling older adults during the COVID-19 pandemic, and the associated personal and environmental factors that can influence engagement in everyday life and impact mobility, we address the following questions:

1. What are the short-term and medium-term mobility and participation implications for older adults during the pandemic crisis?
2. What person-level characteristics and environmental factors are associated with different levels of mobility and participation of older adults during this pandemic?
3. What personal and environmental factors (eg, social support, nutrition risk, resilience) are associated with changes in physical function and participation scores at 3-month, 6-month, 9-month and 12-month follow-ups?
4. What is the lived experience of community-dwelling older adults who reported higher levels of distress during the pandemic and how do they perceive their current level of participation in everyday activities in comparison with how they managed these activities before the pandemic, including factors that have influenced their ability to manage these activities (or not) during the pandemic due to the public health restrictions in place?



**Figure 1** IMPACT Study timeline showing the number of participants recruited at baseline and follow-ups, the daily number of cases of COVID-19 and the measures taken by the Ontario Government to contain the spread of the disease.

5. How do older adults envision what their daily lives and corresponding participation in everyday activities will look like after the pandemic when associated restrictions are lifted?

This study will also serve as a platform for additional analyses not limited to those described above.

## METHODS AND ANALYSIS

A longitudinal telephone-administered survey, with the option to complete the survey online through a link sent by email, is being conducted with a random sample of older adults living in Hamilton, Ontario, Canada. Baseline data collection began on 12 May 2020 at the end of the first wave of the pandemic and enrolment continued until 5 August 2020. The 3-month follow-up survey was initiated in August 2020, the second follow-up at 6 months that started in November 2020, and we are currently completing the 9-month follow-up that started in February 2021. The 12-month follow-up is scheduled to run date to date, 2021. Figure 1 shows the study timeline and the respective lockdown stages in the Hamilton, Ontario area.

Participants were initially contacted by phone and asked if they consented to be contacted again every 3 months after the first survey was administered. In addition to the survey, a subsample of survey respondents will be contacted to participate in an open-ended, semistructured interview. Further details on the target sample for

this qualitative study, including recruitment as well as other procedures, are outlined below.

## Participants and recruitment

Participants were eligible for the study if they were community-dwelling adults (ie, living independently in the community, aged 65 years or older, able to provide consent and live in the greater Hamilton area, Ontario). Exclusion criteria included not living independently in the community (ie, live in a nursing home) or the presence of a severe and uncorrectable cognitive, visual, or hearing impairment that would preclude a participant's ability to complete the survey. At the time of agreeing to complete the survey, participants were asked if they could be contacted for future studies. A list of those who were agreeable to be contacted will be generated as potential participants for the interview study. The inclusion and exclusion criteria for the interviews are the same as those for the survey.

## Sample size

Postal codes were selected based on distance from McMaster University, where participants were categorised into four groups:  $\leq 5$  km, 5–10 km, 10–15 km and 15–20 km. To increase the probability of identifying older aged people (ie, age  $\geq 65$  years) in the community, we ranked them from highest to lowest proportion of age. We used 2016 census population data to extract the proportion of the older population at each dissemination area and linked them to the postal codes. We selected the

top-ranked postal codes and sent them to ASDE Survey Sampler,<sup>16</sup> which, in March 2020, provided us with 10 000 residential phone numbers equally distributed for each distance category, that is, 2500 per group. A total of 784 postal codes were selected which cover a population of 43 664 from which 21 320 were listed as 65 years old and above. In the first set of phone numbers, all residential phone numbers (n=6107) from 288 postal codes were selected that cover a population of 22 769, where 12 990 are aged  $\geq 65$  years. In the second set of numbers, a random sample of 3893 numbers from additional 345 postal codes were selected. In order to detect a minimally clinically important difference of 2.5 points<sup>17</sup> (corresponding to an effect size of 0.195) in scores of Late-Life Function and Disability Instrument-Function component at each follow-up, we used an SD of 6.4,<sup>18</sup> a power of 95%, an alpha level of 0.05, and a sample size of 216 participants was required. Accounting for 20% loss to follow-up, the final sample size required was 260 participants. Consecutive phone numbers from our randomised list of 10 000 numbers were called until the required sample of 260 participants was obtained. Recruitment began on 12 May and ended on 5 August 2020, with 272 participants included in the baseline survey.

Data from the Impact of Event Scale-Revised (IES-R), a measure of subjective distress, will be used to identify people experiencing a range of psychological distress during the pandemic. It is anticipated that 10% of the world's population will experience post-traumatic stress disorder due to the pandemic.<sup>19</sup> Participants for a qualitative substudy will be selected using IES-R scores by applying a combination of maximum variation in these scores as well as extreme case purposive sampling strategies. The aim is to have 50% gender representation as well as other demographics reflected in the interview sample, including ethnicity, education, socioeconomic status and using the full age range of those surveyed. We expect 30–40 participants will participate in the interviews.<sup>20</sup>

### Patient and public involvement

The participants in this study were not involved in the development of the research question or design of this study, recruitment or conduct of the study. We will disseminate our findings through news blasts and presentations to participants, policymakers and the community.

### Survey item development

The ICF classification of body structures and functions, activities, and participation as well as personal and contextual factors were used to consider various items to be included in the survey. These items were developed based on the research team's knowledge and expertise in particular areas (eg, pain, nutrition, falls, driving transportation) and where possible, by using available structured and validated questionnaires to capture items. Selected demographic and social characteristics items are presented in [table 1](#). Questions about anxiety and depression,<sup>21</sup> social support<sup>22 23</sup> and loneliness,<sup>21 24</sup> physical activity, such as

type and frequency,<sup>25</sup> and the participants' driving status are also included in the survey. Neighbourhood and life space,<sup>26</sup> and how often they had participated in out-of-home activities in the past month are also included.

### Changes in activity and participation

A global rating of change scale (GRC) was developed to capture participant-reported changes in activities (mobility, physical activity) and participation (social and personal). GRC scales are a simple and quick method to assess change in research and clinical settings and are widely accepted as an external criterion to identify people for whom important change has or has not occurred.<sup>27 28</sup> We asked participants to subjectively rate their perceived change in specific participation and mobility domains (for example, moving around their home, taking care of errands, taking care of their health) since social distancing was required due to COVID-19, using a 5-point Likert scale (much worse, a little bit worse, stayed about the same, a little bit better, much better) ([table 2](#)).

### COVID-19 awareness and change in behaviour

Questions about COVID-19 awareness and change in behaviour due to the pandemic crisis were included in the survey. We also asked if respondents had contracted COVID-19, had concerns about becoming infected with COVID-19 and concerns about seeking medical attention for reasons related to COVID-19.

### Questionnaires

[Table 3](#) describes the questionnaires included in the survey. Social and demographic characteristics of the participants were collected during baseline. The questionnaires conducted at baseline and during the follow-ups address functional, disability and mobility measures, anxiety, levels of distress, resilience, nutrition risk, pain and environmental factors. We used the ICF framework to guide the questionnaires' selections, and questionnaires have been validated with the older population.

### Survey testing and training

Field testing of the survey was completed with older adult volunteers to gauge timing and difficulty of the questions and the survey was revised accordingly. Administration of the survey was deemed to take 45–60 min, and 30 min subsequently for each follow-up wave. Please see online supplemental appendix A for more information on the instruments used in the baseline survey.

Once the design of survey was finalised, eight individuals (five undergraduate student volunteers, one MSc student volunteer, one MSc student and one PhD student) were trained to administer the survey by the study coordinator. An individual teleconferencing session (using the Zoom platform) was arranged with each survey administrator to review the study protocol and how to enter data into the online data portal (ie, REDCap). The training session included practising the consent process with the research coordinator. Different scenarios were also role-played during this session to ensure different issues that



**Table 1** Selected sociodemographic and health status characteristics of the survey participants obtained at baseline

Variables	Description
Sex	Male/female
Age (years)	≥65
Marital status	Single Live with partner Married/common law Separated/divorced Widowed
Country of birth	If not Canada, what year did you first come to Canada to live?
Racial background	White, Chinese, South Asian, black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Japanese, Korean, North American Indian, Inuit and Métis
Educational level	Less than secondary school completed Secondary school graduation but no post-secondary education Some post-secondary education Post-secondary degree/diploma
Household number	If you live with others, who do you live with?  Spouse/partner Other family member(s) Friends Roommate(s) Tenant(s)
Type of dwelling	What type of dwelling do you currently live in?  House (eg, single detached, semidetached, duplex or townhouse) Apartment or condominium Seniors' housing (eg, retirement home, senior lodges, senior residences, assisted living) Institution (eg, long-term care facility, nursing home) Mobile home, hotel, rooming house or group home
Household income	Less than \$20 000 \$20 000 or more, but less than \$50 000 \$50 000 or more, but less than \$100 000 \$100 000 or more
Assess and use of technology	Types of technology the participants have, comfortableness using technology and how often they receive calls or assess social network platforms
Fall history	Number of falls in the past year and in the last month, and worry about falling
Self-rated general health and self-rated mental health	Excellent Very good Good Fair Poor
Smoking status	Daily (ie, at least one cigarette every day for the past 30 days) Occasionally (ie, at least one cigarette in the past 30 days, but not every day) Not at all (ie, you did not smoke at all in the past 30 days)
Self-reported chronic conditions	Cataracts/glaucoma/bowel and urinary incontinence/osteoarthritis/osteoporosis/back pain/chronic pain/dementia/Alzheimer's/multiple sclerosis/stroke/transient ischaemic attack/cerebrovascular accident/traumatic brain injury/Parkinson's/heart disease/peripheral arterial disease/hypertension/angina/heart attack/aortic valve stenosis/anxiety disorder/mood disorder/clinical depression/asthma/Chronic obstructive pulmonary disease/bronchitis/emphysema/kidney disease or failure/diabetes/cancer

Continued

**Table 1** Continued

Variables	Description
Physical activity	(1) Over the past 7 days, how often did you take a walk outside your home or yard for any reason? For example, for fun or exercise, walking to work, walking the dog, etc. (2) Over the past 7 days, how often did you do any exercises, specifically to increase muscle strength and endurance, such as lifting weights or push-ups, etc? Never Seldom (1–2 days) Sometimes (3–4 days) Often (5–7 days)
Pain location and stiffness	In the last month, have you had any musculoskeletal problems or chronic pain (ex: back pain, neck pain, knee pain, stiffness)?
Self-rated pain levels	Likert scale from 0 to 10

could arise with a participant during the consent process and administering the survey (eg, asking lots of questions, confusion over study participation, mental health distress, etc).

An operations manual summarising the points discussed during training alongside detailed instructions on using REDCap, frequently asked questions and troubleshooting tips were provided to those administering the survey. The study coordinator also held biweekly Zoom meetings with the team to discuss progress and concerns.

The trained survey administrators contacted participants by telephone. Participants who provided verbal consent to participate in the full survey had their responses entered by the interviewers using REDCap web-based survey software. Participants who opted to complete the survey online received the survey through REDCap by email.

### Interview guide development and training

The interview guide has been developed to explore the lived experiences of community-dwelling older adults who were profiled based on their self-reported level of distress on the survey (ie, IES-R score). Interview questions explore perceptions of participants regarding their ability to engage in activities during the pandemic with public health restrictions in place and to reflect on changes, if any, in their ability to participate in such activities. To invoke such reflections, participants will be asked at the outset of the interviews to think of their life as though they were making a movie trilogy or three-part miniseries where the first part of their trilogy is their everyday life ‘before COVID-19’. The second part of the trilogy refers to their life after the initial lockdown in March 2020 to how they are managing at the time of survey. For the third and final part, we will ask participants to look ahead to consider what their life might be like in the post-pandemic

**Table 2** Changes in activity and participation questions since COVID-19

Questions	Scoring
I would like to know about how your perceived functional ability and daily activities have changed since social/physical distancing began due to COVID-19.	You can choose a response from the following 5-point scale
Your ability to move around in your home (such as walking, climbing stairs) has become...	1—much worse 2—a little bit worse 3—stayed about the same 4—a little bit better 5—much better
Your ability to engage in housework activity (such as dusting, washing dishes and vacuuming) has become...	
Your ability to engage in physical activity (walking, exercise, working out) has become...	
Your ability to keep in touch with others (through letters, cell phone/ phone or email) has become...	
Your ability to take care of your health (such as managing daily medications, following a diet, cooking your own meals, bathing, dressing and toileting) has become...	
Your ability to take care of your errands (such as buying groceries or taking care of finances) has become...	
Your ability to participate in the community and maintain a social life (eg, volunteer, connect with others) has become...	

**Table 3** Summary of the structured questionnaires in the survey

Questionnaires	Description
The Late-Life Function and Disability Instrument (LLFDI) <sup>28 29</sup>	The LLFDI will be used to assess function/mobility and participation, <sup>31 32</sup> consistent with the WHO and Nagi disablement frameworks. The function domain measures limitations in the person's ability to perform discrete mobility tasks or activities such as how much difficulty a person has, for example, going up and downstairs, walking a mile, putting on and taking off a jacket, etc. <sup>31</sup> The disability domain refers to a person's performance of life roles (participation). The participants' responses are based on how often they do a certain activity and to what extent they feel limited when performing a specific activity. The LLFDI has concurrent and predictive validity with other functional performance measures in older adults. <sup>18</sup> Raw scores are transformed to scaled scores from 0 to 100 with higher scores indicating better function/participation. The MCID for small changes on the LLFDI overall function component is 2 points out of 100, and 5 points for substantial change. <sup>17</sup>
EuroQol 5D-5L (EQ-5D-5L) <sup>33 34</sup>	The EQ-5D-5L is a generic instrument for describing health status. It defines health in terms of five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. <sup>33 34</sup> The response options are of five levels, from no, slight, moderate, severe, to extreme problems. The scale has shown adequate content and face validity. <sup>34</sup>
Impact of Event Scale (IES) <sup>35</sup>	The IES is widely used to assess a variety of traumas. <sup>36</sup> The scale has adequate test-retest reliability ( $r=0.87$ ), with adequate construct, content and convergent validity with a variety of other measures of distress. <sup>35</sup>
Brief Resilience Scale (BRS) <sup>37</sup>	The BRS comprises 6 items, each rated on a 5-point scale (1–5), with higher scores reflecting greater resilience. <sup>37</sup> The BRS has shown acceptable internal consistency, reliability and concurrent validity as an instrument to measure resilience in community-dwelling older adults. <sup>37–39</sup>
Seniors in the Community <sup>40</sup> : Risk Evaluation for Eating and Nutrition (SCREEN-8)	The SCREEN-8 is a valid and reliable screening tool to detect nutrition risk in community-dwelling older adults and is widely used in national surveys. <sup>41 42</sup> The instrument is composed of 8 questions, weight change (ie, loss or gain), appetite and swallowing difficulty and the total score ranges from 0 to 48. If the score is <38, it indicates that a person is positive for nutrition risk. <sup>40</sup>
Musculoskeletal pain <sup>43 44</sup>	The Numeric Pain Scale is a valid and reliable tool to evaluate musculoskeletal pain levels. Participants are asked to rate their level of pain on a scale from 0 to 10 where 0 is no pain and 10 is worse pain possible.

MCID, minimally clinically important difference.

period. This trilogy approach has been used successfully to examine changes in daily life following a major and unexpected personal issue, such as being diagnosed with a life-threatening illness, where such circumstances can disrupt or challenge a person's ability to engage in established activities and daily routines.<sup>29</sup>

The aim of the interviews in the current study is to further understand why some community-dwelling older adults have been able to more easily navigate the circumstances imposed by the pandemic, whereas others had more difficulty. The interview guide was piloted with three older adults to ensure the clarity of the questions and estimated time required for participation. Two research assistants have been trained to conduct the interviews, which included reviewing the interview guide, consent process and role-playing potential challenges that might arise. A manual was created and provided interviewers with an overview of key information required to undertake this qualitative study. Each interviewer has given a copy of this manual.

Survey respondents who affirmed their interest in being involved in other research studies and who meet criteria for sample selection as described above will be contacted by telephone to ask about participating in the interview study. Those who verbally consent will have an

interview booked at a time that is convenient for them and the researcher. The interview will take approximately 45–60 min. Interviews will be conducted by trained members of the research team by telephone or video-conference (ie, Zoom) and are expected to be conducted in the months of March, April and May of 2021. Interviews will be audio-recorded and professionally transcribed. The transcriptionist signed an oath of confidentiality which was provided to the ethics board in a study update.

### Data analysis

Descriptive statistics, means with SDs and percentage frequencies will be calculated for all participants' characteristics and survey responses. Associations between participant characteristics and responses to COVID-19 questions will be examined using  $\chi^2$  tests, t-tests and repeated measures. Analysis of variance will be used to examine changes in mobility and in participation over time. Multivariate linear regression models will be used to examine the factors associated with function and disability scores. IBM SPSS V.26 will be used for analysis and statistical significance will be set at  $p<0.05$ .

For the interviews, the data will be analysed using descriptive phenomenology, as per Colaizzi's<sup>30</sup> recommended approach, consisting of seven steps involving

two investigators from the research team: (1) participant descriptions of the phenomenon are examined; (2) significant statements that pertain to the phenomenon are extracted; (3) meanings for these significant statements are identified; (4) categorising these statements into clusters of themes across participants; referring back to original transcriptions for validation and comparing across participant; (5) creating overarching descriptions of the phenomena that may involve bridging of themes and emerging conceptualisations; (6) validation findings, by returning to some participants to ask how the findings compare with their lived experiences (ie, member checking); and finally, (7) incorporating any changes offered by participants, where appropriate. When no new information emerges from analysing the interviews, the two investigators will meet to determine if data saturation has been achieved. The final thematic framework will also be audited by another investigator from the research team (EV) who is not directly involved in data collection or coding.

### Data management

All data will be saved on REDCap which is housed on McMaster University network servers and requires a user name and password to access which can only be granted by the study coordinator. Only the investigators will have access to the data. Each participant was assigned a unique identifier and all data sources will be de-identified and coded with this unique identifier. The interview recordings will be transcribed verbatim and stripped of identifying information and stored on a network server at the university that is also password protected.

### Ethics and dissemination

The Hamilton Integrated Research Ethics Board of McMaster University approved this study on 4 May 2020 (2020-10814-GRA). Informed consent is obtained by phone prior to the commencement of the questionnaire. Participants are advised that they can receive a copy of the consent form via email or mail for their records. For the qualitative interviews, respondents on the survey who consented to be contacted for future studies and who meet sampling criteria will be contacted by phone to receive information about the purpose of the interview, the process of the interviews by telephone or through online video-conference (Zoom), potential risks and benefits of participating, consideration of participant confidentiality, voluntary participation and to confirm inclusion criteria. Prior to the interview, the participant will be sent a copy of the consent form either by email or by regular mail.

Findings from this study have the potential to inform our understanding of interventions, including community resources and strategies, that could be put in place to support community-dwelling older adults during COVID-19 and beyond, particularly if another major issue, such as a future pandemic, were to arise. Results from both the survey and interviews will deepen our understanding of the lived experiences of community-dwelling older adults during the

pandemic and the factors that have influenced their ability to manage their everyday activities and mobility under these challenging circumstances. Outcomes will be shared with the academic community through peer-reviewed publications, webinar, as well as national and international conference presentations, including posters.

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