***Journal of Aging and Physical Activity*, 2019, 27, 489-502**
https://doi.org/10.1123/japa.2018-0137

Human Kinetics
ORIGINAL RESEARCH

Men on the Move: A Randomized Controlled Feasibility Trial of a Scalable, Choice-Based, Physical Activity and Active Transportation Intervention for Older Men

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We conducted Men on the Move, a 12-week randomized controlled feasibility trial of a scalable, choice-based, physical activity (PA) and active transportation intervention. Participants were community-dwelling men aged 60 years and older ($n = 29$ intervention [INT] and $n = 29$ waitlist control [CON]). Trained activity coaches delivered: (a) one-on-one participant consultations to develop personal action plans for PA and active transportation, (b) monthly group-based motivational meetings, (c) weekly telephone support, (d) complimentary recreation and transit passes, and (e) pedometers and diaries for self-monitoring. Men on the Move demonstrated high rates of recruitment, retention, and intervention adherence. INT chose a variety of group-based and individual PAs and destinations for their personal action plans. At 12 weeks, INT achieved more steps, moderate–vigorous PA, and energy expenditure than CON. INT was also more likely to take transit and meet national guideline levels of PA. At 24 weeks follow-up, INT benefits were sustained for moderate–vigorous PA and energy expenditure.

***Keywords*:** active travel, health promotion, mobility, older adult

Physical activity promotes mobility and independence (Pahor et al., 2014), helps to prevent and manage a variety of chronic diseases (Lee et al., 2012), reduces the risk of falls and related injuries (Gillespie et al., 2012), and enhances physical, mental, and social health (Bauman, Merom, Bull, Buchner, & Fiatarone Singh, 2016) of older adults. Despite the numerous and irrefutable health benefits attributed to PA, we are in the midst of a pandemic of physical inactivity (Das & Horton, 2016). Currently, >90% of older Canadians are physically inactive and do not achieve the national guideline of ≥150 min of moderate–vigorous physical activity (MVPA) per week (Colley et al., 2011). Adherence to national physical activity guidelines is similarly low among older adults in the United States (Troiano et al., 2008) and United Kingdom (National Health Service, 2011). Globally, physical *inactivity* is the fourth leading risk factor for premature mortality (World Health Organization, 2009), and it exerts an enormous burden on health care systems (Ding et al., 2016; Lee et al., 2012). As the population ages, there is an urgent need to develop physical activity promotion programs for older adults (Tremblay et al., 2011) that are not only effective but also scalable, so that they have potential to improve population health.

Traditionally, it has proved particularly challenging to reach and engage older men in healthy lifestyle and disease prevention programs (Caperchione et al., 2017). Within men's health research, reports on effective health promoting programs for young to middle-age men have emerged (Caperchione et al., 2017; Gough, 2013; Hatchell, Bassett-Gunter, Clarke, Kimura, & Latimer-Cheung, 2013; Hunt et al., 2014). Men have unique barriers to, and facilitators of, physical activity. Physical activity preferences are situated within and shaped, in part, by sex, gender, masculinities, and age (Caperchione et al., 2017). As a result, physical activity promotion in older men is likely to be most effective and scalable when it addresses their unique needs, interests, values, and motivations. However, it remains that very little is known about how to effectively design and scale physical activity strategies for older men.

Among evidence-based physical activity promotion programs, choice-based approaches successfully improved physical activity of older adults when delivered by research teams (Stewart et al., 1997) and more importantly, by community organizations (Stewart et al., 2001, 2006). Choice-based, flexible models allow programs to be tailored to individual activity preferences, motivations, health status, physical abilities, and financial and social resources. These attributes form the central tenets of scalability (Milat, King, Bauman, & Redman, 2013).

Active transportation involves substituting motorized modes of daily transportation (e.g., driving) with active modes of transportation (e.g., walking, cycling; van Heeswijck et al., 2015). There is compelling evidence that public transportation (e.g., riding the bus) is a form of active transportation, as it provides opportunities for physical activity, such as walking, before and after trips (Davis et al., 2011; Ding & Gebel, 2012; Morency, Trepanier, & Demers, 2011; Rissel, Curac, Greenaway, & Bauman, 2012). Importantly,

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active transportation may be one of only a few practical options for older men to maintain their mobility when they stop driving (Kim, 2011). Previously, training on personal travel planning for older adults led to increased bus use (Stepaniuk, Tuokko, McGee, Garrett, & Benner, 2008). Thus, provision of transit passes and personal travel planning may be especially effective to encourage public transit use; however, this combination has not been evaluated previously.

Our primary aim was to assess feasibility of "Men on the Move"—a scalable, choice-based, physical activity and active transportation promotion model for older men. Our specific objectives were to (a) estimate rates of participant recruitment and retention, (b) estimate rates of intervention adherence, and (c) obtain initial estimates of intervention effect and variability on health outcomes of interest, including physical activity, active transportation, and mobility. Our findings will be used to guide design of future studies that seek to determine effectiveness and scalability of physical activity interventions for older adults.

Methods

Trial Design and Setting

Men on the Move was a parallel group, 1:1, randomized, controlled, single-blinded (outcome assessors), feasibility trial of a 12-week choice-based physical activity and active transportation model (ClinicalTrials.gov identifier: NCT02527655). The physical activity intervention components were similar to those used in the Community Healthy Model Program for Seniors (CHAMPS; Stewart et al., 1997). Men on the Move differed from CHAMPS by its focus on older men and by the addition of novel intervention components that were designed to promote active transportation, including transit training, personal travel planning, and provision of complimentary transit passes. Reporting of this trial followed CONSORT guidelines.

The trial had three primary data collection points: a baseline assessment (T0), a 12-week follow-up assessment at intervention end (T1), and a 24-week follow-up (T2). The study was conducted in Vancouver, BC, Canada. In 2016, Vancouver had a population of 631,500, and its metropolitan area has a population of 2.5 million (Statistics Canada, 2017). Of the 2.5 million residents in Metro Vancouver, 15.5%, or 387,000 people, are 65 years and older. We partnered with four community centers in Vancouver who were trained to assist with intervention delivery. We targeted recruitment throughout the Metro Vancouver region with an emphasis on the City of Vancouver.

Participants

We determined eligibility by a standard telephone screening interview. Community-dwelling men were included if they were at least 60 years of age, wanted to be more physically active, had not participated in any strength training or aerobic exercise classes in the past 3 months, and did not have plans to be out of town for ≥7 days during the study. Men who answered "Yes" to any follow-up question about a medical condition on the Physical Activity Readiness Questionnaire Plus (Warburton, Jamnik, Bredin, & Gledhill, 2018) were required to obtain written permission to participate from a physician before enrolling; the study reimbursed for any associated costs. Following T0 assessments, men were randomly assigned to intervention (INT; 12-week choice-based physical activity and active transportation intervention) or waitlist control (CON; no intervention for first 12 weeks, then offered intervention), as described below.

The study was approved by the research ethics boards of the three participating institutions (Simon Fraser University, University of British Columbia, and Vancouver Coastal Health Research Institute). Eligible individuals received study information and the consent form through e-mail following screening and reviewed them in-person with the study coordinator at the T0 assessment. All participants provided written informed consent.

Recruitment

We recruited participants over 6 weeks in August and September, 2015. We placed advertisements in two community newspapers; sent recruitment e-mails to relevant groups (e.g., health professional associations, university alumni and retirement associations, and disease foundations); displayed posters in neighborhood associations, senior's centers, public libraries, community centers, and health care centers; and advertised the study by word-of-mouth through older adult certified fitness instructors.

Measures

Participants completed a 2-hr in-person T0 assessment between September 15 and October 2, 2015. T0 assessments included questionnaires, physical measurements, subjective (by questionnaire) and objective (by accelerometer) measures of physical activity, and self-report of active transportation (by travel diary). At intervention end, we completed 1.5-hr in-person T1 assessments (12-week follow-up) between January 8 and 18, 2016. As before, we administered questionnaires, took physical measurements, and assessed physical activity and active transportation. At 24 weeks (12 weeks after intervention end), we repeated the 1.5-hr in-person follow-up assessments (T2) between April 4 and 14, 2016 for CON and between April 18 and 25, 2016 for INT. Assessments were conducted at the partner community centers in Vancouver or our research center (Centre for Hip Health and Mobility), per participant preference. Participants received a $20 honorarium at each assessment.

Descriptive measures. Demographic information was ascertained by questionnaire and included age, birthplace, ethnicity, marital status, living arrangement, education, employment status, household income, home ownership, duration lived in current residence and neighborhood, driver's license, and access to a car. Participants self-reported degree of difficulty walking one quarter of a mile outside on level ground or up 10 steps without resting; any difficulty on either task indicated mobility limitation (Visser et al., 2005). Participants also reported presence of and reasons for limitations in getting out and about in their neighborhood, whether they liked walking outside, confidence walking in their neighborhood, weekly physical activity, and whether they had fallen in the past 6 months. Medical history was assessed using the Functional Comorbidity Index (Groll, To, Bombardier, & Wright, 2005). Fear of falling was assessed by the Falls Efficacy Scale (Yardley et al., 2005), and physical fatigability by the Pittsburgh Fatigability Scale (Glynn et al., 2015). Height (m) was measured using a mobile stadiometer (Seca 217; Seca North America, Chino, CA), and weight (kg) was measured using a mobile digital scale (Seca Bella 840; Seca North America). Body mass index (kg/m^2) was calculated.

Primary outcome: Feasibility. We set predetermined feasibility targets. Specifically, to achieve our primary goal of determining rates of participant recruitment, retention, and adherence to the intervention, we defined success for recruitment as enrolling 50% of individuals screened. We defined success for retention in the trial as 80% of participants completing the final T2 assessment (Ashe et al., 2015), as it would not be feasible to plan, fund, and implement a large-scale trial if loss to follow-up over 24 weeks was greater than 20%. We defined success for adherence to the intervention as 60% of participants attending each group-based motivational meeting and a one-on-one consultation, and at least six of 12 weekly telephone check-ins. This level is consistent with adherence to physical activity interventions in trials of older adults and recommendations from implementation science experts (Durlak & DuPre, 2008; Pahor et al., 2014).

Secondary outcomes: Physical activity, active transportation, and mobility. We assessed physical activity behavior, active transportation behavior, and measures of mobility at T0, T1, and T2.

Physical activity: Physical activity was assessed objectively using ActiGraph GTX3+ (ActiGraph LLC, Pensacola, FL) triaxial accelerometers worn at the hip during waking hours for 7 consecutive days at each measurement time point (removing them only for sleep and before any contact with water). We collected the following outcomes from accelerometers: MVPA (min/day), moderate physical activity (min/day), light physical activity (LPA; min/day), sedentary behavior (min/day), and step count (steps/day). Sedentary behavior was normalized to total daily wear time (percentage of day). We reintegrated raw data (collected at 60 Hz) to 60-s epochs. Data were excluded if they showed 90 min of continuous zeroes (interpreted as nonwear time). Each participant's accelerometry data had to include at least 3 days with at least 8 hr of wear time on each day to be included in the analysis. Data from valid wear days were averaged so outcomes could be expressed per day. Based on previous research (Ashe et al., 2015; Freedson, Melanson, & Sirard, 1998; Gorman et al., 2014), we used the following cut points to interpret intensity: <99 counts/min (cts/min) as sedentary time, 100–1,951 cts/min as LPA, 1,952–5,724 cts/min as moderate physical activity, ≥5,725 cts/min as vigorous physical activity.

Physical activity was also assessed using the CHAMPS questionnaire, a valid and reliable self-report tool for older adults (Stewart et al., 1997). We assessed the following outcomes from the CHAMPS questionnaire: energy expenditure (kcal/week), number of all physical activities (#/week), and number of MVPAs (#/week).

Active transportation: Travel behavior was assessed using a self-report 7-day travel diary (Chudyk et al., 2015). Participants were asked to record all trips, where a trip was defined as one-way travel between two destinations. For each trip, participants were asked to record the mode of transportation. Data collected from travel diaries were deidentified and processed by a research assistant who was not aware of group assignments. From each travel diary, we calculated weekly number of walking trips, transit trips (where travel mode was recorded as transit or transit + walking), active trips (sum of trips where mode was recorded as walking, transit, biking, or some other active mode), car trips, and total trips. If a diary page was crossed out, or it was noted that no trips outside the home were taken for a particular day, the number of trips was set to 0 for that day. If a page was left blank, with or without the date entered, data were considered missing (Chudyk et al., 2015).

Mobility: We administered the Life-Space Assessment (Baker, Bodner, & Allman, 2003) by interview to assess extent, frequency, and independence of movement in the past month across five levels (ranging from one's bedroom to outside one's town). We calculated the composite life-space score that ranged from 0 (restricted to one's bedroom) to 120 (daily travel outside one's town without assistance) by summing individual level scores (Mackey et al., 2016). We assessed lower extremity physical function with the short physical performance battery (SPPB), which included tests of gait speed, standing balance, and leg strength (Guralnik et al., 1994; Pahor et al., 2014). Specifically, participants performed two usual-pace 6-m walk trials; time from the fastest trial was converted to gait speed (m/s). Standing balance was measured by recording the time (up to 10 s each) that each participant could hold side-by-side, semitandem, and tandem stands. Leg strength was measured by recording time to complete five repeated chair stands with the instruction to stand up and sit down without using arms as fast as possible. Each test was scored from 0 to 4, and scores were summed to produce an overall SPPB score ranging from 0 to 12. Finally, we assessed mean 6-m gait speed (m/s) from two repeated trials.

Randomization

Randomization was performed by the study coordinator using a web-based randomization tool (www.randomization.com). Eligible participants ($N = 58$) were assigned 1:1 to either the intervention (INT) or waitlist control (CON) group by random allocation. As this was a feasibility study, no stratification was used. Randomization was not performed until all T0 assessments were completed (including 7-day accelerometer and travel diary data collection) to ensure the measurement team was blinded to group assignments. The study coordinator informed all participants of their assignments.

Blinding

Group assignment was concealed to outcome assessors during T0, T1, and T2 assessments. Furthermore, only core members of the research team had access to participants' unique study identification codes, names, and group assignments.

Intervention Group (INT)

After T0 assessments, participants randomized to INT received a 12-week choice-based physical activity and active transportation intervention. The physical activity component was informed by CHAMPS (Stewart et al., 1997); the active transportation component was a novel addition. The intervention was delivered by activity coaches, certified fitness leaders who had specific training to work with older adults. Activity coaches completed approximately 12 hr of centralized Men on the Move-specific training at our research center (Centre for Hip Health and Mobility). In brief, participants were offered and asked to participate in the following:

a. Group motivational meetings: Three monthly 60-min group motivational meetings led by an activity coach. These motivational meetings were designed to provide knowledge, the opportunity to engage in interactive activities with group members, a sense of belonging to a program, social interaction, and the possibility of meeting others with whom to be physically active. The first group motivational meeting was the kickoff event for the intervention and focused on the health benefits of physical activity including (a) the importance of physical activity to the health and functioning of older adults, (b) safe physical activity for older adults, (c) that physical activity need not be strenuous to be beneficial, and (d) that physical activity can be fun and provide social opportunities. The second group motivational meeting focused on active transportation, including (a) definitions, (b) benefits, (c) obstacles and solutions to active transportation, and (d) specific training on how to use mobile devices to access websites and applications to plan trips to destinations using different modes of active transportation. The third group motivation meeting focused on maintenance of regular physical activity, including (a) recognizing and overcoming personal obstacles, (b) short- and long-term benefits, and (c) planning to continue with physical activity.

b. One-on-one consultation: A single 60-min one-on-one consultation with their activity coach was provided for participants to develop a personal action plan for physical activity and a personal travel plan. At the beginning of the consultation, the activity coach reviewed the participant's current levels of physical activity and personal barriers and solutions to participating in physical activity, helped them identify short- and long-term physical activity goals, and helped them to complete their *personal action plan for physical activity*. This was intended to leverage existing community-based options for physical activity, as well as home-based endeavors, all of which were tailored to the participants' interests, resources, abilities, health, income, and transportation options to promote sustainability over the long-term. The personal action plan specified what, where, when, how, and with whom physical activities would take place. The activity coach encouraged participants to work toward undertaking physical activity three to five times per week in a progressive manner to minimize risk of injury. Activity coaches then inquired about current and past use of active modes of transportation including walking and public transit, as well as personal barriers and solutions to active transportation. Activity coaches also helped participants to complete their *personal travel plan*, which specified why, how (e.g., by walking, biking, or taking public transit), with whom, and when participants would travel to reach their chosen destinations of interest. Participants were encouraged to identify possible barriers to their travel plan and possible solutions to overcome those barriers. They were also encouraged to add new destinations to their personal travel plan after 6 weeks. Participants and activity coach jointly signing off on their personal physical activity and active travel plans.
c. Transit training: A single 60-min group transit training workshop was led by a community outreach staff member of the local transit authority, Translink. This session covered the basics of using transit, planning routes, and paying for trips.
d. Activity logs: Daily, participants were asked to record the type, intensity, location, and duration of each physical activity they participated in, as well with whom they completed the activity (alone, with a friend, and with a group), and the mode of transportation they used to get to and from the location of their activity. They were also asked to record their daily step counts from their pedometer.
e. Pedometer: For self-monitoring, participants received a pedometer (Omron HJ-112; Omron Corp, Kyoto-Shi, Japan) at their one-on-one consultation and were instructed to record their daily step count in their activity log.
f. Written physical activity resources: Participants received a participant manual containing a variety of written materials, including national physical activity guidelines for older adults, a table of rating of perceived exertion to help them understand different activity intensities, and a variety of handouts. The research team also distributed a newsletter during the intervention, which contained healthy living tips.
g. Weekly telephone support: Activity coaches conducted weekly 15-min telephone check-ins to explore the participant's health, well-being, and progress with their personal action plans for physical activity and travel. These provided an opportunity for participants to find solutions to obstacles that might otherwise limit success in accomplishing goals set out in their action plans.
h. Incentives: Participants received complimentary passes to a community fitness center of their choice or had the costs of selected courses covered. Activity coaches were available to help facilitate registration in community fitness center courses following one-on-one consultations. Participants were also provided with a complimentary transit pass for the duration of the intervention to encourage active transportation by use of public transit.
i. iPads: Participants received training on the basic operation of an iPad during their T0 assessment and took home an iPad Mini 2 (Apple Inc., Cupertino, CA) for use throughout the 12-week intervention. An application prompted participants to enter their step count twice daily (morning and evening), and participants were encouraged to use the iPad Mini to support their active transportation pursuits.

Four partner community centers provided space for delivery of intervention components (e.g., group and one-on-one meetings) and offered a wide variety of physical activity programs for older adults, which participants could choose from. The intervention is described in TIDieR checklist format (Hoffmann et al., 2014) in Supplementary Table S1 (available online). The specific behavior change techniques used in each component of the intervention are listed according to the CALO-RE taxonomy (Michie et al., 2011) in Supplementary Table S2 (available online).

Waitlist Control Group (CON)

For the duration of the 12-week intervention, the CON group did not receive any information regarding the importance of physical activity or active transportation. At the end of 12 weeks, the intervention was offered to the control group. Like the INT group, the CON group received an iPad at their T0 assessment, but they were not prompted to record step counts or encouraged to use the iPad to support active transportation behavior. At the midpoint of the study (6 weeks), we held an iPad skills workshop for the CON group to maintain contact with participants and promote attendance at the T1 measurement sessions. This workshop covered how to download applications, browse the Internet, connect to Wi-Fi, and use e-mail. This workshop did not cover topics related to physical activity, active transportation, or healthy living.

Adverse Events Monitoring

We asked all study participants to report any adverse events or significant changes to their health to the study coordinator. In addition, we asked activity coaches to report any concerns about participant health to the study coordinator. At the one-on-one consultation, each participant and their activity coach reviewed the Physical Activity Readiness Questionnaire Plus that was originally completed during telephone screening. If a participant's health changed in a way that might influence their participation in physical activity, we asked them to obtain physician approval before continuing with their action plans.

Sample Size Planning

We aimed to recruit 60 participants (30 per group). A formal sample size calculation was not appropriate because the primary outcomes were concerned with feasibility, specifically recruitment, retention, and adherence (Arain, Campbell, Cooper, & Lancaster, 2010). Rather, our sample size was justified by the following rationale. First, one objective of the study was to estimate intervention effects and variability on health outcomes, which would allow more informed sample size planning for a future large-scale randomized controlled trial. To estimate variability with adequate precision, Whitehead et al. (2016) recommended 25 participants per treatment arm for standardized effect sizes that are small (0.2). Based on our previous work, we also estimated 10% loss of participants over the 12-week intervention, so we aimed to recruit 30 participants per group. Second, we felt that 30 participants per group were large enough to inform us about the feasibility of recruitment, retention, and adherence.

Statistical Analysis

Data were summarized as mean (*SD*) for normally distributed continuous variables, median (25%tile–75%tile) for skewed continuous variables, and *n* (%) for categorical variables. To estimate *intervention effects* (INT vs. CON) at T1 in normally distributed continuous physical activity outcome measures, we used linear regression models with the T1 value as the dependent variable, group as the independent variable, and the T0 value as a covariate; we reported mean differences with corresponding 95% confidence intervals (CIs). To estimate *intervention effects* in skewed continuous outcomes (vigorous physical activity and SPPB score), we used the Mann–Whitney–Wilcoxon test. To estimate *intervention effects* in the odds of dichotomous physical activity and active transportation outcome measures at T1, we used logistic regression with adjustment for T0 values; we reported odds ratios with 95% CIs. To estimate *intervention effects* in the rates of count-based active transportation outcome measures (e.g., # trips/week) at T1, we used negative binomial regression adjusting for T0 values; we reported rate ratios and corresponding 95% CIs. Where a 95% CI did not cross one sensitivity of the outcome to a difference in intervention arms was suggested.

To examine *retention of intervention effects* within the intervention group, we used paired samples *t* tests to compare normally distributed continuous outcome measures at T2 versus T1 as well as T2 versus T0, the Mann–Whitney–Wilcoxon test to compare skewed continuous variables at T2 versus T1 and T2 versus T0, and a two-tailed Chi-square test to compare dichotomous physical activity and active transport outcomes at T2 versus T1 and T2 versus T0. We considered (a) presence of difference between T0 and T2 and/or (b) lack of difference between T1 and T2 as evidence of effect retention. All analyses were conducted using R software (R Foundation for Statistical Computing, Vienna, Austria).

Results

Recruitment and Screening

The Men on the Move Study was conducted August 2015 through May 2016 (includes recruitment and T2 assessments). In total, 94 individuals responded to study advertisements (Figure 1). Of these contacts, 60 (64%) were by phone and 34 (36%) were by e-mail. The most successful methods of recruitment were newspaper advertisements ($n = 32$, 34%), e-mail advertisements ($n = 22$, 23%), friend and family referral ($n = 11$, 12%), and posters ($n = 8$, 9%). Following telephone screening of these 94, 57 (62%) individuals were eligible immediately; another 15 (16%) were asked to obtain physician approval based on their responses to the Physical Activity Readiness Questionnaire Plus, and eight obtained approval. Thus, 65 individuals met study eligibility criteria. Of these, 58 (62% of 94 initial respondents) enrolled, provided informed consent, and completed a baseline assessment.

Baseline Participants Characteristics

At T0, participants were aged 71.9 (6.6) years (mean [*SD*]: age range = 61.0–87.6 years), with body mass index of 27.7 (4.8) kg/m^2 (Table 1). Most were of European descent (62%), with some university education or greater (67%), and were currently retired or not working (76%). Among the 50% born outside of Canada, average length of stay in Canada was 46.0 (9.6) years. Most men were married or living with a common law spouse (64%), 31% reported living alone. On average, men had lived in their current neighborhood for 23.3 (17.2) years, and most owned their residence (60%), had a driver's license (97%), and access to a vehicle (91%). The most common reasons for feeling limited in getting out and about in one's neighborhood were health reasons (16%) and personal finances (12%); 35% reported an annual household income <$25,000, and 26% reported $25,000–$49,999. The majority (76%) said that they somewhat or very much liked to walk outside, and 86% felt somewhat or very confident walking in their neighborhood.

Thirty-five percent of men reported that they did not achieve 30 min or more of physical activity on any day in the past week. Difficulty walking one quarter mile outside or walking up 10 steps without resting, indices of mobility limitation, were uncommon (16% and 8%, respectively). Men reported low levels of physical fatigability (17.7 [8.8] out of 50) and strong levels of falls efficacy (19.0 [17.0–23.8]) on a scale of 16–64, where higher scores indicate greater fear of falling. Of the chronic medical conditions we ascertained, the most prevalent were arthritis (26%), diabetes (16%), and anxiety/panic disorders (12%).

Randomization and Retention

Following T0 assessments, 29 participants were randomized to each of INT and CON groups (Figure 1). At 12 weeks, 3/58 (5%) participants were lost to follow-up, whereas 55/58 (95%) participants completed the T1 assessment, including 27/29 (93%) INT and 28/29 (97%) CON participants. Of these 55, 44 (80%) provided valid accelerometry data, and 48 (87%) provided valid travel diary data. By 24 weeks, 7/58 (12%) participants were lost to follow-up, whereas 51/58 (88%) completed the T2 assessment, including 25/29 (86%) intervention and 26/29 (90%) control participants. Of these 51, 43 (84%) provided valid accelerometry data, and 47 (92%) provided valid travel diary data.

Intervention Adherence

Among INT, 28 (97%) attended Motivational Meeting #1, 20 (69%) attended transit training, 28 (97%) attended a one-on-one meeting with an activity coach, 25 (86%) attended Motivational Meeting #2, and 26 (90%) attended Motivational Meeting #3. For the scheduled weekly telephone check-ins with their activity coach, 11 (38%) completed all 12 check-ins, 13 (45%) completed most (8–11) check-ins, four (14%) completed some (four to seven) check-ins, and one (3%) completed no check-ins. For the weekly activity logs, 13 (45%) completed activity logs for all 12 weeks, nine (31%) completed activity logs for 8–11 weeks, one (3%) completed activity logs for 4–7 weeks, and 6 (21%) did not complete any activity logs.

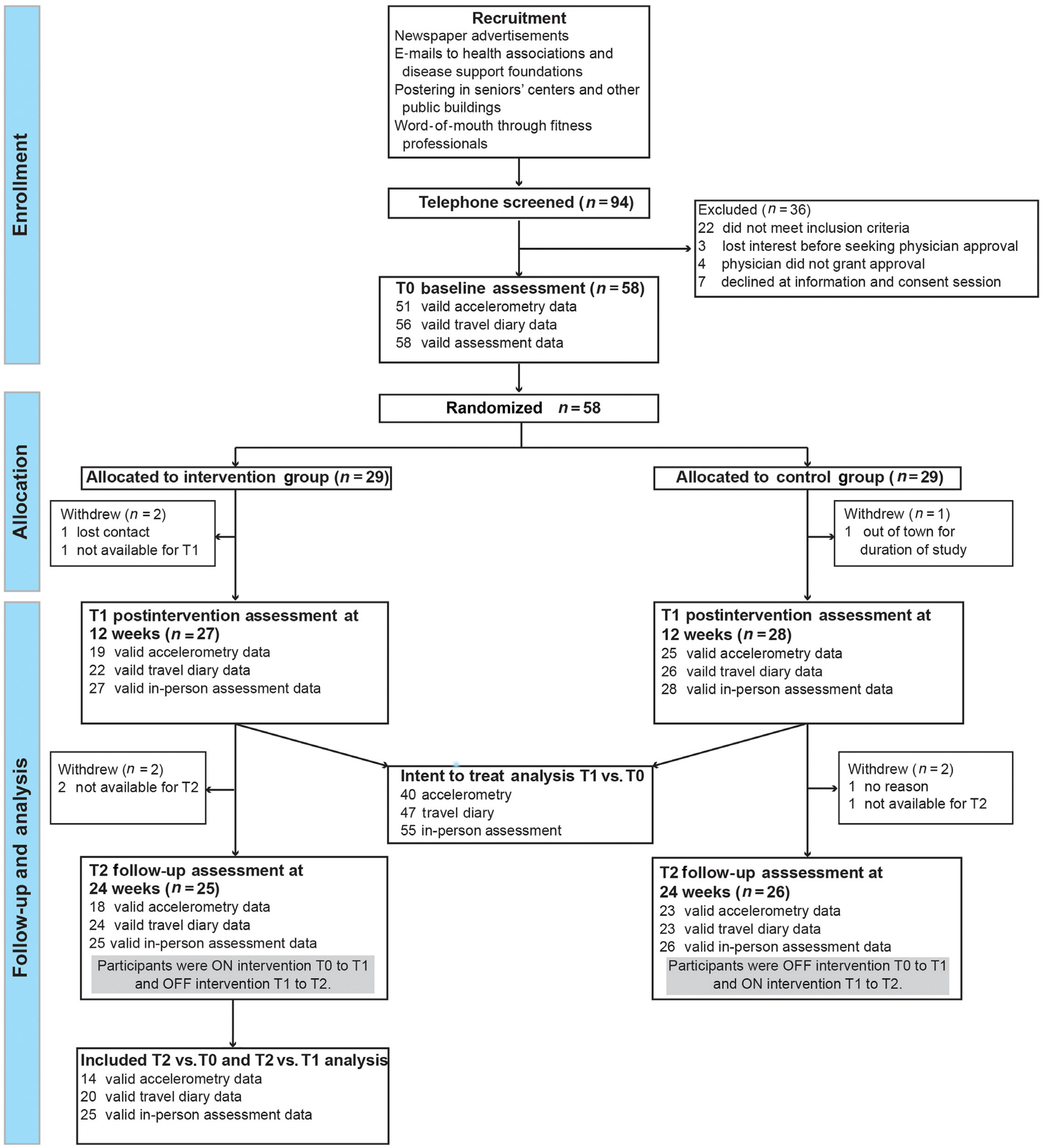

Figure 1 — Participant flow chart for the Men on the Move study following the consolidated standards of reporting trials guidelines.

Physical Activity and Active Transportation Choices

Men assigned to INT chose a wide range of physical activities for their personal action plans (Table 2; choices of CON presented for comparison). Among group-based activities, the most commonly chosen activities at community centers were group exercise classes ($n = 14$, 50%), dance ($n = 5$, 18%), and yoga ($n = 2$, 7%), and at locations other than community centers were walk-to-run programs ($n = 3$, 11%) and golfing ($n = 2$, 7%). Among individual

Table 1 Baseline Characteristics of Participants in the Men on the Move Study

	Intervention ($n = 29$)	Waitlist control ($n = 29$)	Overall ($N = 58$)
Age (years)	71.8 (6.5)	72.0 (6.9)	71.9 (6.6)
Weight (kg)	86.0 (17.2)	79.6 (14.8)	82.8 (16.3)
BMI (kg/m^2)	28.4 (5.0)	26.9 (4.6)	27.7 (4.8)
Ethnicity, *n* (%)			
European	16 (55.2)	20 (69)	36 (62.1)
Chinese	5 (17.2)	7 (24.1)	12 (20.7)
other	8 (27.6)	2 (6.9)	10 (17.2)
Foreign born, *n* (%)	18 (62.1)	11 (37.9)	29 (50)
Time in Canada among foreign born (years)	46.1 (10.6)	45.9 (8.4)	46 (9.6)
Live alone, *n* (%)	7 (24.1)	11 (37.9)	18 (31)
Married/common law, *n* (%)	20 (69)	16 (55.2)	37 (63.8)
Driver's license, *n* (%)	27 (93.1)	29 (100)	56 (96.6)
Access to car, *n* (%)	27 (93.1)	26 (89.7)	53 (91.4)
Some university education or greater, *n* (%)	19 (65.5)	20 (69)	39 (67.2)
Time in current neighborhood (years)	20.8 (15.8)	25.8 (18.5)	23.3 (17.2)
Own residence, *n* (%)	18 (62.1)	17 (58.6)	35 (60.3)
Somewhat/very much like to walk outside, *n* (%)	21 (72.4)	23 (79.4)	44 (75.9)
Somewhat/very much confident walking in neighborhood, *n* (%)	24 (82.8)	26 (89.6)	50 (86.2)
Difficulty walking ¼ mile, *n* (%)	7 (26.9)	1 (4.2)	8 (16.0)
Difficulty walking up 10 steps without rest, *n* (%)	4 (16)	0 (0)	4 (8.2)
Days of physical activity (≥30 min) in past week, *n* (%)			
0	9 (37.5)	8 (33.3)	17 (35.4)
1–4	11 (45.8)	12 (50)	23 (39.7)
5–7	4 (16.7)	4 (16.7)	8 (16.7)
Retired or not working, *n* (%)	26 (89.7)	18 (62.1)	44 (75.9)
Annual household income, *n* (%)			
<$25,000	9 (31)	11 (37.9)	20 (34.5)
$25,000–$49,999	8 (27.6)	7 (24.1)	15 (25.7)
>$50,000	12 (41.4)	11 (37.9)	23 (39.6)
Limited in getting out and about in one's neighborhood by, *n* (%)			
health reasons	8 (27.6)	1 (3.4)	9 (15.5)
personal finances	5 (17.2)	2 (6.9)	7 (12.1)
limited access to car	2 (6.9)	2 (6.9)	4 (6.9)
emotional reasons	1 (3.4)	3 (10.3)	4 (6.9)
caregiving or family responsibilities	3 (10.3)	1 (3.4)	4 (6.9)
other	2 (6.9)	2 (6.9)	4 (6.9)
Medical history, *n* (%)			
arthritis (rheumatoid or osteoarthritis)	9 (31.0)	6 (20.7)	15 (25.9)
diabetes (Type I or II)	5 (17.2)	4 (13.8)	9 (15.5)
anxiety or panic disorders	1 (3.4)	6 (20.7)	7 (12.1)
osteoporosis	3 (10.3)	2 (6.9)	5 (8.6)
COPD, ARDS, or emphysema	3 (10.3)	2 (6.9)	5 (8.6)
depression	2 (6.9)	3 (10.3)	5 (8.6)
congestive heart failure	4 (13.8)	0 (0)	4 (6.9)
other	8 (27.6)	1 (3.4)	9 (15.5)
Number of chronic conditions	1.83 (1.65)	1.34 (1.42)	1.61 (1.54)
Fallen in the past 6 months, *n* (%)	4 (13.8)	7 (24.1)	11 (19.0)
Pittsburgh Fatigability Scale physical score (/50)	20.2 (8.8)	15.1 (8.2)	17.7 (8.8)
Falls efficacy (16–64)	21.0 (17.0–27.0)	19.0 (17.0–21.0)	19.0 (17.0–23.75)

Note. Cells contain mean (*SD*) for normally distributed continuous variables, mean (25%tile–75%tile) for skewed continuous variables, and *n* (%) for categorical variables. BMI = body mass index; ARDS = acute respiratory distress syndrome; COPD = chronic obstructive pulmonary disease.

Table 2 Physical Activity Choices Made by Men on the Move Participants in Their Personal Action Plans

	Intervention ($n = 28$)	Waitlist control ($n = 27$)	Overall ($N = 55$)
Community center, group, *n* (%)			
exercise class	14 (50.0)	16 (59.3)	30 (54.5)
dance	5 (17.9)	7 (25.9)	12 (21.8)
tai chi	1 (3.6)	5 (18.5)	6 (10.9)
yoga	2 (7.1)	3 (11.1)	5 (9.1)
other[a]	3 (10.7)	4 (14.8)	7 (12.7)
Community center, individual, *n* (%)			
fitness center	17 (60.7)	15 (55.6)	32 (58.2)
swimming	5 (17.9)	5 (18.5)	10 (18.2)
badminton	1 (3.6)	3 (11.1)	4 (7.3)
pickleball	1 (3.6)	3 (11.1)	4 (7.3)
other[b]	2 (7.1)	4 (14.8)	6 (10.9)
Noncommunity center, group, *n* (%)			
walk-to-run program	3 (10.7)	0 (0)	3 (5.5)
golfing	2 (7.1)	0 (0)	2 (3.6)
other[c]	1 (3.6)	2 (7.4)	3 (5.5)
Noncommunity center, individual, *n* (%)			
walking	20 (71.4)	21 (77.8)	41 (74.5)
stretching and meditation	5 (17.9)	5 (18.5)	10 (18.2)
outdoor cycling	3 (10.7)	5 (18.5)	9 (16.4)
stationary cycling at home	3 (10.7)	1 (3.7)	4 (7.3)
strength training at home	2 (7.1)	3 (11.1)	5 (9.1)
other[d]	6 (21.4)	11 (40.7)	17 (30.9)

Note. Activity choices were missing for one intervention and two waitlist control participants who did not attend a one-on-one consultation with an activity coach.
[a]Includes indoor/mall walking group, chair yoga, pilates, and spin cycle.
[b]Includes ping pong, foam tennis, and volleyball.
[c]Includes aerobic disc, cardiac rehabilitation, and ice hockey.
[d]Includes hiking, canoeing, jogging, pool walking, boxing, chair exercises at home, kayaking, skating, skip rope, snow shoeing, tennis, and treadmill at home.

activities, the most commonly chosen activities at community centers were using resistance or aerobic exercise machines ($n = 17$, 61%), and swimming ($n = 5$, 18%). Choices at locations other than community centers were walking ($n = 20$, 71%), cycling outdoors or at home ($n = 6$, 21%), and stretching and meditation ($n = 5$, 18%).

Destinations most commonly selected for active transportation in personal action plans were parks ($n = 10$, 36%), cities ($n = 8$, 29%), shops/restaurants ($n = 7$, 25%), downtown Vancouver ($n = 5$, 18%), and the airport ($n = 5$, 18%; Table 3, choices of CON presented for comparison). Other less commonly selected destinations included libraries/museums, recreation centers, and family member residences. Transit was the predominant transportation mode, with 75% ($n = 21$) choosing public transit to reach at least one destination. The next most common mode was walking ($n = 2$, 7%). Men planned to travel alone to most destinations rather than with others.

Intervention Effects on Health Outcomes

Self-reported physical activity by CHAMPS. At T1, INT engaged in 7.2 more physical activities (95% CI [1.5, 13.0] per week), including 5.2 more MVPAs (95% CI [1.7, 8.6] per week), after controlling for T0 values (Table 4). Over the 12-week intervention, the number of all physical activities increased in INT from 19.9 to 26.2 per week, whereas it decreased in CON from 20.6 to 19.3 per week. The number of MVPAs increased in INT from 6.9 to 13.0 per week and increased in CON from 7.3 to 8.1 per week (Table 4). At T1, INT had 1,937 more kcal of energy expenditure from all physical activities (95% CI [290, 3,584] kcal/week), including 1,493 more kcal of energy expenditure from MVPAs (95% CI [221, 2,648] kcal/week), compared with CON, after controlling for T0 values (Table 4).

Objectively measured physical activity by accelerometry. After adjusting for T0 values, INT achieved more MVPA at T1 than CON (mean: 9.0, 95% CI [–0.21, 18.20] min/day; Table 4). This was realized almost entirely through a group difference in moderate (not vigorous) activity (mean: 8.9, 95% CI [–0.47, 18.28] min/day). Over the 12-week intervention, MVPA increased in INT from 28.5 to 32.2 min/day, whereas it decreased in CON from 27.3 to 22.4 min/day. At T1, INT accumulated 1,140 more steps (95% CI [51–2,229] per day), after adjusting for T0 values (Table 4). Over the 12-week intervention, steps decreased slightly in INT from 6,802 to 6,738 per day and decreased more substantially in CON from 6,378 to 5,265 per day. At T1, INT was 3.27 times more

Table 3 Active Transportation Destinations Chosen by Men on the Move Participants in Their Personal Action Plans

	Intervention ($n = 28$)	Waitlist control ($n = 25$)	Overall ($N = 53$)
Destination, *n* (%)			
park	10 (35.7)	9 (36.0)	19 (35.8)
cities	8 (28.6)	7 (28.0)	15 (28.3)
downtown	5 (17.9)	8 (32.0)	13 (24.5)
shop/restaurant	7 (25.0)	6 (24.0)	13 (24.5)
airport	5 (17.9)	4 (16.0)	9 (16.9)
library/museum	4 (14.3)	5 (20.0)	9 (16.9)
recreation center	4 (14.3)	4 (16.0)	8 (15.1)
family member's residence	2 (7.1)	1 (4.0)	3 (5.7)

Note. Active travel choices were missing for one intervention (did not attend the one-on-one consultation with an activity coach) and four control participants (two did not attend the one-on-one consultation with an activity coach and two declined to make an active travel plan).

likely than CON to meet national physical activity guidelines of 150 min or more per week of MVPA accumulated in bouts of 10 min or longer (42.1% vs. 16.0%; 95% CI [0.75, 16.3]; Table 4).

There were no suggested group differences at T1 in LPA (min/day), time spent in sedentary behavior (min/day or percentage of day), or MVPA (min/day) with bout duration of at least 10 min (Table 4).

Active transportation. At T1, INT was 4.24 times more likely than CON to take at least one transit trip/week (95% CI [1.19, 17.98]; Table 4). There were no suggested differences between INT and CON at T1 in rates of total trips, car trips, active trips, transit trips, or walking trips (Table 4).

Mobility. There were no suggested differences at T1 between INT and CON in composite life-space mobility score, SPPB score, or gait speed (Table 4).

Retention of Intervention Effects on Health Outcomes

Self-reported physical activity by CHAMPS. At T2, INT continued to engage in more MVPAs than at T0 (10.0 vs. 6.9/week), but fewer than at T1 (13.0/week; Table 5). By contrast, total number of physical activities at T2 did not appear to be different than at T0 (23.6 vs. 19.4/week) or T1 (26.2/week; Table 5). At T2, INT had greater energy expenditure from all physical activities than at T0 (5,162 vs. 2,627 kcal/week), and a similar amount as at T1 (5,058 kcal/week; Table 5). Similarly, at T2, INT also had greater energy expenditure from MVPAs than at T0 (3,205 vs. 1,787 kcal/week), and a similar amount as at T1 (3,031 kcal/week; Table 5).

Objectively measured physical activity by accelerometry. At T2, INT continued to achieve more MVPA than at T0 (35.9 vs. 30.3 min/day), and a similar amount as at T1 (36.0 min/day; Table 5). At T2, INT accumulated 7,842 steps/day, which did not appear different than at T0 (7,281 steps/day) or T1 (7,496 steps/day; Table 5). The proportion of INT meeting national physical activity guidelines at T2 (28.6%) was the same as at T0 (28.6%) and fewer than at T1 (50.0%; Table 5).

Active transportation. The proportion of INT taking at least one transit trip/week at T1 (60.0%) did not appear to be different from T0 (45.0%) or T1 values (65.0%; Table 5).

Discussion

This feasibility trial of the Men on the Move intervention is among few physical activity intervention programs for older men. As such, it addresses the call for physical activity intervention research to include more diverse older adult samples (Chase, 2015). Older men are largely underrepresented in physical activity intervention studies, and interventions designed specifically for older men are rare. A recent meta-analysis of 104 studies of physical activity interventions for older adults reported that women comprised 83% of study samples on average, and no interventions were designed and conducted exclusively for older men (Chase, 2015).

We observed high rates of recruitment, retention, and adherence to Men on the Move, which exceeded our predetermined targets. Specifically, 62% of individuals who responded to study advertisements ultimately enrolled in the study, 95% who enrolled returned for T1 assessments, and 88% returned for T2 assessments. During the intervention phase, attendance at one-on-one activity coach consultations was 97%, motivational meetings was ≥85%, and weekly telephone calls (at least eight of 12 calls) was 83%. The flexible nature of the intervention and our results support the scalability of our intervention and its feasibility (Thabane et al., 2010) for scale-up.

The Men on the Move intervention appeared to improve physical activity relative to control. Specifically, the intervention led to suggested increases in all self-reported and some objective measures of physical activity, with those in the INT group 3.3 times more likely to meet physical activity guidelines. Given the inextricable link between physical activity, mobility, and older adult independence (Webber, Porter, & Menec, 2010), and the common finding of decreased physical activity with age (Buchman et al., 2014), our results are encouraging. Intervention-induced increases in MVPA were exclusively the result of increased moderate-intensity activity; overall, men engaged in very small amounts vigorous physical activity before or after the intervention. Walking was the most commonly chosen activity, consistent with the notion that walking is a highly accessible and affordable activity for older adults. Although less is known about the benefits of light-intensity physical activity than MVPA, the traditional focus on MVPA may limit our understanding of the health benefits of the full range of physical activity intensities (Lee & Shiroma, 2014). Light-intensity physical activity was positively associated with self-reported health and well-being (Buman et al., 2010), and many older adults engage

Table 4 Physical Activity, Active Transportation, and Mobility Outcomes From the Men on the Move Study

	INT group		CON group		T0 adjusted group difference (INT – CON) at T1	
	T0	T1	T0	T1	Mean	[95% CI]
Physical activity						
CHAMPS[a]						
all PAs (#/week)	19.9 (10.9)	26.2 (12.4)	20.6 (17.4)	19.3 (13.9)	7.2	[1.5, 13.0]
MVPAs, (#/week)	6.9 (7.3)	13.0 (7.4)	7.3 (9.1)	8.1 (9.2)	5.2	[1.7, 8.6]
EE from all PAs (kcal/week)	3,637 (2,806)	5,058 (3,826)	3,829 (3,535)	3,313 (3,439)	1,937	[290, 3,584]
EE from MVPAs (kcal/week)	1,787 (2,312)	3,031 (2,836)	2,136 (2,803)	1,822 (2,713)	1,434	[221, 2,648]
Accelerometry[b]						
MVPA (min/day)	28.5 (21.9)	32.2 (21.4)	27.3 (19.5)	22.4 (18.4)	9.0	[–0.2, 18.2]
MVPA, ≥10 min bouts (min/day)	15.0 (18.8)	17.5 (18.4)	12.3 (14.6)	10.7 (14.4)	5.4	[–3.5, 14.4]
MPA (min/day)	27.5 (22.5)	31.5 (21.0)	26.8 (19.2)	22.1 (18.0)	8.9	[–0.5, 18.3]
LPA (min/day)	230.5 (83.9)	262.9 (91.6)	218.9 (75.0)	191.0 (66.7)	16.0	[–10.4, 42.3]
sedentary behavior (min/day)	544.0 (72.1)	548.9 (72.2)	586.9 (82.3)	596.8 (135.5)	–2.1	[–54.4, 50.1]
sedentary behavior (percentage of day)	68.3 (9.8)	69.5 (9.9)	70.6 (9.1)	73.3 (9.7)	–1.7	[–4.9, 1.5]
steps (#/day)	6,802 (3,587)	6,738 (3,371)	6,378 (2,608)	5,265 (2,536)	1,140	[51, 2,229]
					Odds ratio	[95% CI]
met MVPA guidelines (≥150 min/week in 10+ min bouts), *n* (%)	5 (29.4)	7 (41.2)	5 (21.7)	4 (17.4)	3.27	[0.75, 16.33]
Active transportation[c]					Relative rate	[95% CI]
total trips (#/day)	4.2 (1.6)	3.9 (1.4)	3.9 (1.8)	3.5 (1.4)	1.08	[0.92, 1.26]
car trips (#/day)	2.3 (2.2)	2.1 (1.6)	2.0 (1.8)	2.0 (1.6)	1.00	[0.61, 1.67]
active trips (#/day)	1.5 (1.2)	1.6 (1.2)	1.6 (1.5)	1.5 (1.3)	1.09	[0.70, 1.70]
transit trips (#/day)	0.0 (0–0.3)	0.6 (0.0–0.7)	0.1 (0.0–0.68)	0.0 (0.0–0.3)	1.67	[0.58, 4.99]
walking trips (#/day)	1.4 (1.2)	1.2 (0.9)	1.6 (1.6)	1.3 (1.1)	1.07	[0.7, 1.7]
					Odds ratio	[95% CI]
≥1 transit trip/week, *n* (%)	9 (42.9)	13 (61.9)	15 (57.7)	9 (34.6)	4.24	[1.19, 17.98]
Mobility[a]					Mean	[95% CI]
life-space mobility, /120	71.1 (19.9)	76.9 (16.7)	73.9 (20.2)	75.6 (19.3)	2.6	[–5.4, 10.7]
gait speed (m/s)	0.99 (0.21)	1.12 (0.22)	1.05 (0.19)	1.14 (0.19)	0.03	[–0.06, 0.12]
SPPB (/12)	10.0 (8.0–11.0)	11.0 (9.5–12.0)	11.0 (11.0–12.0)	11.0 (11.0–12.0)	–	–

Note. Only participants who provided valid data points at both T0 and T1 were included. INT = intervention group; CON = waitlist control group; CHAMPS = Community Healthy Model Program for Seniors; PAs = physical activities; MVPA = moderate–vigorous physical activity; MPA = moderate physical activity; LPA = light physical activity; CI = confidence interval; OR = odds ratio; SPPB = short physical performance battery; EE = energy expenditure.
[a]Sample size for intervention was $n = 27$, for control was $n = 28$.
[b]Sample size for intervention was $n = 17$, for control was $n = 23$.
[c]Sample size for intervention was $n = 21$, for control was $n = 26$.

only in LPA; thus, it seems prudent for future research to report the full range of physical activity intensities for older adults.

Many positive effects of the intervention observed at T1 appeared to be retained at T2: MVPA (#/week and min/day), moderate physical activity (min/day), and energy expenditure (kcal/week). As a result, men were generally achieving more physical activity at T2 than at T0, but less than at T1, suggesting a moderate degree of lasting and positive behavior change. The intervention incorporated cognitive strategies (e.g., education, consultation) and behavioral strategies (e.g., planning to overcome barriers, goal setting, self-monitoring) that are associated with effectiveness among older adults (Chase, 2015). These likely contributed to the initial and sustained impacts of the intervention.

The intervention also resulted in a suggested increase in the odds of taking public transportation, which is a form of active transportation. We contend the impact of the intervention on public transportation use would likely be larger in populations where fewer men have a driver's license or access to a vehicle. These results suggest that offering a combination of group transit training, personal travel planning, and complimentary transit passes might be considered at scale-up in urban areas with accessible public transportation systems.

We designed Men on the Move to be a scalable physical activity intervention to increase the potential to improve population health over the long-term. In particular, the intervention is flexible and tailored to the needs, interests, and resources of men; focuses on

Table 5 Retention of Physical Activity and Active Transportation Outcomes in Men on the Move Among the Intervention Group

	Mean (*SD*)			T2 vs. T0 difference		T2 vs. T1 difference	
	T0	T1	T2	Mean	[95% CI]	Mean	[95% CI]
Physical activity							
CHAMPS[a]							
EE from all PAs (kcal/week)	3,637 (2,806)	5,058 (3,826)	5,162 (3,938)	1,421	[195, 2,881]	104	[−784, 1,375]
EE from MVPAs (kcal/week)	1,787 (2,312)	3,031 (2,836)	3,205 (2,995)	1,418	[194, 2,535]	174	[−560, 978]
all PAs (#/week)	19.9 (10.9)	26.2 (12.4)	23.5 (11.3)	3.5	[−1.0, 8.4]	−2.7	[−7.1, 2.2]
MVPAs (#/week)	6.9 (7.3)	13.0 (7.4)	10.0 (6.3)	3.2	[0.77, 5.65]	−2.9	[−5.5, −0.6]
Accelerometry[b]							
MVPA (min/day)	30.3 (21.2)	36.0 (21.2)	35.9 (25.8)	5.6	[−0.6, 11.8]	0.0	[−10.5, 10.4]
MPA (min/day)	29.1 (22.0)	35.1 (20.9)	35.7 (25.8)	6.6	[−0.4, 13.5]	0.6	[−9.6, 10.7]
steps (#/day)	7,281 (3,491)	7,496 (3,106)	7,842 (4,118)	591	[−448, 1,569]	346	[−1,264, 1,955]
met MVPA guidelines (≥150 min/week), *n* (%)	11	7 (50.0)	4 (28.6)	0 (0.0)	–	−3 (21.4)	–
Active transportation[c]							
≥1 transit trip/week, *n* (%)	9 (45.0)	13 (65.0)	12 (60.0)	3 (15.0)	–	−1 (5.0)	–

Note. Only participants in the intervention group who provided valid data for all three assessment sessions (T0, T1, and T2) were included. Thus, in some instances, the mean and *SD* differ slightly from those reported in Table 4. CHAMPS = Community Healthy Model Program for Seniors; MVPA = moderate–vigorous physical activity; MPA = moderate physical activity; CI = confidence interval; PAs = physical activities; EE = energy expenditure.
[a]Sample size was *n* = 25.
[b]Sample size was *n* = 14.
[c]Sample size was *n* = 20.

leveraging existing resources for physical activity within a community, and builds capacity among older men to use active forms of transportation. Our approach highlights the importance of building partnerships with community organizations—a central tenet of implementation at scale—to support long-term sustainability (Yamey, 2011). There are very few examples of scaled-up physical activity interventions, particularly for older adults—a recent systematic review identified just two (Reis et al., 2016). Designing interventions with scalability in mind improves the likelihood of successfully delivering the intervention at scale.

Maintenance and sustainability of an intervention requires that it become embedded into systems (Reis et al., 2016). There are inherent challenges to delivering interventions at scale (Wandersman et al., 2008), but relatively little has been reported about this. Thus, the knowledge and experience we share regarding design, implementation, and evaluation of Men on the Move has substantial value. Indeed, our intervention and results have served to inform design and implementation at scale, as well as evaluation methods, of a choice-based physical activity promotion model for older men and women, Choose to Move, that is being delivered across the province of British Columbia, Canada. The provincial program Choose to Move retains the elements of Men on the Move deemed essential by participants and community partners (e.g., flexibility, group sessions that promote social interaction, and trusted relationships between participants and activity coaches). However, to manage program costs and support sustainability, the provincial program has also been adapted during phases of scale-up (e.g., less frequent telephone support from activity coaches, no provision of complimentary recreation, or transit passes or pedometers). We are currently evaluating impact and implementation of Choose to Move and developing sustainability approaches with reduced cost in mind.

The Men on the Move intervention did not appear to impact measures of mobility including SPPB, gait speed, or life space. The intervention did not specifically encourage men to participate in activities that would increase lower extremity strength, balance, or speed; future versions of the intervention could specifically recommend resistance and balance exercises, consistent with national physical activity guidelines (Tremblay et al., 2011). In addition, median SPPB values at T0 in INT and CON were indicative of very good lower extremity physical function, so there was limited potential for improvement. Future trials would benefit from including other measures of capacity for mobility, such as a 400-m walk time (Simonsick et al., 2008) that would not be susceptible to ceiling effects and/or modified screening to enroll older men with poorer physical function, as done by the LIFE Trial (Pahor et al., 2014). Furthermore, although the intervention encouraged more frequent physical activity, there were no specific recommendations to venture further from one's home or to travel more independently; hence, the lack of change in life-space mobility.

This study has certain limitations. First, participants had higher levels of baseline physical activity (25% achieved ≥150 min of MVPA) than national samples (Colley et al., 2011). Thus, we recommend different and more targeted recruitment strategies in the future to reach exclusively inactive and more marginalized (e.g., frailer) populations of older men who have greater need for and may receive greater benefit from this type of intervention. Second, we used typical recruitment strategies for physical activity intervention trials, and therefore, do not know how many individuals were reached by study advertisements (the denominator of the study) and cannot quantify a screening rate (# screened/# reached). A very small screening rate would diminish scalability if these were the only recruitment strategies used. However, additional and more targeted strategies would be appropriate to facilitate broad scale-up. For example, since conducting Men on the Move, we have developed a range of referral channels into our scaled-up provincial program, Choose to Move, including partnerships with service sector organizations, primary care networks, and nongovernment organizations that serve the needs of older adults. Third, given that the strength of the intervention effects on physical activity tended to diminish during follow-up, future research is warranted to investigate whether and how much additional contact between participants and their activity coaches would increase sustainability of intervention effects. Finally, this study did not explore participant perceptions of the intervention on their health and well-being, but future qualitative work in this area will be important to optimize the design of lifestyle interventions for older men.

In conclusion, it was feasible to conduct a novel, flexible, and scalable 12-week choice-based intervention of physical activity and active transportation in older men. Rates of recruitment, retention, and adherence were high and exceeded predetermined targets. In addition, there were suggested increases in physical activity that appeared to be sustained for a short time after the intervention ceased, and in the likelihood of public transit use. Given the challenges of engaging older men in physical activity and their health (Caperchione et al., 2017), and the substantial benefits of physical activity to health should we succeed in doing so, we are encouraged by these findings.

Acknowledgments

This study was supported by a Team Grant in Boys' and Men's Health from the Canadian Institutes of Health Research (138295). D. C. Mackey and J. Sims-Gould were each supported by a Scholar Award from the Michael Smith Foundation for Health Research. J. Sims-Gould was also supported by a New Investigator Award from the Canadian Institutes of Health Research. The authors thank the study participants and three activity coaches: Kate Lee, Bonnie McCoy, and Kieu Nguyen.

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