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ORIGINAL RESEARCH

Short-Term, Community-Based, Slow-Stream Rehabilitation Program for Older Adults Transitioning from Hospital to Home: A Mixed Methods Program Evaluation

Vanina Dal Bello-Haas[1], Sharon Kaasalainen[2], Melody Maximos[3], Olivia Virag[4], Sirirat Seng-iad[5], Alyssa Te[6], Matthew Bui[7]

[1]School of Rehabilitation Science, McMaster University, Hamilton, Ontario, Canada; [2]School of Nursing, McMaster University, Hamilton, Ontario, Canada; [3]CBI Health, Nepean, Ontario, Canada; [4]Department of Family Medicine, David Braley Health Sciences Centre, Hamilton, Ontario, Canada; [5]Sirindhorn School of Prosthetics and Orthotics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; [6]Credit Valley Hospital, Trillium Health Partners, Mississauga, Ontario, Canada; [7]McMaster Children's Hospital, Hamilton Health Sciences, Hamilton, Ontario, Canada

Correspondence: Vanina Dal Bello-Haas, Email vdalbel@mcmaster.ca

Introduction: Shortened hospital stays have shifted the burden of care for older adults to community, informal (ie, family, caregiver) and formal post-acute care and services, highlighting the need for effective post-hospital stay services and programs. As there is a dearth of information related to community-based, slow-stream rehabilitation program models for older adults transitioning from hospital to home in the Canadian context, the paper describes a mixed methods evaluation of such a program.

Materials and Methods: A mixed methods program evaluation, with process- and outcome-related elements, included 1) review and analysis of program documents; 2) observations to examine fidelity. Observation data were coded and summarized using descriptive statistics. Coded information and data were compared to document review data; 3) quantitative assessment of pre-post changes in physical, social, and psychological outcome measure and instrument scores using descriptive statistics, paired *t*-tests and confidence intervals ($p = 0.05$); and 4) exploration of acceptability through interviews and focus groups with 41 of the older adult participants and 17 family caregivers. Thematic analysis was used to examine focus group and interview transcripts.

Results: Observational data indicated alignment with the program document information overall. Statistically and clinically significant positive trends in improvement for physical outcome measure scores were observed (6-minute Walk Test, Life Space Assessment, Short Physical Performance Battery, Rapid Assessment of Physical Activity). Participants and family caregivers identified several positives and benefits of the program, ie, improvement in physical, social and mental well-being, decreased caregiver burden; and areas for improvement ie, need for more information about the program prior to enrollment and individualization, several of which aligned with the observation and quantitative data.

Discussion/Conclusion: This mixed methods program evaluation provided a detailed description of a community-based, slow-stream rehabilitation program for older adults who are transitioning to home post-hospital stay and its participants. Evidence of program fidelity, acceptability, and positive trends in improvement in physical outcome measure scores were found. Information about program strengths and areas for improvement can be used by stakeholders to inform program refinement and enhancement.

Keywords: program evaluation, mixed methods, community-based program, older adults, hospital-to-home transition, slow-stream rehabilitation

Introduction

Hospitalization has serious, deleterious effects on older adults despite shorter lengths of stay.[1] Thirty to 60% of older people experience hospital-associated disability and functional decline which is a new loss of independence associated with deterioration in mobility, performance of activities of daily living, and self-care abilities.[1–3] Many older adults do not return

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to their pre-illness level of independence, function and mobility after one-year post-hospitalization.[4–6] Psychological and social impacts of hospitalization in older adults, including depression, stress, and cognitive decline and concerns about loneliness and lack of activity post-discharge, have also been reported.[7–9]

Limited health care resources have led to hospitalized older adults being discharged prior to full recovery and achievement of rehabilitation potential, and often without sufficient community health and social supports to meet post-acute care needs.[10,11] Shortened hospital stays shifts the burden of care to community, informal (ie, family, caregiver) and formal post-acute care, highlighting the need for effective post-hospital services and programs. High rates of re-hospitalization and long-term care placement after a hospital stay[12,13] are common for older adults, particularly for those who are frail,[14] have multiple comorbidities[15] and psychosocial needs.[16]

Function- and mobility-related deficits represent independent risk factors for hospital readmission in older adults but are addressable through rehabilitation interventions.[17,18] Physical function and health changes may negatively influence psychosocial health. Hospital-to-home transitions for older adults necessitates many adaptations resulting from physical function and health changes, which are positively or negatively influenced by psychosocial factors, and are often inter-related.[19] Although older adults often require intensive and extended rehabilitation to address deficits and ameliorate impairments and activity limitations, few hospital-to-home transition care models include rehabilitation professionals.[20]

Post-recovery is vital for older adults, but many older individuals do not recover pre-hospital function levels for several months post-discharge. For example, Boyd et al found functional recovery at 1-month was a predictor of 1-year post-discharge outcomes; but almost 40% of older adults required more than one month to recover function post-hospitalization and only 30% returned to their preadmission level functioning by one year.[5] This work and the work of others highlight post-hospitalization functional decline in older adults is a chronic, dynamic, long-term process that requires interventions, programs and services to improve recovery rates and address the changes that continue to occur post-discharge.

Various transitional care strategies aimed at improving outcomes in older adults discharged from hospital to their homes have been developed and evaluated including home visits, community care service, telephone follow-up, geriatric assessment, home safety assessment, and rehabilitation services.[21] To date, literature related to rehabilitation-focused interventions for older adults post-hospitalization has mainly focused on diagnosis-based populations eg, post-stroke, post-hip fracture, chronic pulmonary disease diagnosis, cardiac diagnosis; or older adults discharged to a temporary in-patient setting (skilled nursing facility) or long-term care facility; older adults starting rehabilitation as an inpatient and continuing with the same rehabilitation team on an outpatient basis; or older adults receiving at-home rehabilitation.[22,23]

Slow-stream rehabilitation programs may be appropriate for older adults needing additional time, supports and interventions to recover. Although no specific definition exists in the literature, slow-stream rehabilitation is understood to be longer duration or lower intensity (eg, less time per session, fewer sessions per week), and often includes a multi-factorial approach and multidisciplinary health care professional care.[24] In Canada, there is a lack of slow-stream rehabilitation programs for older adults in general and, more specifically, slow-stream programs that incorporate multiple components of health. Where they do exist, they are offered as in-patient programs or are integrated into hospitals or long-term care facilities.[24]

There is paucity in the literature specifically related to out-of-home and community-based models of care (interventions) for older adults transitioning from hospital to home, particularly community-based, slow-stream rehabilitation interventions in the Canadian health care context. The purpose of this paper is to describe a mixed methods evaluation of a community-based, slow-stream rehabilitation program for older adults transitioning from hospital to home.

Materials and Methods

Program evaluation involves the systematic collection of information about characteristics, elements, activities, outcomes and results.[25–27] The purposes of program evaluation include developing an understanding of the nature of the program and structure as a whole; exploring the effects of the program and program effectiveness; and informing decision-making regarding program development and improvement.[25–27] Program evaluation can comprise outcome- or process-related domains and components. Outcome-related evaluation is concerned with examining the effect(s) of the program on the target population. Process-related evaluation [program monitoring] seeks to understand if the program components are

being conducted in accordance with the program model and can take place when implementation begins or during the operation of an existing program, process evaluation provides information about the program or intervention as it was planned and it was delivered to the target recipients; and the exposure of participants to the components and their experiences.[25–27]

Objectives

The objectives of the program evaluation were to 1) provide a description of the program and participant characteristics (process domain); 2) examine program fidelity (process domain); 3) examine the potential effects in the program participants (program effects, outcome domain); and 4) explore the perceptions and experiences of the individuals served by the program eg, program participants and their family members (acceptability, process and outcome domain).

Methods

Mixed methods program evaluation utilizes a rigorous approach with one or more core mixed methods designs scaffolded into the assessment plan.[28,29] In explanatory sequential designs, quantitative data are collected and analyzed to examine trends, followed by qualitative data collection and analysis to augment the quantitative data and explain findings.[30,31]

As stakeholder relevancy of inquiries, perspectives taken, and outcomes examined in program evaluation is foundational,[25–27,32] the initial step was to engage with senior administrators of the organization that houses the program and organization and program decision-makers and staff involved in the day-to-day activities of the program. Meetings were conducted to discuss and establish priorities; determine what, if any, evaluation data had already been collected and analyzed; and agree upon evaluation methods and data collection the organization and program staff considered useful (utility), suitable and feasible. These discussions led to the development of an organization and program approved multi-method, explanatory sequential mixed methods evaluation plan.

The following questions guided the program evaluation plan: 1) what are the core program components; 2) what are the demographic and other characteristics of the target recipients (program participants)? 3) is the program being delivered as intended in accordance with the program model; 4) how do the stated program components align with "real world" delivered program components? 5) what are the potential participant-level outcomes of the program? 6) what are the experiences and perceptions of the participants and their family members of the program and its components?

The evaluation plan was comprised of the following: 1) document review to describe the program; 2) direct observation of participants attending the program and during program activities. Comparisons were made to document review program data to examine fidelity; 3) exploration of the potential effects in the older adult participants attending the program by examining change in mobility, psychosocial and physical function through quantitative data collection at two time points: admission to the program (baseline) and discharge from the program; and 4) qualitative data collection, specifically interviews and focus groups with a sub-set of program participants and their family members and caregivers to explore acceptability of the program. Protocols were developed for each program evaluation component and related data collection methods detailing the what, how, who and when of the specific collection methods. All data collection instruments and procedures were initially piloted and refined as needed prior to formal implementation.

Document Review

Document review involves data collection through review of existing internal (eg, to a program or organization) or external documents. Documents may be hard copy or electronic and may include program descriptions and reports, funding proposals, meeting minutes, newsletters, and marketing materials. Document review for program evaluation is used to gather background information to understand the history, philosophy, and operation of the program being evaluated and the organization within which it operates; determine if implementation of the program reflects program plans; and, to assist with the development of other data collection tools for evaluation (eg, focus group and interview questions, observation guide).[33]

Documents made available by the program and through web searching were reviewed by two research assistants (RAs). Documents included the program brochure, presentation slides, program data summaries, and health region alternative level of care steering committee reports. RAs were trained regarding document review methods and used a template form to record information to ensure consistency. Examples of categories and questions that were captured in

the template form included document title, document author, document title date written, intended audience; definition and purpose of the program; main purpose of the document; objectives; major issues; stated outcomes and impact of the program, et cetera. RA's first individually catalogued and reviewed the documents and then came together to discuss their findings. Any discrepancies were resolved through discussion and if needed through consultation with another team member. A comprehensive report of the documents was developed.

Observations – Fidelity

Observations are a valuable tool for understanding processes and behaviours.[34] While often thought of as a qualitative approach, in particular when used to create 'thick descriptions', quantitative observation involves examining for predetermined categories of information,[35] and is a commonly used method to examine fidelity.[34] Fidelity refers to the extent to which a program or intervention adheres to the protocol or program model originally developed and is assessed by examining congruence and consistency to determine if the delivery was "as intended".[35,36] Specifically, fidelity informs about the extent to which the program or intervention "as delivered" matches the program or intervention "as planned".[37,38]

Fidelity assessment focused on the amount of exposure participants had to the program components and the consistency with which the program components were delivered. Structured observations were conducted and program activities using checklists and logs were recorded. RAs were trained in observation and use of program activity checklist and log forms; and participants who provided written informed consent for program effectiveness data collection also provided consent for observation. Each participant was observed during two randomly selected weeks they were participating in the program. Date of observation, arrival time, activity, activity duration, level of engagement, departure time were recorded. Only activity logs that were 75% complete were analyzed. Observed activities were coded by two research team members and compared for discrepancies. Any discrepancies were discussed by the two team members and if not resolved, discussion with a third research team member took place. Type of program activities, time spent in program activities, and total time in the program per day were calculated and summarized.

Potential Effects

A prospective one-group, pre-test post-test design was used to evaluate the potential effects of the community-based program. A convenience sample of English-speaking adults over the age of 60 years who were recently discharged from the hospital, admitted into the program during the evaluation period, and who were able to follow instructions were approached by program staff to request permission for a member of the research team to contact them. To assess the potential effects of the program valid and reliable screening instruments and outcome measures commonly used in the older adult population were selected, based on the discussions with the organization and program staff. RAs were trained and observed for accuracy of instrument administration and completed the assessments. Participants were provided with the time and any rest breaks they needed during the assessments. The following tests and measures were administered at baseline and discharge from the program:

Psychosocial Measures

1. The Geriatric Depression Scale-15[39] (GDS-15) is a widely used brief screening 15-item instrument for detecting depression in older adults in hospital,[40] primary care[41] and community settings.[42] Scores range from 0 to 15. The Cronbach's alpha coefficient for the total scale has been reported to be 0.749,[39] with individual item coefficients ranging from 0.720 to 0.755.[43] A cut-score of 5[39] or 6 is used for differentiating depressed from nondepressed older adults, with maximized sensitivity (81.45%) and specificity (75.36%) in a community-dwelling population using a score of 6.[42] Minimally clinically important difference (MCID) and minimum detectable change (MDC) values have not been reported for the GDS-15.
2. The Geriatric Anxiety Inventory[44] (GAI) is a 20-item measure of anxiety severity in older adults with good convergent and criterion validity,[45] internal consistency alpha values ranging from 0.83 to 0.95,[46] and test–retest reliability values ranging from 0.91 to 0.99.[47,48] A cut-point of 10/11 had a specificity of 84% and a sensitivity of 75%, with 83% of classifying individuals with anxiety versus no anxiety.[44] MCID and MDC values have not been reported.

3. The Montreal Cognitive Assessment[49] (MoCA) examines attention and concentration, executive functions, memory, language, visuo-constructional skills, conceptual thinking, calculations. A cut-off value of 23[50] (out of 30), rather than the initially recommended score of 26,[49] lowers the false-positive rate and provides overall better diagnostic accuracy and is indicative of mild cognitive impairment. MDC is a change of 4 points.[50]
4. The UCLA Loneliness Scale (UCLA-LS)[51,52] is a 20-item scale that measures subjective feelings of general loneliness (emotional, social) widely used in the older adult population.[53] Scores range from 20 to 80, with higher scores indicating greater loneliness [= total score <28 = no/low loneliness; total score 28 to 43 = moderate loneliness; total score >43 = high loneliness].[54] Reliability has been reported, with internal consistency coefficient values from 0.89 to 0.94[53] and test–retest reliability over a 1-year period, $r = 0.73$.[51] Convergent and construct validity have been found to be adequate.[53] MCD and MCID have not been reported.

Mobility and Physical Measures

1. Six-minute Walk Test[55] (6-MWT; functional capacity, endurance) is frequently used in older adults with and without health conditions. Test re-test reliability has been reported, ICC = 0.95; and criterion and construct validity are adequate.[56] Small to large MDC is 20 to 50 meters and MCID is 50 meters.[57] The recommendations of the American Thoracic Society guidelines[58] for 6-MWT administration, walking course, and standardized instructions and feedback were followed; and distance walked in six minutes was recorded.
2. Short Performance Physical Battery[59,60] (SPPB; physical function) includes timed tests of standing balance, walking, and the ability to rise from a chair. Each task is scored from 0 to 4, with 4 representing the best performance and 0 indicating the person is unable to complete the task. The timed results of each subtest are rescaled according to predefined cut-points, resulting in a total SPPB score ranging from 0 to 12. Excellent test–retest validity (ICC range = 0.88 to 0.92),[60] and adequate internal consistency (r = 0.76),[59] predictive,[61] concurrent[62] and construct[63] validity have been reported. SPPB scores of 8 or less in males and 7 or less in females are reflective of the physical frailty phenotype.[64] Small to large MDC is 0.5 to 1.0[62] and MCID is 1.0.[63]
3. Rapid Assessment of Physical Activity[65] (RAPA; physical activity) is a nine-item, self-report questionnaire of physical activity in older adults, broadly classifying individuals into sedentary, underactive, moderately active and sufficiently active for health. There are two sub-scales, RAPA-Aerobic and RAPA-Flexibility and Strength, and a score of six is indicative of regular engagement in physical activity. Topolski et al reported adequate convergent validity and good criterion validity of the measure in older adults, and sensitivity of 81% and specificity of 69% was reported for classifying exercisers versus non-exercisers.[65] MDC and MCID have not been reported.
4. Life Space Assessment[66] (LSA; mobility) assesses mobility in terms of the spaces the individual reports moving within or traveling to over a 4-week period. Mobility is visualized as a series of concentric rings defined by the distance extending from the location where the older adult sleeps – within the home (Life-Space 1), outside the house (Life-Space 2), within the neighbourhood (Life-Space 3), within the town (Life-Space 4), and unlimited space (Life-Space 5). The LSA documents mobility based on how far and how often the older adult travels to each of the defined Life-Spaces and any assistance needed. LSA scores range from 0 (totally bed-bound) to 120 (moved out of town every day without assistance).[66] Test–retest reliability of the LSA has been established (ICC=0.96),[66] as have construct, concurrent and convergent validity and responsiveness to change.[67] A change of five or more is considered a minimally important change.[68]

Sample Size Calculation

Sample size calculation was based on the SPPB (range: 1–12, standard deviation, SD = 1.8).[69] Calculation for a pre-test post-test study,[70] with a moderate effect size (Cohen's d = 0.6), $\alpha = 0.05$, power = 0.80 and a moderate correlation between outcome measures (eg, $r = 0.6$)[71] indicated that 53 participants would comprise an adequate sample. The target enrollment number was 76 participants at baseline to allow for a potential 30% attrition and loss at follow-up at the discharge timepoint.

Focus Groups and Interviews – Acceptability

Qualitative approaches and methods are concerned with describing and explaining phenomena that occur in natural contexts and are useful for examining depth of experiences related to the phenomenon of interest.[33] As qualitative inquiry places priority on lived experiences and the meanings ascribed to experiences,[72] qualitative methods are appropriate to examine acceptability. Acceptability refers to how well and the extent to which a program or intervention and its components are received by the target population.[73] From a participant's perspective, the program content, context and quality may all have implications for acceptability.[74] To examine acceptability, the experiences and perceptions of older adult participants and their family members regarding program and program components, strengths and weaknesses, and perceived benefits were explored through focus groups and individual interviews using a semi-structured interview guide. A convenience sample of participants who had been discharged from the program within the past three months were approached by program staff. Convenience sampling was used based on the ease of reachability[75] of participants post-program discharge. The three-month post-discharge time frame was selected to tap into more recent recall of experiences. Forty-one of the 64 older adults who completed the program during the evaluation time frame agreed to participate. All 41 participants were asked by program staff if they had a family member who would be interested in participating and were asked to share contact information. Family members were then approached and asked to participate separately. A member of the research team followed up with the individuals who expressed interest to explain the study processes and to obtain formal consent for participation.

Focus groups, with four to six individuals, took place in person at the program site for approximately 45 to 60 minutes. Focus groups were co-facilitated by two members of the research team. Participants who were not able to participate in a scheduled focus group completed an individual interview, approximately 30–40 minutes in length, either in person or over the phone with one research team member. The semi-structured guide questions were designed to prompt perceptions of and experiences with the program and the same guide was used for both the focus groups and interviews. Semi-structured interview guides allow for reciprocity between the interviewer and participant,[76] opens the discussion for follow-up questions, and gives space for individual participant's expressions.[76] Questions were developed based on the document review, the team's knowledge of the program from previous studies and observations and tailored based on the audience eg, program participant, family member. Focus groups and interviews were recorded and then audio files were transcribed verbatim in preparation for analysis.

Data Analysis

Quantitative analyses were conducted using SPSS® version 27 and included descriptive statistics (mean and SD or median and minimum, maximum for continuous data; counts and percentages for categorical data); *t*-test to compare baseline measures in males and females; paired *t*-tests and 95% confidence intervals (CIs) and associated *p*-values to evaluate change at discharge for participants who completed outcome measures at both baseline and discharge time points, with statistical significance set at $p = 0.05$.

Thematic analysis was used to analyze focus group and interview data as described by Braun & Clarke.[77,78] Thematic analysis is a systematic classification process of coding and identifying themes or patterns in text data to interpret the content. Transcripts were initially read and re-read by two research team members independently to gain familiarity with the data and document initial impressions. The two team members then individually conducted open coding, a process in which codes are developed and modified iteratively; and codes were then compared to reach consensus. Any disagreements were resolved via discussion with a third research team member. Codes were grouped and themes were developed. Themes were discussed with the larger research team to ensure clarity and revisions were made as needed. The next stage involved defining the themes ensuring the findings reflected the essence of each theme. A coding structure, in the form of a table, was then developed to showcase main themes, subthemes and individual codes. Quotes from each transcript that reflected the significance of individual codes were highlighted. Finally, the codes and themes were shared with the participants (member checking) as an additional step to ensure rigour and trustworthiness (triangulation).

Ethics

All aspects of the program evaluation complied with the World Medical Association's Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. Ethics approval was received from the Hamilton Integrated Research Ethics Board (HiREB # 15–089). A research team member provided potential participants with information about the procedures and processes and participants completed a HiREB approved consent form after receiving information and discussion with research team members. The consent form included several statements that indicated the results could be published; if published the participant's name would not be used; and if published no data or information that disclosed or could be linked with their identity would be published.

Results

A summary description of the findings for each evaluation component is presented below.

Document Review – Program History and Description

A total of nine program-related documents were available for review: funding proposal, program brochure/information brochure, presentation slides, program reports, program data summaries, and sample calendar. The documents analyzed provided information to garner an understanding of the history of the program, program development, the nature of the program and program aims, the structure of the program and the program components and activities. The program was established in 2007 as a community-based, slow-stream rehabilitation program, as part of the Local Health Integration Network's (LHIN) *Aging at Home Strategy*. At the time, the program was developed and established, the LHIN was the health authority responsible for regional administration of public healthcare services in the province/. Partnerships included the organization (a multi-level facility for older adults) where the program was housed, two local hospitals, a local convalescent care program, and the LHIN Community Care Access Centre (CCAC), which organized older adult health and home care services. Table 1 summarizes the program aim, goals, parameters, target recipients, eligibility requirements, team members, components and activities, as determined through the document review.

Observations – Fidelity

The mean number of days participants attended the program was 20.5 (SD = 3.5), equating to five days per week for four weeks. The most frequently observed arrival time was between 9:30 and 9:59 a.m. (37.5%) and 10:00–10:29 a.m. (31.3%), with 19.9% arriving after 10:30 a.m. A small percentage (6.2%) of participants' departure time was between 15:00 and 15:29 p.m, with the most frequent departure time being between 14:00 and 14:29 p.m. (36.4%) and 14:30 and 14:59 p.m. (31.0%). The minimum amount of total time in the program in a day was 2 hours and 20 minutes and the maximum amount of total time was 4 hours and 50 minutes. The mean total time was 3 hours and 47 minutes (SD = 46.6 minutes).

Table 2 provides an overview of the activities as observed, recorded, coded, and analyzed descriptively, specifically the program activity categories and subcategories, and time spent. Overall, the categories and sub-categories of activities observed aligned with program documents – social and cognitive activities, individual and group exercise, health education and services, and lunch meal and refreshments. Rest, sleep and transition time was also observed and recorded. Time spent in the different categories of activities and sub-activities varied. Almost half of the participants (47.4%) made use of the additional facility services, with a mean time spent of 41.2 minutes (SD = 29.8). Average mealtime was 59.8 minutes (SD = 2.44). Almost all participants partook in the refreshments offered (93.4%), were observed conversing with other participants throughout the program day and during the activities (86.3%) and were fully engaged in the conversations (93.5%).

About three-quarters of the participants (71.1%) engaged in entertainment activities, 55.3% participated in game activities, and 44.7% in the other social activities offered, which were organized and supervised by or led by organization and program staff. A majority of participants (82.9%) engaged in the structured cognitive activities led by the program nurse or staff under her supervision, with 56.2% fully engaged and 29.6% partially engaged; 50% of participants engaged in cognitive activities on their own throughout the day. Just over half of the participants received health assessments (52.6%) conducted by the program nurse and 21.1% required health-related care and management. Team members

Table 1 Program Description and Elements

Program Aim and Goals	Program Parameters	Target Recipient Eligibility Requirements	Program Team Members	Program Components and Activities
Aim: assist recently hospitalized older adults with the hospital-to-home transition. Goals: 1) provide opportunity for participants to address rehabilitation goals in a day program setting and in their homes on evenings and weekends 2) facilitate timely discharge from hospital 3) build confidence to "ease back" into home life setting, with supports as needed 4) alleviate hospital and alternative level of care pressures 5) make the most effective use of system resources 6) connect participants to community supports as needed upon discharge to prevent hospital readmission, decline in physical function once back at home, and social isolation	• Referral through the CCAC • Maximum length of stay = 30 days • Number of days and hours/day can vary based on participant needs and abilities • Maximum attendance = 15 participants/day • Monday to Friday • 9 a.m. to 3 p.m. • No cost to program participants	• Older adults with one or more profile factors that made them ineligible for more specialized or a more intensive rehabilitation • Medically stable • Rehabilitation goals achievable within 30 days • Be able to manage at home on evenings and weekends, with the support of CCAC if needed • Motivated to attend up to five days/week to achieve goals	• Nursing • Physiotherapy • Physiotherapy assistant(s) • Recreation • Recreation assistant(s) • Personal Support Worker(s) • Occupational therapy* • Community Pharmacy*	• Wheelchair accessible transportation at no cost, if needed • Refreshments, snacks, lunch • Nursing support for medication administration • Physiotherapy • Group and individual exercise • Social activities • Cognitive activities • Self-management and health information sessions • Wound care if needed • Assistance with personal care if needed • Bathing program • Access to all available facility amenities eg, hair salon, foot care, fitness center
Sample schedule 8:30 a.m. to 10:00 - Pick up and arrival; Snack, refreshments 10:00 to 11:30 – Assessment/Management/Care Therapeutics; Group or Individual exercises; 11:30 to 12:30 – Self-management, Health information session; Cognitive and Social activities 12:30 to 1:30 – Lunch 1:30 to 2:30 p.m. - Group or Individual exercises (if group in a.m, then individual in p.m. and vice versa) 2:30 to 4:00 p.m. - Home				

Note: *If needed, referral to these team members.
Abbreviation: CCAC, Community Care Access Centre.

involved were need and focus of care and management dependent. Fifty percent attended the health education sessions conducted by the program nurse or topic experts, with 62.2% of participants fully engaged and 24.3% partially engaged during these sessions. The vast majority of participants engaged in aerobic and resistance exercises (96.1% for both activities). More than two-thirds of participants (69.7%) engaged in group exercises, 18.4% engaged in balance exercises and 68.4% engaged in other types of exercises. Exercise programs were prescribed by the program physiotherapist and the physiotherapist also provided individualized sessions eg, balance training. The program physiotherapy assistant supervised the group exercise sessions and assisted participants with their prescribed exercise programs.

Table 2 Program Activities and Time Spent in Activity Sub-Categories by Participants (Minutes)

Activity Category	Activity Sub-Category	M, SD	Min, Max
Physical	Resistance exercise	44.75, 3.54	52.00, 119.00
	Aerobic exercise	98.46, 59.40	40.00, 290.00
	Balance exercise	10.41, 4.10	0.00, 26.00
	Group exercises	39.54, 39.60	87.00, 145.00
	Other exercises	14.92, 9.90	0.00, 105.00
Social	Horoscope, weather, news	6.79, 15.56	0.00, 82.00
	Structured game ie, Bingo	33.33, 0.00	0.00, 214.00
	Entertainment ie, movies, live music	58.95, 31.82	0.00, 328.00
	Refreshments	68.37, 18.38	20.00, 298.00
	Conversation	69.71, 16.97	30.00, 357.00
Cognitive	Structured, Group ie, Crossword, Trivia, Scrabble	81.43, 115.26	50.00, 337.00
	Unstructured, Individual i.e. Playing game on IPAD	27.58, 0.00	0.00, 372.00
Health Care Related Service	Assessment/Management	30.10, 113.84	0.00, 161.00
	Care/Therapeutics	3.49, 0.00	0.00, 151.00
	Health Education	17.17, 35.36	0.00, 174.00
Other	Rest	82.51, 7.07	6.00, 396.00
	Sleep	25.05, 0.00	0.00, 295.00
	Waiting	73.70, 9.90	81.00, 179.00
	Transition Time	48.89, 7.07	35.00, 527.00
	Use of Facility Services eg, haircut	18.17, 33.23	0.00, 123.00

Program Participants

Program participant demographics and characteristics are described collectively below and reported by sex in Table 3. Seventy-six participants [mean age = 78.3 years, SD = 10.1; 63.2% female; mean MoCA score = 21.1, SD = 5.6; mode = 26, n = 9; min = 9, n = 2; max = 30, n = 1] were initially enrolled during the program evaluation timeframe and completed baseline tests and measures. Reasons for hospitalization were varied. The four most cited reasons included: falls and related sequelae (23.5%); single medical reason eg, congestive heart failure, infection, medical toxicity or a combination of medical or surgical reasons (21.6%); surgery (19.6%, cardiovascular, spinal or brain, total hip replacement); and fracture (17.5%, lower extremity, upper extremity, pelvis; 17.6%). Other reasons included pneumonia (7.8%) and stroke (5.9%). Over fifty percentage of participants (56.5%) waited 2 weeks or less to be enrolled in the program (mean time frame = 2.72 weeks, SD = 3.36; min = less than a week, n = 15, max = 24 weeks, n = 1).

Almost all participants (95.7%) were living with one or more chronic conditions, including hypertension, diabetes, arthritis, heart disease or heart failure, asthma, kidney disease (mean number of conditions = 5.8, SD = 2.6) and were taking medications (mean number = 3.2 medications, SD = 2.0). Almost half (47.8%) of the participants lived alone; more females lived alone (n = 24, 37.5%) compared to males (n = 7, 10.9%, $p = 0.05$). A majority of participants were living in a 'house' (89.1%) versus a community-based, assisted-living facility (10.9%). Four females (8.8%) reported living in subsidized housing, but no males reported living in subsidized housing ($p = 0.04$). Almost 40% of participants had personal support worker assistance at home and just over 30% had been receiving home-based physiotherapy services at the time of admission to the program. Almost all the participants (98.4%) were using an assistive device, with the large majority (82.8%) using a walker. As noted in Table 3, males and females had significant difference in GDS scores at baseline, with mean GDS scores indicative of mild depression for males.

Ten participants withdrew from the program (n=9) or withdrew consent (n=1) before the discharge assessment timepoint during the program evaluation period. There was no significant difference in age, sex, number of chronic conditions, number of medications between those who remained in the program during the evaluation period and those who did not. Those who withdrew had higher GDS scores (mean = 6.7, SD = 4.9; mild depression) at baseline

Table 3 Demographic Variables and Measures by Sex at Baseline (n = 76)

Variable/Outcome Measure	Males Mean (SD) n = 28	Females Mean (SD) n = 48	*p*-value
Age	77.2 (9.5)	78.9 (10.4)	0.48
Number of Medications	7.0 (5.1)	8.9 (5.8)	0.15
Number of Chronic Conditions	3.4 (2.1)	2.9 (1.4)	0.14
MoCA (score 0–30)	19.8 (5.6)	21.8 (5.6)	0.16
GDS (score 0–15)	5.4 (3.9)	3.5 (2.8)	0.03
GAI (score 0–20)	6.6 (6.8)	4.8 (5.6)	0.24
UCLA-LS (score 20–80)	40.61 (25.51)	32.06 (13.51)	0.06
6-MWT (metres)	162.8 (77.2)	142.2 (73.8)	0.33
SPPB (score 0–12)	4.6 (2.1)	4.3 (2.5)	0.65
LSA (score 0–120)	32.9 (16.6)	30.8 (16.0)	0.62

Abbreviations: 6-MWT, Six-Minute Walk Test; GAI, Geriatric Anxiety Index; GDS, Geriatric Depression Scale; LSA, Life Space Assessment; MoCA, Montreal Cognitive Assessment; SPPB, Short Physical Performance Battery; UCLA-LS, UCLA Loneliness Scale.

compared to those who completed the discharge time-point assessment (mean = 3.8, SD = 2.9; no depression; $p = 0.02$); and lower MoCA scores, mean = 16.6, SD = 6.6 versus mean = 21.8, SD = 5.2, $p = <0.01$.

Pre-Post Changes in Outcome Measures

Changes in psychosocial and physical outcomes from baseline to discharge from the program are reported for the 66 participants who completed the discharge assessment during the program evaluation period in Table 4. Statistically and clinically significant changes were seen in mobility and physical outcome measures only. Pre-post changes in physical activity and exercise (RAPA) are found in Table 5. Significantly more females than males were engaged in stretching and resistance exercises at baseline. At program discharge, there were fewer participants in the sedentary and underactive RAPA aerobic category; more participants in the underactive light and regular category; and more participants were engaged in both stretching and resistance exercise compared to baseline.

Focus Groups and Interviews – Acceptability

Three major themes – individual-level experiences, program-level experiences, system level-related experiences – were identified and are summarized in Figure 1. Each theme and sub-theme are described below, with sample quotes. Within

Table 4 Outcome Measure Score at Baseline and Discharge for Program Participants Who Completed the Measures at Both Timepoints

Outcome Measure	Baseline Mean (SD)	Discharge Mean (SD)	Difference Baseline to Discharge Mean (SD)	95% Confidence Interval	t (*p*)
MoCA, MDC = 4 points	22.02 (5.05)	22.42 (5.10)	0.42 (3.5)	−1.3, 0.53	0.85 (0.39)
GDS	3.76 (2.90)	3.55 (3.10)	−0.22 (2.9)	−0.90, 0.46	−0.63 (0.53)
GAI	5.38 (6.20)	4.78 (6.20)	−0.60 (3.80)	−1.6, 0.4	−1.2 (0.23)
UCLA-LS	32.27 (12.97)	34.62 (24.11)	−2.45 (21.59)	−7.79, 3.09	−0.86 (0.39)
6-MWT (distance, m), MDC = 20–50 m, MCID = 50 m	151.25 (75.25)	190.38 (83.32)	39.13* (58.75)	23.09, 55.167	4.89 (<0.001)
SPPB, MDC = 0.5–1.0 point, MCID = 1.0 point	4.02 (2.50)	5.05 (2.67)	1.03* (2.01)	−1.5, −0.51	3.99 (<0.001)
LSA, MDC = 5 points	31.91 (28.00)	41.40 (40.50)	9.49* (17.64)	5.08, 13.90	4.3 (<0.001)

Notes: MDC and MCID included if available. See Methods, Potential Effects sub-section for references. *Clinically significant difference.
Abbreviations: 6-MWT, Six-Minute Walk Test; GAI, Geriatric Anxiety Index; GDS, Geriatric Depression Scale; LSA, Life Space Assessment; m, Metres; MCID, Minimal Clinically Important Difference; MDC, Minimal Detectable Change; MoCA, Montreal Cognitive Assessment; SPPB, Short Physical Performance Battery; UCLA-LS, UCLA Loneliness Scale.

Table 5 Percentage of Males and Females Engaging in Aerobic, Stretch and Resistance Activities According to the Rapid Assessment of Physical Activity (RAPA) at Baseline and Discharge

Time Point		RAPA Physical Activity Category	Male % (n)	Female % (n)	Total % (n)	*p*-value
Baseline	Aerobic Activity	Sedentary	17.2 (11)	15.6 (10)	32.8 (21)	0.21
		Underactive	3.1 (2)	15.6 (10)	18.8 (12)	
		Underactive, Light	15.6 (10)	26.6 (17)	42.2 (27)	
		Underactive, Regular	1.6 (1)	4.7 (3)	6.3 (4)	
		Active	0 (0)	0 (0)	0 (0)	
		Total	37.5 (24)	62.5 (40)	100 (64)	
Discharge	Aerobic Activity	Sedentary	3.2 (2)	0.0 (0)	3.2 (2)	0.24
		Underactive	3.2 (2)	6.3 (4)	9.5 (6)	
		Underactive, Light	25.4 (16)	42.9 (27)	68.3 (43)	
		Underactive, Regular	4.8 (3)	14.3 (9)	19 (12)	
		Active	0 (0)	0 (0)	0 (0)	
		Total	36.5 (23)	63.5 (40)	100 (63)	
Baseline	Stretch and Resistance Activity	Neither	15.6 (10)	21.9 (14)	37.5 (24)	0.05
		Resistance Only	6.3 (4)	3.1 (2)	9.4 (6)	
		Stretch Only	10.9 (7)	10.9 (7)	21.9 (14)	
		Both	4.7 (3)	26.6 (17)	31.3 (20)	
		Total	37.5 (24)	62.5 (40)	100 (64)	
Discharge	Stretch and Resistance Activity	Neither	3.2 (2)	3.2 (2)	6.3 (4)	0.56
		Resistance Only	3.2 (2)	9.5 (6)	12.7 (8)	
		Stretch Only	0 (0)	3.2 (2)	3.2 (2)	
		Both	30.2 (19)	47.6 (30)	77.8 (49)	
		Total	36.5 (23)	63.5 (40)	100 (63)	

the individual- and program-level experiences, sub-themes highlighted specific positive and negative aspects of the program. Only negative aspects were identified with the system-level experiences themes.

Individual Level Experiences

Improved Well-Being

A sub-theme that was very evident was that the participants and family members perceived the program improved well-being. Improved physical capabilities of participants at discharge compared to when they entered the program were described by both participants and family members. Several physical benefits including perceived improvement in strength and endurance, as well as increased confidence in physical abilities were noted. One participant described "I am walking better than I [was] before" (Older adult participant). Another stated, "What I started out not being able to do nothing, then ended up better at walking… and have a little bit more strength" (Older adult participant). Another commented "after the month here, we are all feeling stronger and confident" (Older adult participant).

Mental and social well-being of the participants also perceived to improve. As stated by a family member, "[The program] hits all of these important things, physical and mental." One aspect of the program is socializing with others, enjoying break and lunch mealtimes together, playing fun and cognitive-based games. Aside from the physical improvements, participants and family members noted other program activities increased the overall well-being of participants. One older adult participant stated, "[The program] is very interesting and it helps to keep your mind active and stuff, the games that there are playing… and the interaction with other people." Participants felt participating in the program alleviated feelings of loneliness through their conversations with other people and meeting other participants who became friends. One participant stated,

> I was very lonely and needed to get out of the house which is hard to do when it is winter. This program helped me look forward to seeing and talking with people. (Older adult participant)

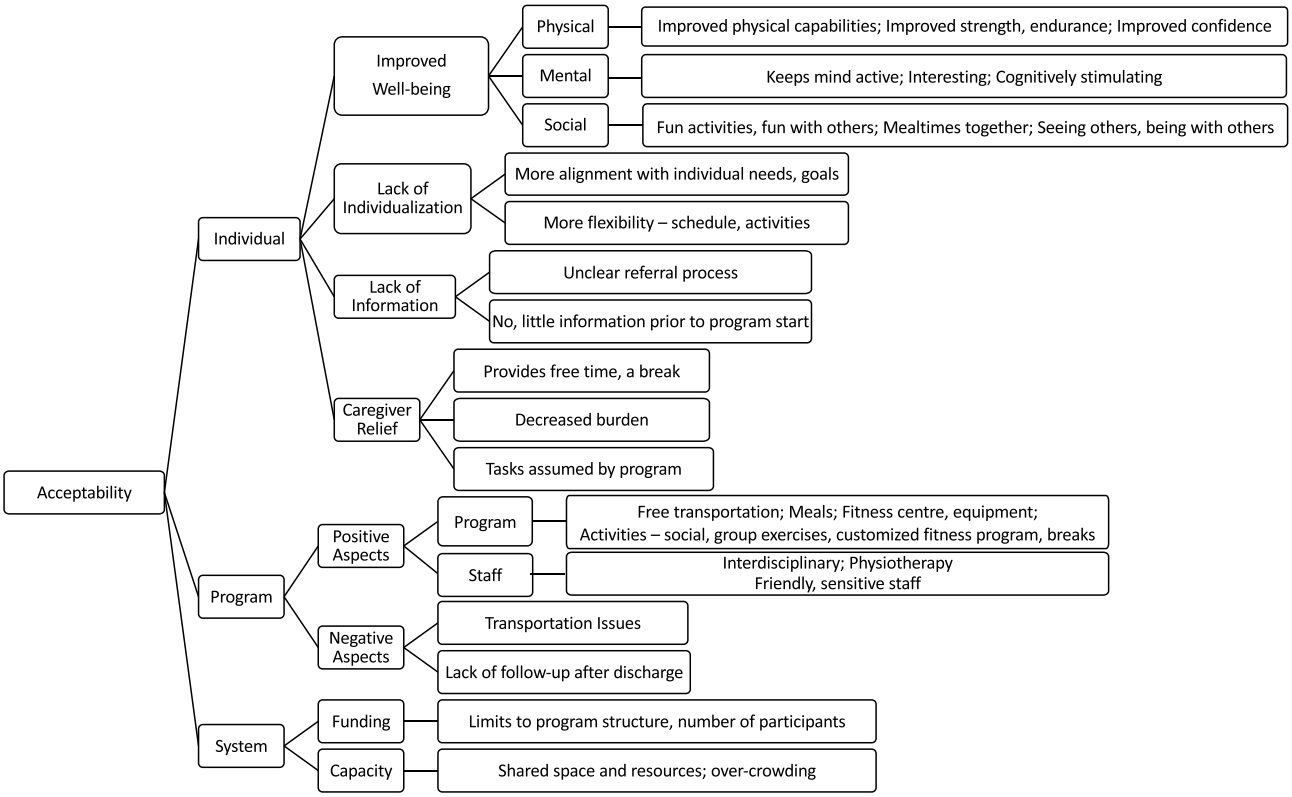

Figure 1 Acceptability findings from focus groups and interviews: summary of themes and sub-themes.

Lack of Individualization

Most participants noted that the program was not individualized enough to their specific wants or needs. Participants indicated the program should be adjusted so that time is maximized for the participants' benefit. For example, some participants would have appreciated more physical activity with decreased socialization and others would have liked more rest time. The program schedule was the same for all who attend. One participant stated, "As much as I enjoyed the talk and the socializing, it did not lead me to get better [physically]" (Older adult participant). In order to meet the individualized needs of participants, it was felt a more flexible schedule should be created. In addition, participants described they felt there was no individualized goal setting within the program. Most participants assumed that increasing their strength was the goal for the program but were not asked about their personal goals and what they to work on or what benefits they wanted to garner from the program.

Lack of Information

The referral process seemed unclear and during the referral process little information was shared with the older adult or family. Older adults participating in the program and their family members described receiving little information about what the program entailed prior to starting. One participant described, "They didn't give us anything, we didn't know what to expect" (Older adult participant). Another participant stated, "I didn't even know what is was called until the last week or so" (Older adult participant). Family members agreed, they received little or no information prior to admission - "There is a lack of awareness of the program, I learned about the program by 'fluke" (Family member of participant). Another family member suggested that "Testimonials would've put [participants'] minds at ease." These comments indicated more information would have been appreciated by the participants and family caregivers prior to being admitted into the program.

Caregiver Relief

The program provided family members with free time from actively providing care and alleviated caregiver burden. One family member stated, "It is good that he is there most of the day, it provides relief." Another family member described that it provides them with a break just to have "them coming here". The program was viewed positively by caregivers as various tasks were assumed by the interdisciplinary staff that run the program's daily activities.

Program Level Experiences

Positive Aspects

Many aspects of the program yielded a positive reaction. The wide range in services offered such as free transportation, meals, physiotherapy, the fitness centre and the equipment, social games and activities and rest periods, were identified positive aspects by both participants and family members. One participant stated, "They do pick up people in the community who otherwise would have no access" (Older adult participant). It was apparent that how the program was structured left an important impression on the participants themselves.

Having interdisciplinary staff eg, physiotherapy, nursing, recreation, personal care staff in the program helped address the needs of participants. This allows for personal needs of the participant to be accommodated (eg, mobility, toileting, feeding issues). Participants commented positively on the incorporated physiotherapy consultation and customized fitness program, as well as the group exercises. The friendly and sensitive nature of the staff made a positive impression on participants and their family members. One participant stated, "The people, the help, the staff … It's hard to find such courteous and respect" (Older adult participant). Other participants stated that staff were "engaging", "pleasant" and "encouraging", and that the staff were one of the best aspects of the program.

Negative Aspects

Although there are many positive aspects of the program, participants did identify issues, challenges and aspects where improvements could be made to enhance participant experiences. While transportation was noted as a benefit of the program, there were issues with transportation, such as delayed pick-up times, which resulted in less time spent in program. Another aspect was the lack of follow-up from program staff after discharge from the program. Once participants are discharged from the program, they live independently at home where it is unknown if services like nursing, personal support or physiotherapy are in place. A sibling of a participant stated,

> [She] definitely needs homecare still but doesn't have any. She's still limited to what she can do. I am surprised they haven't had anyone come out and do a physical assessment after she'd completed [the program]. She really needs to have that assessment done.

Lack of follow-up elicited fear in participants to be on their own with little or no assistance. One participant stated, "I still think I need somebody around because I will fall down a few times" (Older adult participant). It was apparent from the participants that there were gaps through the hospital-to-home transition and support post-program completion.

System Level

As noted from the document review, the program is offered by an organization that houses the program within a regional health care system and is funded by the provincial government. Participants identified system-level components that impacted their perceptions of the program, specifically the need for more funding and capacity issues.

More Funding Needed

Participants discussed the perceived need for more funding which would allow participants to continue with the program beyond the four weeks. Many participants felt the four-week time limited program was too short and indicated a program that was longer or at least was more flexible would allow those who needed more time to benefit. One older adult participant summed up this sub-theme

> …On that note I think it might be a consideration if it was within feasibility with government funding and such to have this program longer than a month – some people might want to opt out after a month and say I'm good to go I've got my sea legs back I can be at home and I've got things to do – others maybe not, and then they find themselves in the same dilemma maybe a little physically stronger after the month here but not quite ready to be home alone without some structure.

Some participants and their family members described the potential benefits of continuing with the program and suggested a step-down approach. One participant stated that they "would have greatly benefited from continuing the program, perhaps two days a week" (Family member of participant). Other participants felt like the four weeks were too short – "The only thing I want to say is that it is too short" (Older adult participant); "Yeah I liked to go there longer" (Older adult participant). One participant suggested that a "longer program, like 6–7 weeks" would be beneficial because they were "making such fantastic gains." More funding for the program would allow for participants to have the flexibility to continue with the program beyond the four weeks that is currently covered by the health care system.

Capacity Issues

Related to the need for more funding was the capacity issue within the program, as the program allowed for 15 participants at any one time. Program participants share certain facilities with other groups. For example, the fitness centre where the program participants receive their physiotherapy session is shared with the organization's long-term care and residential apartment residents and community members who have fitness club memberships. This leads to the facilities and equipment being overcrowded. Older adult participants described this situation by stating, "the machines were not enough for all of the people that were there" and "it was very crowded."

Convergence of Program Evaluation Findings

A summary of how the document analysis, quantitative (program effects, observations) and qualitative (acceptability) findings converge is found in Table 6 and some key and additional findings are described below.

The types of activities observed and recorded aligned with the types of activities described in the program documents. However, participants noted a lack of information about the program that was provided to them in advance of attending, and highlighted the need to have more information about what the program entails and what to expect in terms of specific program structure and activities and services offered.

Participants described the wide range of activities and services offered as one of the positive aspects of the program. Participants discussed the program provided social engagement and they noted decreased loneliness; however, UCLA-LS scores did not change scores and were indicative of moderate loneliness at baseline and discharge. Some participants did note that they did not want to [chose not to] participate in some of the activities offered, as they were not aligned with their needs and goals. For example, more physical activity and exercise time versus social activities, although described as enjoyable in the focus groups and interviews, would have been preferable for some participants. These findings aligned with the amount of time spent in some activities and the extent of engagement observed.

While participants discussed that the cognitive activities and games were "engaging for the mind", we did not expect quantitative changes in MoCA scores and they were not observed. Participants did not specifically discuss psychological issues, such as depression or anxiety during the focus groups and interviews, or specific psychological benefits, rather improvements in general well-being were discussed. Group GDS and GAI scores were below cut-off for depression and anxiety at baseline and remained below cut-off at discharge. The percentage of participants who engaged in the various activities did diverge, with participation in physical activity and exercise having the greatest number of participants and the most amount of time. Pre-post changes were seen in scores for all mobility and physical outcome measures; and physical activity levels increased and the types of physical activities and exercises participants engaged in changed over the four weeks.

One of the stated program goals was to provide participants an opportunity to address their rehabilitation goals, however participants discussed that they were not asked about their specific goals. Participants noted the program was structured and had a particular structure that aligned with the document descriptions. This structure though results in lack of flexibility and individuality within the program, which some participants viewed as drawbacks. Similarly, the program

Table 6 Convergence of Program Evaluation Findings

Evaluation Question	Document Analysis	Observations	Quantitative Findings	Qualitative Findings
What are the demographic and other characteristics of the target recipients (program participants)?	Recently hospitalized older adults with one or more profile factors that made them ineligible for more specialized or a more intensive rehabilitation		• Participants had been hospitalized for a variety of reasons • Mean age = 78.3 years (10.1) • Debilitated, frail, multiple health issues: mean MoCA score below cut-off; multiple chronic conditions and medications; almost all using an assistive device; 40% had PSW at home; low SPPB and LSA scores and 6MWT distance walked at baseline	"What I started out not being able to do nothing …"
What are the core program components? Is the program being delivered as intended in accordance with the program model? How do the stated program components align with "real world" delivered program components?	Wheelchair accessible transportation at no cost, if needed; Refreshments, snacks, lunch; Nursing support for medication administration; Physiotherapy Group and individual exercise; Social activities; Cognitive activities; Self-management and health information sessions; Wound care if needed; Assistance with personal care if needed; Bathing program; Access to all available facility amenities eg, hair salon, foot care, fitness center Program Time: 9:00 a.m. to 3:00 p.m. Maximum length of stay = 30 days	• Observed participation in all Activity Categories Physical, Social, Cognitive, Health Care Related Services [Assessment/Management] • Care/Therapeutics • Health Education, Use of Facility Services [Other category] and activity sub-categories • Amount of time spent in Activity sub-categories varied: most participation time (mean) = aerobic exercise, least participation time (mean) = care/therapeutics 68.8% arrived between 9:30 and 10:29 a.m. 67.4% departed between 14:00 and 14:59 p.m.	Mean number of days = 20.5 (SD = 3.5)	Positive findings: • Range of activities enjoyable, interesting activities • Wide range of service • Free transportation, "They do pick up people in the community who otherwise would have no access" • Interdisciplinary program team members and staff; physiotherapy consultation. – staff were considered one of the best aspects of the program; friendly and sensitive nature of staff … "engaging", "pleasant", "encouraging"… • Personal needs accommodated eg, mobility, toileting, feeding issues; staff assumed participant care, decreasing caregiver burden. Negative findings: • Not individualized • Same program schedule for all, "As much as I enjoyed the talk and the socializing, it did not lead me to get better [physically]" • No individualized goal setting • Facilities and equipment overcrowded at times as space is shared with other organization programs • Lack of follow-up after program discharge • Issues with transportation, eg, delayed pick-up times, resulted in less time spent in program "The only thing I want to say is that it is too short" *a* "longer program, like 6–7 weeks" • Program structure change to allow continuing with the program or a step-down approach; "would have greatly benefited from continuing the program, perhaps two days a week"

(*Continued*)

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Table 6 (Continued).

Evaluation Question	Document Analysis	Observations	Quantitative Findings	Qualitative Findings
What are the potential participant-level outcomes of the program? What are the experiences and perceptions of the participants and their family members of the program and its components?		• 96.1% engaged in aerobic and resistance exercises • 69.7% engaged in group exercises • 86.8% engaged in balance exercises and other types of exercise • Vast majority engaged with other participants throughout the program day and during the activities; number of participants engaged in and participation time in structured social activities varied • Vast majority engaged in the structured cognitive activities	• Statistically and clinically significant change in SPPB, LSA scores and 6MWT distance walked • RAPA at discharge – fewer participants in the sedentary and underactive aerobic category; more participants in the underactive light and regular category; and more participants were engaged in both stretching and resistance exercise No change in UCLA-LS scores No change in MoCA scores	• Improved physical function mobility, strength, confidence • Customized fitness program, group exercises were positive aspects of the program Social well-being benefits, "I was very lonely and needed to get out of the house which is hard to do when it is winter. This program helped me look forward to seeing and talking with people" "[The program] is very interesting and it helps to keep your mind active and stuff, the games that there are playing… and the interaction with other people."

Abbreviations: 6-MWT, Six-Minute Walk Test; LSA, Life Space Assessment; MoCA, Montreal Cognitive Assessment; PSW, personal support worker; SPPB, Short Physical Performance Battery; UCLA-LS, UCLA Loneliness Scale.

documents noted self-management sessions as a component of the program, which would be very important as part of a comprehensive program. However, only half of the participants attended these sessions.

The program documents indicated the program runs from 9:00 a.m. to 15:00 p.m. and described pick-up time between 8:30 and 10:00 a.m. and departure time between 2:30 and 4:00 p.m. Observation data indicate almost one-fifth of participants arrived after 10:30 a.m. And over one-third (36.4%) departed before 2:30 p.m, differing from the time frame as described in the program documents. Participants noted that free transportation was a positive of the program but did describe transportation delay issues which affected arrival and departure times and in turn the amount of time in the program on a given day.

Discussion

This multi-pronged mixed methods program evaluation provides an understanding of the elements, components, program participants, evidence of and gaps in fidelity, and evidence of and gaps in acceptability, Overall, the elements of the short-term, community-based slow-stream rehabilitation program targeted towards older adults who are transitioning from hospital to home were being implemented as described, with some discrepancies noted. Program participants and their family caregivers described many benefits, including enhanced well-being and decreased caregiving burden and discussed the need for more resources to allow for more individualization of the program and within the program and expanded capacity. Positive trends in changes in physical outcome measure scores between program admission and discharge were observed.

There were similarities and differences between the program and its participants compared to other community-based, not-in-the-home, post-acute rehabilitation programs described in recent systematic reviews. The program accepts a mix of participants with various surgical and medical reasons for hospital admission, which is not common. It is a "stand-alone" community-based program ie, the program does not begin during hospitalization or an inpatient rehabilitation program with the same multidisciplinary team following participants across the rehabilitation trajectory, nor is it housed within an outpatient rehabilitation center. The four-week program timeframe is similar to the most common timeframe reported in the literature.[23,24] Participants attend daily during the week, and the mean time per day spent in the program was almost 4 hours, inclusive of lunch and refreshment breaks and resting and transition time. Wide variations of total timeframes (eg, less than four weeks to 44 weeks), frequency of sessions (eg, one outpatient session after an in-hospital session to six sessions per week over 12 months), and duration of rehabilitation sessions (15 to 120 minutes) have previously been reported.[23,24] While there was some overlap related to multidisciplinary team members eg, nursing, physiotherapy and program components and activities eg, exercises, education sessions detailed information about team members and activities were often specified and direct comparisons cannot be made. Some of noted differences reflect the specific target population a particular program eg, a dietician as part of the team to provide dietary counselling for people with cardiac conditions or education sessions on coping with dyspnea for those with pulmonary conditions.

The program participants' age range was similar to what has been previously reported in many studies. However, the program participants were more debilitated, with poorer function physical function at baseline and at discharge. Included studies in Verweij's systematic review[23] that used the 6MWT distance as an outcome measures reported distance walked ranging from 328.77 metres (SD = 85.22) to 386.6 metres (SD = 129.97) post-intervention, distances up to twice as far as the program participants walked at discharge.

Program participants' mean MoCA scores were indicative of mild cognitive impairment. Cognitive status of older adults participating in not-in-hospital or rehabilitation facility or not-in-home post-acute rehabilitation programs has not been consistently reported, and when reported participants with below cut-off scores for cognitive impairment are often not included.[23,24] Given the aging population and increasing rates of dementia, cognitive impairments should not automatically preclude older adults from participating in rehabilitation programs. It is often thought that older adults with cognitive impairments do not benefit from rehabilitation or that rehabilitation potential is very limited. Although cognitive impairment may have an impact on the extent of gains following rehabilitation, even those with cognitive impairment do make gains, often significant.[79,80] Participants with lower MoCA scores and GDS scores indicating depression (mild) did withdraw from the program during the program evaluation period. These findings speak to the need for program screening for mental health and cognitive status prior to program enrollment. Individuals with mental health

conditions may need medical and psychological management to be able to fully participate in program activities and those whose cognitive profile warrants the need for a different program or additional care and services can be identified.

At discharge clinically and statistically significant changes were seen in 6MWT distance, and SPPB and LSA scores; and RAPA categories shifted to including stretching and resistance exercises and fewer participants were in the sedentary and inactive aerobic exercise categories. As well, physical improvements were also described by the participants during the interviews and focus groups. Changes in the RAPA is important to note as post-hospital participation rates in older adults is typically low, even within formal exercise and physical activity programs,[81] despite known physical, cognitive and other health benefits. The pre-post change in 6MWT distance in the program participants is noteworthy given the slow-stream nature of the program and its 4-week timeframe, as an average increase of 23 metres on the 6MWD test at three months post discharge following an acute illness has been reported in older adults undergoing post-hospitalization rehabilitation. Although there were statistically and clinically significant improvements in SPPB, LSA, and 6-MWT distance at discharge, the scores and distance walked at baseline were very low (admission to the program), indicating the participants were physically frail[64,82] and debilitated post-hospital discharge. Further, scores remained low and limited at discharge from the program. A SPPB score less than or equal to 6 is indicative of severe disability,[54] and SPPB scores between 4 and 6 increased the relative risk of developing a future mobility impairment by 2.9 to 4.9.[83] Hospitalization for older adults is a stressful event with significant adverse effects - those who are frail and debilitated are even more vulnerable. The physical discharge status of the program participants underscores that these individuals are at increased risk for re-hospitalization and morbidity and further emphasizes the need for 1) appropriate hospital discharge assessment and risk stratification; 2) evidence-based discharge decision support tools and care pathways to ensure effective post-hospital discharge management; and 3) extended, additional or ongoing hospital-to-home transition programs and services, which include rehabilitation and sufficient supports and follow-up if older adults are to remain in their homes in the community.

Only pre-post changes in physical outcome measures were seen. The vast majority of participants engaged in aerobic and resistance exercises, spending the most amount of time in the program engaged in these and other group and individual exercise sessions. This was not surprising, as physical function-related goals eg, regaining mobility or walking ability or independence are commonly cited goals of most importance by older adults early on during post-acute in-patient rehabilitation.[84,85] But goals do shift to including engaging in leisure activities and hobbies once home.[84] Lack of individualization within the program was discussed by participants, as was not being asked about goals. Some participants noted that while enjoyable in the moment, the specific types of social and other program activities were not their needs or goals to be of benefit to them physically. While setting goals is considered fundamental in rehabilitation, most often in practice in older adult rehabilitation, goal-setting is health professional-led.[84] This is a missed opportunity for understanding individual values, motivations and priorities for care and interventions.

Development, implementation, and sustainability of any intervention, service or program is dependent on several factors, including health and social system contexts, structures, and processes, stakeholders, resources, infrastructure, financial and other supports, and real-world effects. The program components are multi-factorial in attempts to broadly address an older adult population with complex health needs who have been recently discharged from hospital. The one-size-fits-all program approach is framed by context and available resources to address the broader needs of the target population. However, this approach may not be most effective in addressing the specific needs and goals of program participants. Some participants noted that a different program model, such as allowing for more than four weeks or a step-down approach, would be beneficial. The extent to which adding flexibility to the program is possible, to address individual needs, would be important to explore, but may be limited by system, organization, and other constraints.

Similar to the work of others,[5,9,86–88] our findings stress the need for continued rehabilitation, supports, and services are needed for older adults who are discharged from the hospital to home in the community and suggest further research to explore the effects of the community-based, slow-stream rehabilitation program is warranted. Older adults, caregivers, and policy makers consider maximization of time spent "aging in place" in the community to be of critical importance. The program participants and their family caregivers noted many positive aspects of the program, as well as benefits, including improved physical capabilities and increased confidence. To what extent the physical improvements alone are sufficient and can be sustained post-program discharge to maintain safe, independent living in the community has yet to be determined and should be explored. Continued poor physical function following hospitalization places frail older adults and adults with complex

health needs at significant risk for adverse events including re-hospitalization, increased disability, morbidity and mortality, and institutionalization. However, improving physical function is only one factor to consider.

Reported effects of post-acute rehabilitation programs and interventions for older adults with complex health needs, including frail and pre-frail older adults, on outcomes have been mixed[21–23,89,90] and methodology used problematic,[22,23] eg, some studies found reduced admission rates at six months, but not at other time points; favourable cost-effectiveness has been demonstrated, but outdated economic evaluation methods were used. Work to date highlights the vast variations and heterogeneity of programs for older adults post-hospitalization, as well as their participants and program components. Variations are indicative of how programs are situated within government priorities, health and social policies and funding, and system organizations across the globe. The vast heterogeneity in the literature speaks to the need for methods and methodology that can best determine "what works", "for whom", "under what circumstances", and "how"[89,91] as researchers continue to be challenged to develop effective rehabilitation care models and program components that are most beneficial in supporting the needs of older adults and the complexities of hospital-to-home transition programs and community-based aging in place. As the population ages, the need for rehabilitation programs and services will also increase and governments and health and social systems globally will also be challenged to sufficiently resource programs for growth and sustainability.

Strengths and Limitations

Engaging stakeholders and representing their needs and interests is fundamental to program evaluation.[27,32] The program evaluation plan was developed in consultation with the organization and program administrators and staff. The resultant multi-pronged and mixed methods evaluation components reflected the identified priorities and resultant information staff deemed useful at the time and data collection methods considered feasible.

A decision was made not to collect potential specific individual participant- or program-related issues and challenges "in the moment", so as not to interfere with program activities and to decrease data collection burden. We did not ask program participants about their reasons for choosing to participate in a particular activity or not during the observations, nor did we collect information as to the specific reasons for differing arrival and departure times each time they occurred. Rather, this information was garnered during the interviews and focus groups and assessed collectively.

We did not examine longer-term outcomes, such as readmission rates, mortality, hospitalization, health care costs, rates of institutionalization, as they were not identified as initial priorities. Some of these types of outcomes align with the stated program goals, so it would be important to focus on these outcomes with future program evaluations.

We did not set out to identify participants who were frail, as defined by a particular frailty-specific instrument. However, the participants were debilitated and frail, described by Morley,[82] and as indicated by low SPPB[64] and LSA scores and 6MWT distance walked, which reduced the variability in scores. To describe and align with what was representative of the program eg, "real world" practice, we used a sample of convenience and no participants were excluded based on cognitive status (MoCA scores), age, mobility or physical status or number of comorbid conditions. Convenience sampling is a limitation. We examined pre and post changes in outcome measure scores to exam potential effects from baseline to discharge. While studies have found that physical function is slow to recover, if it does recover post-hospitalization,[5,9,86–88] not conducting a randomized control trial to examine potential effects makes it difficult to be definitive about the reasons for the positive trends in improvement of scores, as natural history improvement may have been a factor. Although we reached our target sample size for the pre-post study, participants were removed from analysis because they withdrew from the program or withdrew from the study. Lack of randomization and drop-outs may have introduced selection and attrition bias.

Conclusion

Unique models of community-based post-hospitalization rehabilitation programs have the potential to play a key role in mitigating risks and maximizing mobility, function, and physical and psychosocial resilience in older adults who are transitioning from hospital to home. This mixed methods program evaluation demonstrated evidence of fidelity and acceptability and positive trends in improvement in physical function outcome measure scores, as well as fidelity and acceptability gaps. Information about program strengths and areas for improvement can be used to inform program

refinement and enhancement, such as more tailored and individualized program components to improve participants' experiences. Further robust exploration of program effectiveness, program changes, longer-term benefits, cost-effectiveness and strategies to address identified program fidelity gaps are important next steps.

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