

Canadian Geriatrics Society

PRINCIPLES OF REHABILITATION POTEN-TIAL IN THE OLDER ADULT

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Abstract

Older adults are at risk of developing functional decline and disability following hospitalization. Rehabilitation is an intervention aimed at restoring physical and mental abilities that have been lost, and to help attain the highest possible function and quality of life. Assessing rehabilitation potential is a complex decision-making process that allows one to identify older adults who are likely to benefit from rehabilitation interventions, which is often defined as returning to community living after rehabilitation. This assessment is multidisciplinary and must consider physical, cognitive, psychological, social, and environmental factors. Predictors of community discharge after rehabilitation in older adults include higher level of cognition, better mobility at admission to rehabilitation, higher level of functional independence at baseline, lower multimorbidity, fewer acute care hospitalization days, and greater social support.

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Key Points

Factors associated with a community discharge in older adults admitted to inpatient rehabilitation include higher level of cognition, better mobility at admission to rehabilitation, higher level of functional independence at baseline, lower multimorbidity, fewer acute care hospitalization days, and greater social support.

In patients over age 90, higher functional independence at admission to rehabilitation and <u>fewer prescribed</u> <u>medications at admission to rehabilitation</u> are associated with community discharge, while multiple comorbidities, previous hospital admissions in the past year, and lack of social work involvement are associated with readmission.

In the stroke population, older adults are more likely to be discharged in the community if they have a higher level of functional independence at admission to rehabilitation and higher Functional Independence Measure (FIM) at discharge.

Introduction

Population aging is a defining demographic trend in Canada. Older adults (over 65 years old) currently represent 18.5% of the population. This percentage is expected to increase to approximately 22% by 2030. Older adults are at risk of developing functional decline and disability following hospitalization. Rehabilitation interventions are necessary to support them in their recovery from acute illness or injury. Healthcare professionals are frequently required to make recommendations regarding a patient's likelihood of benefitting from rehabilitation interventions: to determine the "rehabilitation potential." Decisions about rehabilitation potential can significantly impact patient care and functional trajectory, dictate the type and amount of rehabilitation they will receive, and determine resource allocation.

This article reviews predictors for successful outcomes following rehabilitation for older adults, the process and components of the evaluation of rehabilitation potential and presents criteria that can be used in clinical practice to make decisions regarding admission to rehabilitation.

What is geriatric rehabilitation?

Rehabilitation is an intervention aimed at restoring a person's physical and mental abilities that have been lost due to an illness or injury, and to help attain the highest possible degree of functioning and quality of life. Younger individuals usually require rehabilitation in the context of an acute event leading to disability and benefit from disease-specific rehabilitation. Older adults are more likely to have pre-existing disabilities due to underlying comorbidities and geriatric syndromes, and require a rehabilitation approach that is comprehensive and considers their complexity. Goals of rehabilitation in younger adults are commonly centered around reentering the workforce or studies, while the focus in older adults is often recovery of autonomy and mobility.

Geriatric rehabilitation was recently defined by the Geriatric Rehabilitation Special Interest Group of the European Geriatric Medicine Society (EuGMS) as "a multidimensional approach of diagnostic and therapeutic interventions, the purpose of which is to optimize functional capacity, promote activity and preserve functional reserve and social participation in older people with disabling impairments." This definition follows the World Health Organization's (WHO) international classification of functioning, disability, and health (ICF) framework, and considers not only the medical aspects of functional impairment, but also the social impact of disability. ⁹

Geriatric rehabilitation is available in various care settings, both inpatient and outpatient, and can be administered in acute care hospitals, rehabilitation centers, and long-term care. 10, 11 Common admission diagnoses include stroke, hip fracture, post orthopedic surgery, musculoskeletal diseases such as osteoarthritis, movement disorders, oncological diseases, and cardiopulmonary conditions. 10, 12

Geriatric rehabilitation is carried out by a multidisciplinary team, led by a geriatric rehabilitation skilled physician.^{8, 13} Core members include skilled nurses, physiotherapists, occupational therapists, and social workers.

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Extended team members may include pharmacists, psychologists, dieticians, and speech language pathologists, depending on the needs of the patients and local rehabilitation resources and models.^{8, 13}

What are successful outcomes of rehabilitation?

Returning to community living from rehabilitation is considered a successful outcome and is used in studies of rehabilitation programs as an indicator of quality of care.^{14, 15} Admission to long-term care facilities from rehabilitation is considered an unsuccessful outcome.^{14, 15}

Kus et al. assessed patient perspectives for defining rehabilitation success and identified "walking," "getting rid of pain," "autonomy," and "returning home" as the most important patient centered goals. 16

The Functional Independence Measure (FIM) (https://www.va.gov/vdl/documents/Clinical/Func Indep Meas/fim user manual.pdf) The Functional Independence Measure (FIM) is an 18-item score that is frequently used at admission and discharge from inpatient rehabilitation and is employed in the literature to characterize patients' functional trajectory in rehabilitation. The It assesses 6 areas of function: self-care, sphincter control, transfers, locomotion, communication, and social cognition. Higher scores on the FIM signify better function and therefore can be an indicator of successful rehabilitation. A positive change in FIM score between admission and discharge, as well as FIM efficiency, which is the total FIM change during admission divided by the length of stay, are also used to measure rehabilitation success. The minimal clinically importance difference (MCID) in FIM instrument varies depending on the population in which it is used. The FIM as a tool is well established in the stroke population. The MCID of the FIM in adults of all ages admitted to inpatient rehabilitation was estimated at 22 points. The MCID of the FIM in adults of all ages admitted to inpatient rehabilitation with hip fractures.

What are predictors for successful outcomes of geriatric rehabilitation?

Factors associated with discharge back to the community in older adults admitted to inpatient rehabilitation include; higher level of cognition, better mobility at admission to rehabilitation, higher level of functional independence at baseline, lower multimorbidity, fewer acute care hospitalization days, and having greater social support. ²⁵⁻²⁸ In patients above age 90, higher functional independence at admission to rehabilitation and fewer medications prescribed at the time of admission to rehabilitation are associated with community discharge, while multiple comorbidities, previous hospital admission in the past year, and lack of social work involvement are associated with readmission to hospital. ²⁹ In the stroke population, older adults are more likely to be discharged to the community if they have a higher level of independence at admission to rehabilitation and higher FIM at discharge. ^{30, 31}

What is the process and the components of the assessment of rehabilitation potential?

Rehabilitation potential assessments are typically completed by a multidisciplinary team of rehabilitation professionals, including physiotherapists, occupational therapists, physicians, and rehabilitation nurses.^{32, 33} The assessment can occur in different settings including outpatient clinics, intermediate care units, acute care units, day hospitals, and long-term care.³² The assessment of rehabilitation potential should be performed over multiple time points, and ideally, when acute medical issues are approaching resolution given that acute medical issues, such as delirium, may affect a patient's ability to participate in rehabilitation interventions.³³ Components of assessments of rehabilitation are presented in Table 1.^{32, 33}

Table 1. Components of and tools for the assessment of rehabilitation potential

| Component Details of the evaluation Tools Diagnoses and medications Active diagnoses and comorbidity Index (Index Comorbidity) Medical stability Medication review Cumulative Illness Rating Scawww.mdcalc.com/calc/10088/scale-geriatric-cirs-g Nutritional status Continence Communication abilities: vi- | ty-index-cci) le (<u>https://</u> | |
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| Communication abilities: vi- | | |
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| (baseline and current) Instrumental activities of dai- assets/about/scn/ahs-scn-bjh adls.pdf adls.pdf | -hf-barthel-index-of- | |
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| Grip Strength (https://www.jcepdf/10.2519/jospt.2018.785 | | |
| Timed Up and Go Test (https: assessments/timed-up-and-go | <u>//strokengine.ca/en/</u> o-tug/) | |
| Short Physical Performance Bageriatrictoolkit.missouri.edu/S | | |
| Berg Balance Scale (https://wimages/b/bd/ | | |
| Cognition and psy- Cognition* Berg balance scale with inst Mini Mental State Examination | | |
| chological ability | I (MMSL) | |
| Behaviors Montreal Cognitive Assessmen | nt | |
| Motivation Geriatric Depression Scale (ht | | |
| geriatrictoolkit.missouri.edu/c GDS_SHORT_FORM.PDF_) | <u>:og/</u> | |
| Nutrition Nutritional status Mini Nutritional Assessment (| nttps://www.mna- | |
| elderly.com/sites/default/files english.pdf) | | |
| Malnutrition Screening Tool (<u>I</u> | https://sscbc.ca/sites/ | |
| default/files/SPH%20Malnutrit 20Tool%20%28MST%29%20 | tion%20Screening% pdf%20%28ID% | |
| 20315681%29.pdf) | | |
| Environment Usual place of residence | | |
| Proposed rehabilitation venue | | |
| Projected realistic discharge destination that can support anticipated needs | | |
| Social Social support mechanisms | | |

^{*}Cognitive testing performed in the acute setting may result in falsely low scores due to acute illness and may not reflect the true cognitive baseline.

Are there comprehensive rehabilitation potential assessment tools?

Multiple assessment tools exist to inform decisions regarding rehabilitation potential in older adults. Examples are presented below. While optional, these instruments, together with those listed in Table 1, may assist the clinician in providing additional objective measures to the rehabilitation potential assessment. They may also aid clinicians in systematically structuring their assessments. It should, nevertheless, be noted that these tools primarily consider physical function and do not capture the entire complexity of psychological, social, and economic circumstances. Therefore, the clinical team's judgement and holistic evaluation remain essential in this multifaceted decision-making process.

The Minimum Data Set for Post-Acute Care (MDS-PAC) (https://www.aapacn.org/resources/rai-manual/) is a comprehensive, standardized instrument designed to guide care planning in the rehabilitation setting. It incorporates the needs, strengths, and preferences of older patients admitted to rehabilitation. The assessment includes evaluation of multiple key domains in older adults requiring rehabilitation: cognition, communication/hearing, vision, mood and behavior, social function, physical performance, continence, comorbidities, nutritional status, dental status, skin integrity, and medications. The cognitive performance scale and the performance in ADL scale of the MDS instruments demonstrate good validity compared to commonly used scales, such as the MMSE and Barthel Index (https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-bjh-hf-barthel-index-of-adls.pdf). The instrument also demonstrates good interrater reliability. The instrument also demonstrates good interrater reliability.

The Rehabilitation Potential Assessment Tool (RePAT) (https://bmcgeriatr.biomedcentral.com/ articles/10.1186/s12877-022-03420-w#MOESM1) is a 15-item questionnaire developed at Nottingham University to promote structured patient-centered rehabilitation assessments in the acute care setting. The tool was specifically designed for older adults. A feasibility study conducted amongst physiotherapists, occupational therapists, patients, and caregivers demonstrated that its implementation in clinical practice was feasible and acceptable in addition to usual care. Further research will aim to determine how well the tool can predict rehabilitation success.

The Gait, Eyesight, Mobility, Mental state, Sedation (GEMS) tool (https://onlinelibrary.wiley.com/doi/10.1111/j.1447-0594.2010.00626.x) and the Hospital Admission Risk Profile (HARP) (https://agsjournals.onlinelibrary.wiley.com/doi/abs/10.1111/j.1532-5415.1996.tb00910.x?sid=nlm%3Apubmed) are two instruments designed to identify older adults at risk of functional decline and discharge to a facility following an acute care admission. 37, 38 They allow early identification of patients who could benefit from targeted interventions or a more prolonged rehabilitation course to avoid the outcome of discharge to long-term care.

What criteria can be used in clinical practice to determine rehabilitation potential?

A recent study aimed to develop criteria that can be applied in clinical practice to guide decisions regarding rehabilitation potential.³⁹ We reviewed their recommendations and suggest the practical criteria listed in Table 2. The purpose of these criteria is to structure the decision-making process of clinical teams around a patient's rehabilitation potential. While meeting all criteria is not necessary for a patient to be considered for rehabilitation, the evaluation should demonstrate that the patient can tolerate rehabilitation, is motivated to participate in such a program, and that the prognosis of rehabilitation is favorable.

Table 2. Appropriate criteria for admission to geriatric rehabilitation

| | Criteria |
|----|--|
| 1. | The patient is medically stable. There are no active or unresolved medical issues that may affect or interfere with rehabilitation. The patient could safely withstand a rehabilitation program.* |
| 2. | The patient demonstrates motivation to participate in a rehabilitation program. |
| 3. | The patient experienced an acute episode of functional decline, which resulted in diminished ability to care for IADLS and/or ADLs. The patient is no longer at their functional and/or mobility baseline. |
| 4. | The patient requires an integrated multidisciplinary approach to optimize their function. |
| 5. | Functional improvement with rehabilitation is conceivable. The proposed rehabilitation program is likely to be effective. |
| 6. | If there is limited potential for functional recovery, a rehabilitation program is likely to reduce the patient's degree of disability. |
| 7. | Social support mechanisms can be put in place for the patient's needs to be met in the community following rehabilitation. |

^{*}Rehabilitation streams of different intensities for older adults may exist depending on the province and city. The multidisciplinary team will issue recommendations regarding the most appropriate stream.

Conclusion

Geriatric rehabilitation is a multidimensional intervention aimed at optimizing functional capacity, functional reserve, and social participation of older adults following illness, or injury. The assessment of rehabilitation potential allows clinicians to select patients who are most likely to have a successful course in rehabilitation, experience functional improvement, and be discharged back to the community. The assessment relies on a careful multidisciplinary evaluation that considers cognition, motivation, social supports, mobility, and current and baseline function. Table 2 can be used to frame that assessment.

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