Principles of rehabilitation of older people

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Abstract

Rehabilitation of older adults involves an active process, delivered through a coordinated multidisciplinary team approach, that aims to improve function and enable subjects to live their lives to the fullest potential. Frail, older adults are particularly vulnerable to functional decline as a result of illness, and rehabilitation is an essential part of medical care for this population. The science of rehabilitation has developed considerably following the seminal work of pioneers such as Marjory Warren. Meta-analysis of the published rehabilitation research confirms the benefits of comprehensive multidisciplinary assessment and rehabilitation for frail or dependent older adults; when delivered in hospital, it improves physical function and reduces mortality, whereas in community settings it reduces the risk of care-home or hospital admission.

Keywords Comprehensive geriatric assessment; geriatric medicine; older adult; rehabilitation

Key points

- Rehabilitation using a comprehensive geriatric assessment (CGA) approach is an effective intervention. There is robust evidence to show decreased mortality and improved functional outcomes when CGA is used for hospitalized, frail older adults
- Rehabilitation is a process that should begin at admission, should continue throughout the admission and may guide subsequent chronic disease management on discharge
- Effective rehabilitation is delivered by a multidisciplinary team. The medical component of rehabilitation is essential to ensure that disease contributing to functional problems is diagnosed and treated

Introduction

Rehabilitation carries the basic aim of assisting people with disabilities to improve, recover or limit decline in physical, mental and social skills.[1] The King's Fund defines rehabilitation as 'a process aiming to restore personal autonomy in those aspects of daily living considered most relevant by patients or service users and their family carers'.[2] Specific elements are common to most working definitions of successful rehabilitation programmes in older adults (Table 1).

Rehabilitation is a hugely important intervention for older people because of the high incidence and prevalence of disability in old age. Factors contributing to the high burden of disability in this sector of the population include the increased prevalence of chronic disabling disease (overt and covert), the potential rapid deterioration in function with acute illness, and vulnerability associated with reduced physiological and homeostatic reserve. Extrinsic risk factors include physical inactivity, poor diet and cigarette smoking, with ageing itself an independent risk. These multiple influences contribute to an exponential increase in the prevalence of more severe disability with advancing age; the prevalence of serious disability in England has been estimated at around 33% in men and 42% in women over 85 years.

Contemporary concepts of rehabilitation of older adults are rooted in the work of geriatric medicine pioneers such as William Ferguson Anderson and Marjory Warren. In the chronic sick beds of West Middlesex County Hospital, Warren developed a process of holistic assessment that guided multidisciplinary intervention. The success of this novel intervention was borne out by the fact that many of Warren's 'incurable' patients returned home.

Concepts of disability

The biopsychosocial model of disability emphasizes three main constructs as potential contributors to disability. In the *biological* domain, examples of important diseases causing disability include osteoarthritis and stroke; *psychological* factors that are most often seen include anxiety, low mood and depression; important *social* factors include home environment and personal contacts with other people.

Using the terminology of the World Health Organization, *pathology* (commonly multiple) causes *impairments* in function; these impact on *activity* (disability) and ultimately inhibit *societal participation*. All these domains potentially play a highly significant role in human functioning in the varying contexts of specific diseases or illnesses. It is therefore apparent that all should be addressed in rehabilitation if the best outcomes are to be achieved.

Comprehensive geriatric assessment

The definition of comprehensive geriatric assessment (CGA) initially offered by Rubinstein ('a multidimensional interdisciplinary diagnostic process focused on determining a frail elderly person's medical, psychological and functional capability in order to develop a coordinated and integrated plan for treatment and long term follow up') remains generally applicable. The main domains assessed in CGA are listed in Table 2, and their interrelationship is illustrated in Figure 1.

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Elements of successful rehabilitation in older adults

- Geriatric rehabilitation involves multiple disciplines with differing expertise, working as a team with the patient to enable a holistic, individualized focus
- Geriatric rehabilitation is not (usually) a single intervention
- There are multiple potential triggers to geriatric rehabilitation, but a final common goal is to impact on functioning, enabling patients and carers to live their lives to the fullest potential
- In hospital, geriatric rehabilitation should begin at admission and often continues beyond discharge

Table 1

Comprehensive geriatric assessment for older adults admitted to hospital

The Cochrane systematic review of CGA in hospital summarizes data from 22 randomized controlled trials with more than 10,000 participants from six countries.[1] Patients allocated to undergo CGA were compared with those allocated to general medical care. With CGA, patients were more likely to be alive and in their own homes after 12 months (odds ratio (OR) 1.16, 95% confidence interval (CI) 1.05–1.28), less likely to be institutionalized after acute hospital care (OR 0.79, 95% CI 0.69–0.88), less likely to suffer death or deterioration (OR 0.76, 95% CI 0.64–0.90) and more likely to experience improved cognition.

Subgroup analysis suggested that the benefits were associated primarily with care delivered on *dedicated, specialized CGA wards*. A systematic review of nine randomized controlled trials found that people admitted to acute geriatric units had a lower risk of functional decline at discharge (OR 0.82, 95% CI 0.68–0.99) and were more likely to live at home after discharge (OR 1.30, CI 1.11–1.52) compared with those admitted to standard general medical care facilities.[3] This finding is consistent with knowledge regarding the effective implementation of specialist care in general; for example, a roving team with an advisory role often finds it difficult to change long-established behaviours on other wards.

Key components of CGA

- Medical contributors to disability/multimorbidity
- Cognition and language (delirium, dementia, dysphasia)
- Psychological state including mood and anxiety
- Vision
- Hearing
- Swallowing and the mouth
- Nutritional state
- Basic activities of daily living, physical function
- Continence
- Extended activities of daily living
- Risk assessment (falls, pressure sores)
- Social circumstances including home environment and network of support and contacts
- Caregiver stress

Table 2

Another important factor in success of CGA is effective *communication* between the multiple members of the team. Here, the importance of the *interdisciplinary case conference* cannot be overestimated. This appears to be a key component of proven systems of CGA in hospital. It requires medical involvement as well as the involvement of other key disciplines including nursing, physiotherapy, occupational therapy and social work. Some patients benefit additionally from dietetics or speech and language therapy input. As a general process, face-to-face meetings of the team should take place at least weekly.

Patients who are most likely to benefit from in-hospital CGA include those who present with general issues, including physical disability, non-specific disease presentations (the 'geriatric giants' of immobility, instability and falls, incontinence and impaired cognition – delirium and/or dementia), frailty and multimorbidity. The precise criteria used to select patients for CGA and the means by which they are brought into effective operational practice remain controversial. Perhaps the simplest process involves identifying those with physical disability (many of whom have a mix of the above additional problems). Local resources determine where the line is drawn in selecting patients for CGA; if resources are limited, services should be directed at patients with highest need.

Community-based interdisciplinary care and rehabilitation

Evidence to support rehabilitation for community-dwelling older people was collated in a systematic review of 89 randomized controlled trials including 97,000 people.[4] Those who were given multifactorial care and rehabilitation had reduced nursing home admissions (OR 0.87, 95% CI 0.83–0.90) compared with those who did not. Falls and acute hospital admissions were also reduced, but there was no reduction in deaths. The intervention was generally directed at higher risk older people with problems of activities of daily living, cognitive impairment or falls, and was usually coordinated by specialists in geriatrics or primary care physicians with an interest in older people.

There is no strong evidence to establish whether the intensity of intervention is important. This is not surprising given the variability of patient needs. For some, it is sufficient to establish coping strategies that minimize risk, including adaptation of the home environment (e.g. to reduce falls), and arranging appropriate home support services such as home helps. However, some individuals also require active rehabilitation to relearn key tasks or improve their exercise capacity.

Role of different disciplines in rehabilitation of older people

The members of a rehabilitation team vary depending on local services, the available skills mix and the needs of the client group. It is usual to have a core membership of physicians, nurses, occupational therapists and physiotherapists. Wider expertise (e.g. dietitians) may be required, but availability can vary. The dynamics of the rehabilitation team depend on the clinical context. For patients with an acute decline in function in the context of illness and co-morbidity, medical staff often lead the team. With time, medical problems may be stabilized and other issues may predominate; at this time, other team members may take a lead role in coordinating and directing the focus of rehabilitation.

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