

Managing Frailty as a Long-Term Condition

Abstract

Frailty is a distinctive late-life health state in which apparently minor stressor events are associated with adverse health outcomes. This article considers how the conceptualisation of frailty as a long-term condition offers new management approaches based on systematically applied preventative and proactive interventions.

Frailty shares the key features of the common long-term conditions: it can be ameliorated but not cured; it is costly at an individual and societal level; it is progressive; it impacts adversely on life experience; and it has episodic crises. The recognition of frailty as a long-term condition is not merely a semantic issue - a wide range of benefits can be anticipated. Primary care-based registers for frailty could be established and chronic disease models applied systematically for co-ordinated and person centred preventative and proactive care. A team approach is a key component of long-term condition management, incorporating support, follow-up and behaviour change interventions which go beyond the scope of a traditional medical approach. This approach would ideally require changes in secondary care to embrace greater community-based working and closer relationships with the primary health and care team.

Although our understanding of interventions to modify or treat frailty has improved, there is considerable scope for further development. Identifying frailty as a long-term condition would be an important step in distinguishing people with frailty as a discreet population for new research.

Introduction

Frailty is a distinctive late-life health state in which apparently minor stressor events are associated with adverse health outcomes. The two established international models are the frailty phenotype[1] and the cumulative deficit model,[2] both of which have been validated in large population cohort studies. The models identify people at increased risk of a range of adverse outcomes including dependency, institutionalisation and premature mortality. There is statistical convergence between the models that lends support for the recognition of frailty as a unified condition.[2-4]

Despite frailty being common in older age, and independently associated with important adverse outcomes, it is not routinely identified and coded in primary or secondary care in the manner in which has become usual practice for long-term conditions. As a result, frailty is not a visible condition for health service planning and delivery. The purpose of this article is to provide an analysis of the arguments for considering frailty in older people as a long-term condition, and to explore what this might mean in terms of a more proactive, preventative health and social care response.

Frailty as a long-term condition

A long term condition (LTC) is defined as: “a condition that cannot, at present, be cured but can be controlled by medication and/or other treatment/therapies”. [5] The commonest LTCs (e.g. chronic obstructive pulmonary disease, diabetes, chronic heart failure, osteoporosis, dementia) are progressive and impact adversely on quality of life. Thus, people with LTCs account for the majority of inpatient bed days, outpatient appointments and, consequently, healthcare spending. [5] In recognition of this, LTCs internationally have received considerable attention in health and care planning. [6] Typically, each LTC has attracted disease specific management guidelines and care pathways designed to reduce variations in care and improve outcomes at lower cost. Frailty shares the key features of the common LTCs: it cannot, at present, be cured; it is costly at an individual and societal level; it is progressive; it impacts adversely on life experience; and it has episodic crises.

Frailty can be controlled through appropriate treatment

Our understanding of how to modify and potentially control frailty is growing. A systematic review of cohort studies investigating functional decline in late life identified 14 risk factors, the majority of which are modifiable [Box 1]. [7] Indeed, there has been considerable interest in intervention studies designed to modify risk factors for delirium as a common manifestation of frailty. These studies have demonstrated that substantial reduction in delirium is possible, and a clear association between delirium occurrence and frailty has been reported. [8]

A systematic review and meta-analysis of comprehensive geriatric assessment (CGA) for hospital inpatients reported improved rates of independence at discharge and decreased institutionalisation and mortality. [9] A proportion of the included trials were conducted before reference standard models of frailty were established, but a subgroup analysis reported that results were robust for needs-based services, which would be expected to consist mainly of older people with frailty.

A common important outcome of CGA is a period of physical rehabilitation. Evidence from intervention studies in community and long-term care settings supports the value of physical rehabilitation for improving mobility and physical function for people with frailty. [3] Sarcopenia and malnutrition are recognised as common challenges in those who are frail. [10] Ensuring adequate nutrition and tailored exercise are recognised effective interventions. [11] These findings suggests that aspects of the frailty phenotype might be modifiable.

Inappropriate medications, adverse effects and side effects are common in older age. Older people with frailty have altered pharmacokinetics[12] so it is especially important that clinicians prescribe judiciously in this group. Polypharmacy is a key component of the Edmonton Frail Scale[13] and polypharmacy has been independently associated with frailty, defined using the phenotype model.[14] A 2013 international consensus report on frailty extends these arguments and advocates treatment for frailty with exercise, protein-calorie supplementation, vitamin D and reduction of polypharmacy.[15]

Frailty is costly for the individual and wider society

Frailty is an independent predictor of falls, delirium, disability, hospitalisation and care home admission.[1, 3, 16] In addition to the negative impacts these experiences can have for an individual, they carry significant societal cost. Falls in older people have been estimated to have an annual cost of £981 million in England, of which 59% were borne by the NHS.[17] An episode of delirium is associated with a 2.5 fold increase in costs of inpatient care,[18] and the costs of admission to long-term care are significant.[19]

Frailty is progressive

Frailty can be considered as a spectrum disorder with increasing risk of adverse outcomes relating to increasing frailty.[3] It is typically progressive, with transition to a level of worse frailty more common than improvement.[20] The cumulative deficit model of frailty identifies frailty on a continuum, whereby frailty becomes evident as the result of the lifelong accumulation of a range of deficits, which can be clinical signs, symptoms, disease states and disabilities.[21] The concept of pre-frailty is well established and this has been estimated to affect around half of community dwelling and hospitalised older people,[1, 22] indicating a significant proportion of individuals at risk of future frailty. Advanced frailty is associated with a progressive increase in functional dependence which accelerates prior to death.[23]

Older people with frailty experience episodic deteriorations

Older people with frailty are at risk of sudden and disproportionate deteriorations in health following seemingly minor stressor events such as an infection, dehydration or an adverse effect relating to a new medication.[3] The health deteriorations are manifested as the hyper-acute clinical syndromes of falls, delirium, sudden onset immobility and are leading causes of hospital admission in older age which have been associated with worse outcomes in the presence of frailty.[8, 24]

The detection of frailty

A systematic review identified several simple tests which have been validated against the international frailty reference standards and which could be used to identify frailty in routine clinical practice. Slow

gait speed, Program of Research to Integrate Services for Maintenance of Autonomy (PRISMA 7) (a self-assessment questionnaire) and the timed get-up-and-go test are highly sensitive for identifying frailty[25] and may be used by health and social care professionals to identify frail individuals and, if uncertainty remains, consider referral for a more detailed assessment.

Relevance of existing models of LTC management for frailty

The 2002 World Health Organization (WHO) report 'Innovative Care for Chronic Conditions' outlined eight key components for effective healthcare for people with LTCs.[26] Four components are particularly pertinent for modern healthcare systems in relation to frailty: (1) support a paradigm shift that moves away from acute and episodic healthcare in favour of better-supported chronic care models within primary care; (2) build Integrated health care which includes effective information sharing between settings and care providers; (3) centre care on the patient and their family which emphasises the need to individualise care and involve the family; and, (4) support patients in their communities – which emphasises the need to consider the development of services outside the acute hospital setting.

The Chronic Care Model (CCM) was developed in response to the recognition that healthcare systems are not organised to deliver optimal care to people with multiple medical problems.[6] The CCM considers health care provision as part of the community, so is particularly relevant in frailty; it emphasises links between healthcare and other community resources; and it requires patient self-management support, rather than education provision, to support the patient and family to actively manage LTCs.[6]

A 2013 King's Fund Report describes a 'House of Care' model for LTCs. This is a checklist for the components which need to be in place for high quality, person centred, co-ordinated care.[27] It is especially useful for drawing together the components of integrated care, incorporating the essential elements of continuity, and ensuring a whole system approach. It is therefore particularly relevant for older people with frailty. The report emphasises patient participation to direct truly personalised care and considers the impact of LTCs alongside recognition of the need for whole-system change for successful implementation. The five identified components are: personalised care planning, engaged informed patients, healthcare professionals committed to partnership working, organisational processes and responsive commissioning.[27] The House of Care model has been adopted by NHS England as the organising framework for LTCs.[28]

Potential benefits

The recognition of frailty as an LTC is not merely a semantic issue - a wide range of benefits can be anticipated if the evidence base can be established that LTC management approaches are beneficial in frailty. Importantly, primary care-based registers for frailty could be established and chronic disease models applied systematically. For example, applying the House of Care model to frailty would guide provision of preventive interventions, help people with frailty participate in care planning, and facilitate access to the support of a wider multi-disciplinary team. [Advance care planning interventions for older people improves knowledge of individual preferences and care can be improved by accommodating these preferences.](#)[29] A team approach is a key component of LTC management, incorporating support, follow-up and behaviour change interventions which go beyond the scope of a traditional medical approach.[30] This approach would ideally require changes in secondary care to embrace greater community-based working and closer relationships with the primary, community and social care team.

Conclusions

There is robust evidence that frailty should be considered as a discrete and abnormal health state that is associated with a range of adverse outcomes for the individual and for wider society. This understanding of frailty has yet to be fully incorporated in routine care. One way of addressing this is by considering frailty as a LTC. This directs attention away from our current focus on the management of frailty crises towards new opportunities for greater proactive and preventative care. The evidence base for effective frailty interventions needs to be more firmly established. Conceptualising frailty as a LTC would greatly facilitate a new partnership between older people living with frailty, their families and carers, and researchers to investigate frailty specific interventions to improve health and quality of life in older age.

Figures

Box 1: Summary of 14 risk factors identified for functional decline in late life[7]

Affect (Anxiety & Depression)	Medication (High medication use)
Alcohol (Heavy or no alcohol consumption)	Nutrition (High or low BMI, weight loss)
Cognition (Cognitive impairment)	Physical activity (Low physical activity)
Comorbidity	Poor self-rated health
Falls	Smoking
Functional limitation	Low level of social activity/contact/support
Hearing (Decline in function, poor self-reported hearing)	
Vision (Decline in visual function, poor self-reported vision)	

Key Words

- Frailty
- Long-term condition
- Comprehensive geriatric assessment

Key Messages

- Frailty is a common and serious condition associated with a range of adverse health outcomes
- Frailty shares the key features of a long-term condition but is not currently conceptualised as such
- Individuals living with frailty could benefit from frailty being managed as a long-term condition as this would allow for the development of primary care-based registers, the application of chronic disease models and a more co-ordinated team-based approach to management
- This greater explicit focus on people living with frailty will stimulate the development of a stronger evidence-base for the condition

Disclosure

The authors have no conflicts of interest to disclose

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