Evidence Brief

University of Southampton

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What do we know about frailty in the adult population in England?

Frailty is an aging-related syndrome of physiological decline, which results in reduced ability of a person to recover from minor health problems. It is common in older adults and increases the likelihood of hospital admissions and a move to residential care. Services supporting older patients with moderate or severe frailty have been developed across the healthcare sector. However, there is a lack of research describing how frailty evolves within the whole adult population and its impact on health services.

In 2017, NHS England introduced routine frailty identification for patients aged 65 and over in General Practice, using tools such as electronic Frailty Index (eFI). As well as improving patient care, use of the eFI enables large-scale population studies to explore the epidemiology of frailty and inform future health service provision. This Evidence Brief describes the results of research that analysed a large primary care dataset of adults in England to understand how common frailty is in adults aged 50 and older, how quickly it progresses and the consequent impact on the use of health services.

Why is this research important?

Identifying frailty is a key priority in health systems with ageing populations [1]. In 2020, 8.1% of people in England were estimated to be living with frailty [2]. Timely identification can enable healthcare staff to provide care which may slow the progression of frailty, such as advice and support with nutrition and exercise, and putting advance care plans in place to cater for the patient's future needs. However, the pattern of frailty in adult populations, including middle-aged adults aged 50-64, how it changes over time and what factors lead to changes is not well understood. Describing these changes and how they are reflected in the needs of people living with frailty is important for planning healthcare, and if we are to adequately prepare for a future in which our societies will continue to have more older people potentially frail.

How is frailty assessed?

Frailty is assessed by a range of methods worldwide. Commonly used face-to-face assessments include the Rockwood Clinical Frailty Scale [3] and the Fried Frailty Phenotype [4] which measure physical frailty. However, identifying which patients to assess can be aided by applying frailty indices to electronic patient healthcare records. An example of a tool used in the UK is the electronic Frailty Index (eFI), which uses information about a patient's medical conditions, clinical signs and symptoms, disabilities and laboratory tests to calculate a score [5]. The score is then categorised as fit, mild, moderate or severe frailty, with an increasing risk of poor outcomes such as hospitalisation, moving to residential care and death, as severity increases. As well as being a first step in identifying patients who would benefit from proactive care, a key advantage of the eFI is that it can be applied to large population-level datasets.

The study aims and methods

Our study set out to answer questions about the distribution of frailty in adults aged 50+ in England and who is most at risk, how frailty develops in the population over time, and how different levels of frailty severity relate to different service needs.

This was a quantitative study using data from electronic patient records from 419 general practices in England that were part of the Royal College of General Practitioners (RCGP) research and surveillance (RSC) network. Patients for whom data was included were aged 50 and above and registered with the practice at any time between 2006 and 2017 [6]. A dataset was extracted for analysis which included the patient's demographic and clinical characteristics, their eFI on the 1st of January of each year, prescription data, deaths and contacts with primary and secondary care, including GP appointments, emergency department (ED) visits and hospitalisations.

More than 2 million patients and 15 million years of data were included, with an average of 7 years of data for each patient. We used this data to investigate the following questions:

- How common and how severe is frailty in different age bands of adults aged 50+, and how does this change over time?
- Which factors are associated with onset and faster progression?
- How does frailty severity affect the use of primary and secondary care services, and what are the comparative costs?

Distribution of frailty in the adult population

In the first year of the study (2006), 11% of adults aged 50-64 were living with frailty, compared to 31% of adults aged 65-74, 54% of those aged 75-84 and 69% aged 85 and above [7].

Most people aged 50-64 had mild frailty, however, frailty severity increased with age. Whilst only 5% of people aged 65-74 had moderate or severe frailty in 2006, this tripled to 15% in people aged 75-84 and increased to 28% of people aged 85 and above by 2017.

Over the 12-year study period, frailty prevalence increased from 27% to 39% in the cohort, even though the age distribution was very similar. Moderate and severe frailty increased to 32% among 75-84 year-olds and 58% among people aged 85 and over.

How frailty worsens over time and who is more likely to be affected

The rate of people becoming frail in one year increased from 48 per 1,000 people aged 50-64, to 130/1,000 aged 65-74, to 214/1,000 aged 75-84 and 380/1,000 aged 85 and above [7].

Moving from a lower to a higher frailty category, for example from mild to moderate frailty, was more common and occurred more quickly in people who were:

- Older and female sex
- Living in an area of higher deprivation
- Of Asian ethnicity
- Living in an urban area

The average number of years people stayed in each frailty category reduced as people became older. For example, whilst people aged 50-64 spend an average of 21 years living with mild frailty, people aged 75-84 only spend 6 years before becoming more frail or dying. People spent the longest time living with severe frailty, ranging from 28 years in people aged 50-64 to 12 years in people aged 75-84.

Clinicians should consider these factors when assessing and preparing management plans for older adults to proactively plan for their future needs.

Impact of frailty on patient's use of services

In primary care, there was a large increase in the average number of face-to-face appointments regardless of the age of the patient; e.g. 4 per year for a fit person aged 50-64 years vs 17 per year for a person of the same age with severe frailty [8]. Home visits and telephone triage appointments were also more frequent among people with moderate and severe frailty.

Similar patterns were seen for outpatient appointments, ED visits and unplanned hospital admissions, with older people and people with more severe frailty spending longer in hospital, e.g. 9 days in hospital per year for a person aged 50-64 with severe frailty as compared to 16 days per year for a person with severe frailty aged ≥85.

The average annual cost of primary and secondary care for people with mild frailty is double that of people who are fit (£2,159 vs £957), with costs trebling in people living with moderate frailty (£3,220) and quadrupling in severe frailty (£4,464). However, as there are more people with mild and moderate frailty, they have greater overall use of primary and secondary care services and therefore higher overall costs in the whole population.

Conclusions

In England, frailty is already common in middle-aged adults and increases with advancing age. The pattern of frailty in local populations is associated with socio-demographic factors such as deprivation, ethnicity and level of urbanisation. Large numbers of people are living with frailty for a long time, with negative consequences for their well-being. Strategies to identify and assess the health and care needs of older adults living with frailty require knowledge of the local population characteristics to enable earlier interventions. Clinical management should be supplemented by public health strategies to reduce the overall burden of frailty, particularly in middle-aged adults.

There is a steep increase in the patients' need for healthcare as frailty severity increases, regardless of age. Although patients with severe frailty have higher costs of service use, the larger numbers of older adults living with mild and moderate frailty mean that the use of services and costs may be higher in this group. Therefore, preventing and managing frailty in earlier adulthood may be as important as providing adequate care for older people with severe frailty.

Localised information on the distribution of frailty, expected population growth and patterns of ageing should be used to estimate future frailty-related needs, as well as generic primary and secondary care services and their related budgets.

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