

NIHR Signal Routine measurement of grip strength can help assess frailty in hospital

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Training clinical staff to routinely measure grip strength can help identify frail older hospital inpatients. This could help tailor their care.

This NIHR-funded study was conducted across five acute medical wards in one hospital in England over a nine-month period. Nursing staff were trained to measure grip strength of people aged over 80 years. They were instructed to assess if those with low grip required nutritional supplements and to refer them to physiotherapy for consideration of strength exercises.

Successful implementation and acceptance of grip strength measurement into routine practice was variable across the wards and heavily dependent on the interest and commitment of staff. Ward champions were important for successful implementation. Grip strength was measured in 40% of those eligible. Though over three-quarters of them had low grip strength, referral for supplements or physiotherapy was inconsistent. The study did not assess if these measures improved outcomes or how it compared with other ways of assessing frailty.

For those considering a similar scheme, this study shows it is feasible, acceptable and inexpensive but requires team commitment.

➤ Health management, Older people, Nursing, Acute and general medicine



Why was this study needed?

In the UK, older people account for almost two thirds (65%) of people admitted to hospital. Frail older people make up 30% of acute medical unit inpatients. Frailty and sarcopenia (loss of skeletal muscle mass and strength) are ageing syndromes which can

lead to longer lengths of hospital stay and increased hospitalisation costs. Poor health outcomes are also common, for instance with frailty related falls costing the NHS an estimated £4.6 million per day.

Low grip strength is a common indicator of frailty but is not usually assessed in hospital inpatient settings. The routine measurement of grip strength using a relatively low-cost piece of equipment, a dynamometer, could help identify at-risk older inpatients. It could also support the implementation of appropriate early health care interventions to prevent poor health outcomes and speed up the discharge process.

This study assessed the feasibility and acceptability of a strategy to implement grip strength measurement into routine clinical practice in inpatient settings for older people.

What did this study do?

This mixed-methods study was conducted within one hospital in England across five acute medical wards. Grip strength training on using a Jamar dynamometer was provided to 155 staff, mainly nurses. Training and ward visits were provided by the research team throughout the nine-month implementation period.

Staff were instructed to use the grip strength test on all patients over 80 years. If they had low-grip strength, staff were directed to set up a dietary assessment and refer them to physiotherapy to consider resistance training exercises.

Semi-structured interviews and focus groups were carried out with 15 clinical staff members and eight patients on the acceptability of the test.

As a feasibility study, this is early research designed to understand the practical issues with using the grip test and to uncover any limitations to implementing it in other settings with different organisational cultures or structures.

What did it find?

- Grip strength was measured in 81 1/2,043 (40%) eligible people. Looking at a sample of 86 people with low grip strength, nutritional supplements were prescribed to 60% of them and strength exercises to 20%. High levels of acceptance were found in the eight patients interviewed. Most found no difficulty in doing the grip strength test.
- Training sessions lasted around 20 minutes and were not considered disruptive to daily working practices. High levels of confidence in measuring grip strength and using the care plan were reported by staff in a post-training evaluation.
- Acceptance of the intervention by staff was variable across wards. Supportive ward managers and keen ward champions achieved better implementation and staff acceptance. Regular changes in ward managers, lack of interest, and lack of support for the intervention were barriers to acceptance and implementation.
- Dieticians thought that it could be useful for early identification of people who could benefit from supplements, but also expressed some reservations about inappropriate prescribing.

- The costs reported for delivering training across all five wards were between £2,218 and £2,302 per year and between £5.78 and £10 per patient depending on the seniority of staff. Dietician and physiotherapy costs were not included.

What does current guidance say on this issue?

Guidelines focussing on frailty related problems in older people have a common focus on falls. NICE guidelines on falls risk assessment highlight that interventions to improve strength should be identified for at-risk older people.

Whilst grip strength measurement can aid the identification of frailty in older people, routine assessment of grip strength is not currently recommended in any relevant UK guidance. A range of tests for assessing frailty are available, including gait speed and the timed up and go test.

What are the implications?

Incorporating grip strength measurement into routine assessment has potential to be a more consistent approach in identifying patients at risk of frailty.

This study indicates mostly positive attitudes amongst staff and patients towards routine measurement of grip strength in an acute hospital inpatient setting. Routine implementation is feasible; however, success would be dependent on a strong investment of time, willingness to engage, and commitment from all staff involved. The use of ward champions seemed important for success. This might be difficult in wards with high staff turnover. This study was based on one hospital only, so results may not be generalisable to all other sites.

Routine implementation appears low cost, but any workload implications for physiotherapists and dieticians could be considered further before this test becomes widespread.

Citation and Funding

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Expert commentary

It is believed that knowing the frailty status of patients will enable clinical outcomes to be improved. Clinicians normally use simple but subjective clinical frailty rating scales.

This study looked at the implementation of the routine objective clinical measurement of frailty in hospital wards, handgrip strength (a good indicator of frailty). Unsurprisingly, with effort and leadership, it is possible to implement this.

So far, so good – but research is still needed to show how this information can be used to improve outcomes.

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