

## **Self-Reported Frailty at Hospital Discharge is Associated with Readmission and Mortality in Older Patients**

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**Introduction:** Frailty in older inpatients is associated with higher risk of rehospitalization and death. However, a multidimensional self-reporting and feasible method for measuring frailty at hospital discharge to investigate the association of readmission or death has previously not been tested in a Danish hospital setting. The objective of this study was to assess whether self-reported frailty at hospital discharge in acutely admitted older medical patients, using a multidimensional questionnaire, was associated with unplanned readmission or death within six months after discharge. Secondly, to assess whether physical function was similarly associated.

**Methods:** A cohort study was conducted in seven medical departments and two acute medical units at Aalborg University Hospital, Denmark, including acutely admitted patients aged 65+. The

Tilburg Frailty Indicator (0–15 points), Timed-Up-and-Go and grip strength were measured. Associations were assessed by Cox Regression, with first unplanned readmission or death as outcome and frailty as primary exposure variable, including the covariates gender, age and comorbidity.

**Results and conclusions:** Of the 1,328 included patients, 50% were readmitted or died within six months. When adjusted for gender and age there was an 88% higher risk of readmission or death if Tilburg Frailty Indicator scores were 8–13 points compared to 0–1 points (Hazard ratio 1.88, CI 1.38;2.58). A Timed-Up-and-Go score between 12.0 and 23.9 seconds compared to 4.0 to 7.9 seconds was associated with a 98% higher risk of readmission or death, when adjusted for gender and age (Hazard ratio 1.98, CI 1.46;2.68). Grip strength was inversely associated with the outcomes.

Self-reported frailty assessed by The Tilburg Frailty Indicator at hospital discharge was directly associated with risk of readmission or death within six months. Similarly, higher Timed-Up-and-Go and lower grip strength scores were associated with higher risk of readmission or death.

**Implications:** Self-reported multidimensional frailty at discharge is a feasible and valid indicator of readmission or death in acutely hospitalized older medical patients. These findings are a promising first step towards identifying high-risk patients that need comprehensive discharge planning with the aim of preventing readmissions.

**Keywords:** Frailty; readmission or death, The Tilburg Frailty Indicator; acutely admitted older medical patients; Timed-Up-and-Go; grip strength

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