Routine Assessment of Frailty to Predict Adverse Outcomes

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Objective

- Describe the process and implications to practice for identified research studies.

Background

- “Population aging is accelerating rapidly worldwide, from 461 million people aged over 65 years in 2004, to an estimated 2 billion people by 2050, which has profound implications for the planning and delivery of health and social care” (Clegg, Young, Illife, Rikkert, & Rockwood, 2013, p. 752).
- “It is estimated that a quarter to a half of people over 85 years are frail and these people have significantly increased risk of falls, disability, long-term care and death” (Clegg et al., 2013, p. 752).

Background

- New technological, pharmaceutical, and modern medicine advances have allowed for longer healthier living (Lee, Buth, Martin, Yip, & Hirsch, 2010).
- “Older adults now comprise almost half of all ICU admissions in the United States, receive more intensive treatment than in the past, and survive what were previously fatal critical illnesses” (Baldwin et al., 2014, p. 401).

Background

- One of the most concerning implications of aging is the clinical condition of frailty (Clegg et al., 2013).
- "Aging results from the lifelong accumulation of molecular and cellular damage caused by many mechanisms that are regulated by a complex maintenance and repair network" (Clegg et al., 2013, p. 752).
- As this cellular damage occurs, organs are impaired and physiological and cognitive reserves are diminished. With the loss in physiological and cognitive reserves, manifestations of frailty are exhibited (Rockwood & Mitnitski, 2011).

Background

- Bagshaw et al. defines frailty as:
  - A multidimensional syndrome characterized by the loss of physiologic and cognitive reserves that gives rise to heightened vulnerability to adverse outcomes. Adverse events associated with frailty include incident falls, susceptibility to acute illness, perioperative complications, unplanned hospital admissions, disability, need for institutional care, and death. (2014, p. E95)

Background

- Frailty is a clinical state that exposes a patient, making them vulnerable, to poor outcomes.
- Frailty is often under-diagnosed or undiagnosed (Hardin, 2015).
- Frailty is hardly ever documented in a clinical note, progress note, or history and physical, even though frailty exists as a clinical condition (Hardin, 2015).

Objectives

- The objectives of this EBPP are to:
  - a) Critically appraise and synthesize the current evidence to determine if the routine assessment of frailty, in older adults, can predict mortality and adverse outcomes
  - b) Propose an assessment guideline to assess for frailty within the clinical setting

Project Significance

- In 2013, Clegg et al. determined that “frail older people receiving inpatient comprehensive geriatric assessments are more likely to return home, less likely to experience cognitive or functional decline and have lower in-hospital mortality” (p. 9).
- “Because frailty prevalence rises with age, its consequences will place a mounting burden on older people, their careers, and the health care system” (Basic & Shanley, 2015, p. 671).

Project Significance

- Research has demonstrated that routine assessment of frailty is important as it can provide more accurate prognostication and identify a vulnerable population that might benefit from follow-up care and interventions (Bagshaw et al., 2014).
- Currently there are numerous frailty indexes, frailty scales, questionnaires, screening tools, and geriatric comprehensive assessment tools available to use.

Project Significance

- Nurses are on the frontline
- Nursing would provide accurate frailty assessment– giving an accurate measurement of frailty
- “The association of frailty and death suggest that the degree of frailty, and not just its presence is important” (Evans, Sayers, Mitnitski, & Rockwood, 2014, p. 3).
- Which in return would allow a greater complexity in treatment choices, care planning, and costs of care to be generated (Basic & Shanley, 2015).

PICO Question

In older adults, does the routine assessment of frailty predict mortality and adverse outcomes?

Inclusion Criteria

- Level I to Level IV
- Peer-reviewed publications
- Examined the concept of the assessment of frailty
- Population >50 years old
- Publications that hypothesized the prediction of adverse outcomes related to the routine assessment of frailty

Exclusion Criteria

- Level V to Level VII publications
- Publications published over nine years ago
- Any study that was not conducted in an ICU, geriatric ward, pre-operative or surgical setting, and/or community setting

Search Strategy

- Cedar Crest College's Cressman Library databases
- Keywords included were: frailty, ICU, Clinical Frailty Scale, elders, outcomes, and predicting outcomes
- Keywords frailty and ICU: 58 results- Baldwin et al., (2014)
- Keywords Clinical Frailty Scale: 671 results-- - limit regarding the date was set-- 140 results- Basic and Shanley, (2015), Wallis et al., (2015), and Ritt et al., (2015)

Search Strategy

- Keywords frailty and elders: 1005 results-- limits regarding the date and full text were applied-- 878 results-- Coelho et al., (2015) article and Gu et al., (2015)
- Keywords frailty and outcomes: 7,453 results-- limits were set-- 121 results-- Oakland et al., (2016)
- Keywords Clinical Frailty Scale and predicting outcomes: 24,000-- limits were set regarding the date-- 16,200. Further limits regarding full text were set, yielding 1,000 results.
  - Ensrud et al., (2009), Lee et al., (2010), Bagshaw et al., (2014), Maguet et al., (2014), and Rothman, Leo-Summers, & Gill, (2008)

Synthesis of Evidence

- 12 publications chosen
- 11 were Level IV and 1 was a Level I
- All 12 publications were a grade “B”
- 3 Publications focused on ICU inpatients
- 3 Publications focused on Geriatric Inpatients
- 2 Focused on Perioperative/Surgical Older Adult Patients
- 4 Focused on Community Dwelling Older Adults

Intensive Care

- Bagshaw et al. (2014)-- prospective cohort study
  - examined 421 critically ill adults
  - aged 50 or older
  - six hospitals across the province of Alberta
  - Upon admission into the ICU, at a 6 month, and at a 12 month follow-up, patients were assessed for frailty utilizing the CFS
- 138 of them considered to be frail
- Nonfrail and frail patients received similar treatment intensity

Intensive Care

- Frail patients had a higher incidence of in-hospital mortality, 95% CI [1.09-3.01]
- Had a higher incidence of 1-year mortality, 95% CI [1.28-2.60]
- Were less likely to be living at home independently after discharge, 95% CI [0.20-0.61]
- Were more likely to become funtionally dependent with ADL's, 95% CI [1.03-4.89]
- Were more likely to be re-admitted into the hospitial within 12 months, 95% CI [1.22-3.23]
- Had a 1.5-fold higher odds of major adverse events during their hospital stay, 95% CI [1.01-2.37]

Intensive Care

- Maguet et al. (2014)-- prospective observational study
  - Assessed for frailty within 196 patients
  - 65-years or older
  - Within four ICU's in France
  - Utilizing both the CFS and the FP
  - Patients were assessed for frailty at the time of admission into the ICU and at a 6-month follow-up period

Intensive Care

- Out of the 196 patients enrolled in the study, 80 patients (41%) were assesed as frail with an FP score >3
- 46 patients were assessed as frail (23%) with a CFS score >5
- The CFS was significantly correlated with the FP score ($p<0.001$)
- A FP score ≥ 3 predicted ICU mortality ($p<0.001$)
- A CFS ≥ 5 predicted 6-month mortality ($p<0.001$)

ICU Results

- Regardless of the frailty tool utilized, independent components and criteria of frailty clearly predict adverse outcomes

- ICU setting frailty predicts:
  - In-hospital mortality
  - 6-month mortality
  - 1-year mortality
  - Disability or dependence in ADL's
  - 1-month disability
  - Increased LOS
  - Need for placement after discharge from the hospital
  - Need for re-hospitalization in older adults

Recommendations for Practice

I. **Routine assessment of frailty** could provide more accurate prognostication and identify a vulnerable population that might benefit from follow-up and intervention (Bagshaw et al., 2014; Basic & Shanley, 2014).

II. **Frailty should be measured in older ICU survivors** to determine the need for increased duration of hospitalization and in older ICU adults with respiratory failure, helping to identify the need for post-acute rehabilitative, therapeutic, and palliative interventions aimed at improving morbidity, mortality, and/or quality-of-life (Baldwin et al., 2014; Maguet et al., 2014).

Recommendations for Practice

III. **Use of Clinical Frailty Scale** recommended to assess for frailty level within the ICU setting (Maguet et al., 2014).

IV. A systematic approach **to screening for frailty** will highlight patients at the extreme end of frailty, **assisting with end-of-life decisions** (Basic & Shanley, 2014).

V. Further research, to help create a better understanding of frailty, may lead to new practical interventions to reduce its prevalence and impact (Basic & Shanley, 2014; Coelho et al., 2015; Ensrud et al., 2009; Gu & Feng, 2015; Wallis et al., n 2015).

Implications for Practice

- Identify leaders from each multidisciplinary team to develop Frailty Clinical Practice Guideline, utilizing the Clinical Frailty Scale.
- Educate Intensive Care Unit (ICU) nurses on proper assessment of frailty via the Clinical Frailty Scale
- Assess each nurse complete a return demonstration of Clinical Frailty Scale assessment

❖Initiate Frailty Clinical Practice Guideline within selected ICU

❖Clinical Frailty Scale assessments to be completed at admission, transfer, and or

Implications for Practice

- Follow patient outcomes and document outcomes at 1-month, 6-month, and 1-year following initiation of Frailty Clinical Practice Guideline
- Outcomes to be followed:
  - In-hospital mortality
  - 1-month mortality
  - 6-month mortality
  - 1-year mortality
  - Length of stay
  - Falls
  - Re-admission
  - Need for assisted living at discharge
  - Disability or dependence in activities of daily living (ADL's)

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- Thank you for your attention!
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