Session Objectives

• Differentiate frailty, disability and comorbidity and their impact on morbidity and mortality among elders.

• Identify who should be screened for frailty and describe 3 screening tools used for assessment of frailty.

• Discuss evidence-based interventions nurse practitioners should consider in the treatment of frail elders.
Case One

84 yo female with severe kyphosis, asthma, Osteoporosis, Osteoarthritis, HTN. Recent short stay in a rehab setting following a fall & intractable back pain; vertebral compression fracture underwent Kyphoplasty. Lives with son who works during the daytime; stays by herself during the day. Prior to hospitalization, able to self medicate (son sets up meds), performs ADLs, and walk with a cane.
What is known about Frailty?

• A clinical syndrome

• Distinct from disability

• Includes both physical and functional decline

• A dynamic condition that can improve or worsen over time

• Causes increased vulnerability to stress leading to increased dependency, morbidity, institutionalization and death

• Increasingly seen in the aging patients we care for and prevalence is increasing each year as the aging population grows
Frailty

• Background
  • Recognized as a common clinical condition in older adults for sometime but historically, no consensus on its definition
  • Progressive and multisystemic
  • Weakness is a prominent feature
• A consensus conference in 2013 including US and international delegates agreed on the following:
  • Physical frailty is a medical syndrome
  • Has multiple causes
  • Characterized by decreased strength, endurance and reduced physiological function
  • Results in increased dependency and mortality
  • Can be prevented or treated
  • Should be screened for in patients > 70 and all individuals with unintentional weight loss of 5% or more due to chronic disease.
Frailty

• Definition
  • “A medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual’s vulnerability for developing increased dependency and or death.” (NIH, 2013)

• Compared to disability
  • Inability to complete one or more ADL tasks

• Compared to Comorbidity/Multimorbidity
  • More than one medical condition; pervasive in persons >65; seen in 3 of 4 persons and 1 in 4 persons < 65
  • Focus on separate medical conditions and their treatments
Frailty, Disability, Comorbidity (Fried, 2004)

Figure 2  The association between frailty, disability and comorbidity.
Case One

84 yo female with severe kyphosis, asthma, Osteoporosis, Osteoarthritis, HTN. Recent short stay in a rehab setting following a fall & intractable back pain; vertebral compression fracture underwent Kyphoplasty. Lives with son who works during the daytime; stays by herself during the day. Prior to hospitalization, able to self medicate (son sets up meds), performs ADLs, and walk with a cane.
Case One - Analysis

• Thinking about our definitions of frailty, disability and multimorbidity...in which group(s) would you place this patient?

• Frailty
• Disability
• Multimorbidity
Case Two

- 75 y.o. male with history of HTN, Dyslipidemia, OA – knees; Left TKA.
- In rehab setting s/p hospitalization for repair of aortic aneurysm dissection. Lives alone in own home. Widower. 2 adult children who are married and live out of state. Prior to hospitalization was driving, Independent in ADLs & IADLs; worked-out with friends at the local senior center 3 days/week.
Case Two - Analysis

- Thinking about our definitions of frailty, disability and multimorbidity... in which group(s) would you place this patient?

- Frailty
- Disability
- Multimorbidity
Frailty

• Incidence
  • 55% of persons > 65 yo
  • 96% of persons > 90 yo

• Prevalence
  • Higher prevalence in women
  • 7% - 32% in community dwelling elders

• Outcomes
  • Falls
  • Decreased mobility
  • Increased ADL deficits / disability
  • Increased rates of hospitalization
  • Increased need for healthcare services
  • Institutionalization
  • Death
Frailty Phenotype

Clinical Phenotype: Cycle of Frailty

- Weight Loss as indicator of chronic undernutrition
- Sarcopenia
- Resting metabolic rate
- Slow Walking Speed
- Strength and Power
- Exercise tolerance "Exhaustion"

Low Physical Activity → Total energy expenditure ↓
Biomedical and Psychosocial Influences of Frailty

Physiologic Changes Contributing to Frailty

Interaction of Physiologic factors – Development of frailty

- Taste
- Poor dentition
- Dementia
- Depression
- Illness
- Hospitalization

Neuroendocrine Dysregulation

Anorexia of aging

↓ Total Energy Expenditure

↓ Activity

Disease
- eg, depression, dementia
- Acute illness
- Medication (eg, sedating)
- Stressful life events
- Falls

Chronic Undernutrition
- Inadequate intake of protein and energy; micronutrient deficiencies

↓ Resting Metabolic Rate

Disability

Dependence

Walking Speed

↓ Immobility

Falls and Injuries

Strength & Power

↓ VO₂max

Loss of muscle mass

Sarcopenia

Negative Energy Balance

Negative Nitrogen Balance

Aging:
- Senescent musculoskeletal changes

Catabolic state

Weight Loss

Disability

Chronic inflammation/ Cytokines

Disease Medications

Insulin sensitivity

Osteopenia

Disease
- eg, cardiopulmonary
The Problem

- Frailty is under recognized by clinicians
- Frailty is pervasive in the aging population
- Signs can be subtle and unrecognized and under reported by patients and families
- Frailty is present in your patient population and when unrecognized may lead to bad outcomes for your patients
Prognostic Value


Figure 4. Survival curve estimates (unadjusted) over 72 months of follow-up by frailty status at baseline: Frail (3 or more criteria present); Intermediate (1 or 2 criteria present); Not frail (0 criteria present). (Data are from both cohorts.)
Screening

• Why Screen for frailty?
  • Opportunity for prevention
  • Identify those who can benefit from referral to comprehensive geriatric services
  • Stage level of frailty and tailor interventions to the stage
  • Intervene and lengthen period of independent living in preferred environment
  • Assists with clinical decision making/advising/coaching

• Who Should we screen?
  • Persons over 70
  • Persons experiencing 5% or greater unintentional weight loss
Screening Tools

• Clinical Frailty Scale

• “Frail” Questionnaire

• Cardiovascular Health Study Frailty Screening Scale

• Gerontopole Frailty Screening Tool

<table>
<thead>
<tr>
<th>Clinical Frailty Scale</th>
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<tbody>
<tr>
<td>1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</td>
</tr>
<tr>
<td>2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</td>
</tr>
<tr>
<td>3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.</td>
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<tr>
<td>4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.</td>
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<tr>
<td>5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</td>
</tr>
<tr>
<td>6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</td>
</tr>
<tr>
<td>7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).</td>
</tr>
<tr>
<td>8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.</td>
</tr>
<tr>
<td>9 Terminally Ill – Approaching the end of life. This category applies to people with a life expectancy &lt;6 months, who are not otherwise evidently frail.</td>
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**Scoring frailty in people with dementia**

The degree of frailty corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In severe dementia, they cannot do personal care without help.
The Simple “FRAIL” Questionnaire Screening Tool

**Scoring:** 3 or greater = frailty; 1 or 2 = pre-frail

- **Fatigue:** Are you fatigued?
- **Resistance:** Cannot walk up 1 flight of stairs?
- **Aerobic:** Cannot walk 1 block?
- **Illnesses:** Do you have more than 5 illnesses?
- **Loss of weight:** Have you lost more than 5% of your weight in the past 6 months?
CHS Frailty Screening Scale

Scoring: *Robust* = 0; *Prefrail*, 1 or 2; *Frail*, ≥3

1. **Weight Loss** – Loss of 10 pounds unintentionally in past year or weight at examination ≤10% of age 60 weight.
2. **Exhaustion** – Self-report of fatigue or felt unusually tired or weak in the past month
3. **Low Activity** – Frequency and duration of physical activities (walking, doing strenuous household chores, doing strenuous outdoor chores, dancing, bowling, exercise).
4. **Slowness** – Walking 4m≥7 s if height ≤159 cm or ≥6 s if height ≥159 cm.*
5. **Weakness** – Grip strength (kg) for body mass index (kg/m2).*

*Data for older women (lowest 20th percentile).
Gerontopole Frailty Screening Tool

- Frailty Screening for Older patients, 65 y and older, without functional deficit or acute disease
  - □ Yes □ No □ Unknown
- Involuntary weight loss in the past 3 months?
  - □ Yes □ No □ Unknown
- Fatigability from the past 3 months?
  - □ Yes □ No □ Unknown
- Have some mobility difficulties for the past 3 months?
  - □ Yes □ No □ Unknown
- Memory complaints?
  - □ Yes □ No □ Unknown
- Slow gait speed (+4 s for 4 meters)?
  - □ Yes □ No □ Unknown
Gerontopole Frailty Screening Tool

- **Scoring:**

  - If yes to at least one of these questions:
    - Do you feel in your own clinical opinion that your patient is frail and at an increased risk for further disabilities?
      - □ Yes □ No
    - If yes, propose to the patient an evaluation of the causes of frailty and prevention of disabilities in a day hospital.
Case Three

80 y.o. female seen for 3 month office visit. She lives with husband in a life-care senior apartment setting. History of HTN, diverticulitis, OA lumbar spine, cataract surgery both eyes. No weight loss. Activities include walks one mile daily. Volunteers with group that reads to third graders once/month.
Case Three: What is her score on the FRAIL scale?

**Scoring:** 3 or greater = frailty; 1 or 2 = pre-frail

- Fatigue: Are you fatigued?
- Resistance: Cannot walk up 1 flight of stairs?
- Aerobic: Cannot walk 1 block?
- Illnesses: Do you have more than 5 illnesses?
- Loss of weight: Have you lost more than 5% of your weight in the past 6 months?
Case Four

• 82 yo male residing in assisted living. Past medical history includes Diabetes Type 2 (insulin dependent); HTN; Chronic Atrial Fibrillation; Dyslipidemia; CRF; Macular Degeneration; H.O stroke with residual left hand weakness and gait/balance disorder. Walks short distances with walker, cannot climb stairs. Needs assistance with medication set-up. No longer drives. Needs assistance with IADLs.
Case Four: What’s his frailty score?

Scoring: 3 or greater = frailty; 1 or 2 = pre-frail

- Fatigue: Are you fatigued?
- Resistance: Cannot walk up 1 flight of stairs?
- Aerobic: Cannot walk 1 block?
- Illnesses: Do you have more than 5 illnesses?
- Loss of weight: Have you lost more than 5% of your weight in the past 6 months?
The Clinical Visit

Step 1:
- Who should you screen?
  - 70 and older
  - Unintentional weight loss 5% or greater
  - Patients planning elective surgery
  - Any patient you have a clinical suspicion of frailty

Step 2:
- Which screening tool should you use?
  - Fried’s frailty – quick and easy to administer

Step 3:
- How do you diagnose?
  - Criteria based: Robust/Non-frail – Pre-frail – Frail – Advanced Frailty
  - Positive for Frailty? Is it....
    - Primary – no underlying pathological causes
    - Secondary- condition originates from underlying factors

Step 4:
- Once the diagnosis is made...What is the best approach to care planning & treatment/intervention?
The Clinical Visit: Frailty
Clinical Presentation

- Low physical activity
- Muscle Weakness
- Slowed Performance
- Fatigue or poor endurance
- Unintentional weight loss
Treatment Goals
Treatment Goals

- Set patient-centered goals with patient/carers
- Maintain/restore level of ADL function and mobility
- Maintain safety & capacity for independent or preferred living environment
- Decrease vulnerability to stress
- Avoid excess morbidity
Interventions forTreating Frailty

Non-frail  Pre-Frail  Frail  Advanced frailty
Interventions

Non-Frail
- Exercise
- Social support
- Tight control of medical conditions

Preventive Screenings

Pre-Frail
- Refer for Comprehensive Geriatric Evaluation
- Interdisciplinary team recommendations
- Encourage follow through: exercise program, PT/OT, nutrition
- Regular follow-up
- Assess cognition, screen for depression

Frail
- Clarify goals of care & Advanced care directives
- Prevention plan: exercise, nutrition, streamline treatments, modify the environment
- Medication review: reduce meds/simplify dosing
- Avoid hospitalization (ACE unit if hospitalized)
- Address Caregiver stress
Possible Interventions Along the Spectrum of Frailty

FIGURE 2. Potential interventions along the spectrum of frailty in older adults

- Symptom relief
- Setting patient-centered goals
- Family and caregiver support

Exercise interventions
- Comprehensive geriatric assessment and treatment
- Geriatric evaluation and management (GEM)

- GEM and Adult Care for Elders units, programs for acute care for the elderly

- Hospice care, maintain comfort and dignity

Increasingly frail
The Take Away

• *Screen for frailty!*

• Teach your patients and their carers about frailty & frailty avoidance

• Frailty assessment can assist with prognostication & decision-making

• Comprehensive Geriatric Evaluation is beneficial

• There are opportunities for intervention at every stage of frailty

• Remember the basics =
  • Exercise
  • Good nutrition
  • Reduce polypharmacy
  • Vitamin D supplementation
  • Social and environmental support
Beating Frailty is fun!
Questions?

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Resources

Resources

Resources

Web Resources

• Consult GeriRN
  http://consultgerirn.org

• National Institute on Aging
  www.nia.nih.gov

• National Council on Aging
  www.ncoa.org

• American Geriatrics Society Foundation for Health in Aging
  www.healthinaging.org