Assessing Fall Risk and Reducing Falls in the Elderly

Background

More than one in four American adults 65 years of age and older have reported falling and one in five sustain a severe fall-related injury, including fractures and traumatic brain injuries (CDC, 2021). Falls account for 56% of injury-related deaths in older adults annually (CDC, 2021). Many factors contribute to the increased risk of falls in the elderly, including mobility impairment, poor balance, chronic illness, and vision impairment. Nurses play a vital role in reducing patients' fall risk by implementing a risk assessment scale, advocating for physical therapy (PT) and home safety assessments, teaching fall prevention strategies, and ensuring a safe environment in hospitals or nursing care facilities.

Risk Factors for Fall (Lee, Lee & Khang, 2013; Kiel, 2023; Centers for Disease Control & Prevention, 2021)

Intrinsic Factors*

- Fear of falling: a geriatric syndrome that may contribute to further functional decline and may limit ambition to participate in physical activities; can lead to weakness, muscle atrophy, decreased agility, and predisposition to falls
- Advanced age
- Female sex
- Previous falls
- Lack of regular exercise
- Muscle weakness
- Gait and balance impairments
- Visual impairment
- Hearing impairment
- Postural hypotension (orthostasis)
- Chronic conditions: arthritis, stroke, cardiovascular disease, vitamin D deficiency, incontinence, Parkinson's disease, dementia/cognitive impairment, diabetes and diabetic neuropathy, foot pain

Extrinsic Factors*

- Polypharmacy and psychoactive medications
- Lack of stair handrails and bathroom grab bars; poor stair design
- Dim lighting, obstacles and tripping hazards
- Slippery or uneven surfaces
- Improper use of assistive devices (canes or walkers)
- Ill-fitting clothing and shoes

* Most falls are due to a combination of risk factors. The more risk factors a person has, the higher the fall risk.

The Community Setting

Screening for Fall Risk (Lee, Lee & Khang, 2013; Kiel, 2023)

- At each visit, ask patient about history of falls, frequency of falls, and gait or balance disturbances.
- For patients who report a fall or gait/balance impairment, follow up with further risk assessment.
    - Review medical history and medications
    - Physical examination
        - Cognitive evaluation, visual acuity, and functional assessment
        - Cardiovascular system, include heart rate and rhythm, postural hypotension
        - Neurological impairment
        - Muscular strength
    - History of falls
    - Feet and footwear
    - Environmental hazards/home safety evaluation
    - Get Up and Go test
        - Ask patient to rise from chair, walk 9 feet, turn around, walk back to chair and sit back down
        - Normal time is 14 seconds or less
        - Observe postural stability, gait, stride length, sway, and leg strength

Fall Prevention (Lee, Lee & Khang, 2013; Kiel, 2023)

- Exercise/PT targeting balance, gait and strength (ideally three hours per week). Consider pre-operative PT referral for patients undergoing elective hip, knee, or ankle joint replacement surgery, for core and upper body strengthening.
- Medication modification, as appropriate (i.e., decreasing or stopping psychoactive medications)
- Vitamin D supplementation for patients deficient or a high fall risk (800-1000 international units cholecalciferol daily)
- Evaluation and modification of the home environment (most effective when directed by occupation therapist)
- Patient education

For patients with comorbidities, consider the following recommendations (Kiel, 2023):

Comorbidity	Possible interventions
Carotid sinus hypersensitivity	▪ Insertion of cardiac pacemaker insertion in appropriate patients
Cataracts	▪ Surgical correction
Malnutrition	▪ Refer for nutrition counseling ▪ Nutritional supplementation
Postural hypotension	▪ Fluid optimization ▪ Compression stockings ▪ Medications (fludrocortisone or midodrine)
Foot pain/neuropathy	▪ Refer to podiatry ▪ Medications (gabapentin)

Nursing Care Facility or Hospital Setting

Screening for Fall Risk (Kiel, 2023)

- Utilize standardized screening tools.
    - Morse Fall Scale
    - Hendrich II Fall Risk Model
    - Schmid Fall Risk Assessment Tool
    - Johns Hopkins Hospital Fall Risk Assessment Tool
    - St. Thomas' Risk Assessment Tool (STRATIFY)

Fall Prevention (Lee, Lee & Khang, 2013; Berry & Kiel, 2023)

- Exercise/physical therapy
- Occupational therapy
- Medication modification (i.e., decreasing or stopping psychoactive medications, if appropriate)
- Call bell in reach
- Hearing aids or glasses in reach
- Hourly rounding to assess pain, positioning, toileting, and personal needs
- Early and frequent mobilization
- Nonslip footwear
- Elimination of barriers to transfer and ambulation
- Avoidance of restraints
- Use of bed alarm to signal to staff that patient has exited the bed unattended
- Bed in lowest position to the floor
- Vitamin D supplementation for patients deficient or a high fall risk (800-1000 international units cholecalciferol daily)
- Patient and family education

References:

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