Interprofessional Collaboration with Fall Risk Home Evaluation and Safe Mobility Intervention

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Warm-Up: Authentic Case Study

Virginia is an 85-year-old retired teacher living in a small town in the rural Midwest area. She had a few falls and is trying hard to stay safe. Falls in tub/shower are most concerning due water. She is on medications for migraines, arthritis, blood pressure, and atrial fibrillation. She experiences rare episodes of low blood sugar. Cognition and affect are normal except during migraines or episodes of severe pain from arthritic nerve impingement spine, when she has said “It’s hard to think” or find the right words.

(Used with Virginia’s permission)

Survey Question:

How many times in this past year have you seen a similar case scenario that made you think this person is presenting with risk factors for falling? (complete survey)

- 0
- 1-5
- 6-10
- More than 10

4 Ms: Match signs of fall risk with each

- What Matters:
  - Showering/bathing safety concerns
  - Meal prep important to regulate blood sugar
- Mentation:
  - Pain episodes impact cognition & affect
- Medication:
  - Pain medication can make people unsteady
- Mobility:
  - History of several falls
  - Arthritis can cause unsteadiness

Objectives: Participants will…

Upon completion of this session, participants will:

1. ***Screen for risk factors*** that can lead to falls
2. Identify essential elements to include in a home evaluation to ***assess fall risk*** and ***intervene with safe mobility strategies*** (simultaneously)
3. Use interprofessional collaboration to create interventions for ***safe mobility***

Overarching Statement of Need:

Most older adults want to age in place; therefore, there is a need for IP collaboration with fall risk home evaluation and safe mobility intervention

Needs: Facts about Falls

- Leading cause of injury among older adults (Moreland, 2020)
- 1 of 4 (27.5%) older adults fall/year (Bergen, et al., 2016; Moreland, 2020)
- Almost half of them are unreported (CDC, 2023)
- Death rates of older adults who fell increased 30% from 2007 – 2016 (CDC, 2023); 32,000 deaths were fall-related (Moreland, 2020)
- 2015 total medical costs were $50 billion (Florence, et al., 2018)

Impact of Falls

Loneliness

Weakness

Fall

Fear of fall

Decrease in participation

Decrease in hydration & nutrition

Decrease in Socializing

By: Allison Rutz

Fall Correlations

- No physical activity
- Functional impairment (stairs, dressing, bathing, community mobility)

(Moreland, 2020)

Fall Risk Factors: Intrinsic (Person)

- Age
- Previous falls
- Muscle weakness
- Gait & balance impairment
- Poor vision
- Postural hypotension
- Chronic conditions
- Fear of falling

Center for Disease Control & Prevention[CDC] (2017)

Fall Risk Factors: Extrinsic (Environment)

- Missing handrails stairs
- Poor stair design
- Missing grab bars bathroom
- Poor lighting
- Tripping hazards
- Slippery surfaces
- Medications
- Improper use of assistive device

CDC (2017)

Cognition: Attention

Moving through the environment is a complex task. Yet remains automatic, until we age

- Loss of automatic postural control to correct balance perturbations subconsciously is decreased
- Person required to engage in a dual-task- cognitive + balance task will be forced to attend to one task at the expense of the other = dual task cost (tradeoff)
    - Chronister (2004)

Most falls occur while the *person* is "*doing a task*" in their *own home*

"I fell while reaching for my shoes."

"I tripped on the corner of my bedspread while making it."

"I slipped while stepping into the tub."

"I raced to answer the phone"

"I tripped on the threshold while reaching for the mailbox from the doorway."

"I just went sideways and down while getting something out of the oven."

"I missed the step while bringing in my groceries."

Strategies

Righting Reactions: response to vestibular and proprioceptive processing from stimuli

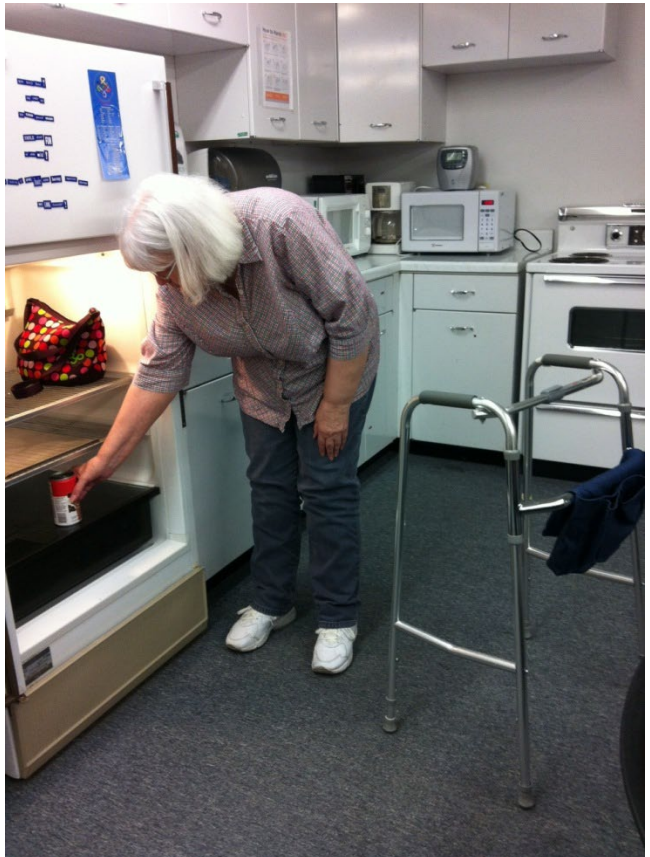
- 1.Ankle strategy
- 2.Knee strategy
- 3.Hip strategy
- 4.Stepping strategy

Balance disturbances

Chronister (2004)

Falls occur during transitional movements associated with activity

Wrong Way



Right Way

Older adults will fall more often when challenged with postural need and a cognitive task

AND

the risk of falling will increase as the cognitive task becomes harder

Chronister (2004)

Therefore, the most accurate assessment is the

Home Evaluation

Home Eval Plus Intervention

It’s NOT just about removing scatter rugs

The purpose of the home eval is to assess and intervene with the ***person***, while ***doing tasks*** in ***each room*** of their home

Home Eval: Syntax Matters

- People DO what they THINK
  - If we say, "***falls*** prevention", they think about ***falls*** and then they can ***fall***.
  - If we transition to, "***safe mobility***", they ***think*** about ***safe mobility*** and then ***do safe mobility*** during participation in tasks

Impact of Participation

Increase strength

Confidence

Participation

Socialization

Confidence

Proper Hydration and Nutrition

Active participation in occupations

By: Allison Rutz

Home Evaluation: High Accuracy

- Best method for identifying fall risk and increasing safe participation because it identifies most risk factors while analyzing the ***person***, in their ***authentic environment***, doing their ***normal activities.***

- Simulations in different settings are NOT accurate

Guiding Principles for Home Evaluation/Interventions

Barrier to Home Evaluation

Many older adults ***decline a home evaluation to address fall risk and safe mobility because they are afraid someone will try to “put them in a nursing home”.***

- This is problematic because there could be hazardous situations that could be remedied with simple adaptations (e.g. tub bench to sit down and swing legs over edge of tub rather than stepping over).

Initiating Idea for Home Eval:

- Solution: Collaborative Communication
  - What is your goal?
    - Many will indicate they want to go home or stay in their home as long as possible
  - “If going home is your goal, then I am the person who will help you get there and will help you stay there as long as you want”
    - Instant trust
  - “We typically do this by doing a home ***visit*** with you so that we can suggest ideas that will make things easier and safer for you.”

Initiating Referral for Home Eval

- IP Collaboration:
  - Who can generate a referral for a home eval?
    - Family, MD primary care, nursing, friends, social workers, PT, OT, SLP, counselors, etc
  - Who writes referral?
    - MD, DPT
  - Who can do the home eval?
    - Skilled professional who is trained in physical, cognitive, task analysis, and environmental analysis
    - PT, OT, Nursing are primary home evaluators but others may as well
    - MD could do it in rural areas where there are limited providers
  - All IP team members can review home eval summary to support recommendations and follow through

Pre-Home Eval

- IP team members can do pre-home eval risk factor screenings prior to going to the person's home, which can be used to focus home eval in certain tasks and rooms.

- Important for each IP team member to share screening results with team members prior to actual home eval

Pre-Home Eval: IP Screening Tools

- Intrinsic Fall Risk Factors
  - Balance:
    - BESTest (Horak, Wrisley, & Frank, 2009)
      - Includes righting reactions (ankle, knee, hip, step strategies)
  - Functional Gait Assessment (Wrisley & Kuran, 2010)
  - Strength: Manual muscle tests
  - Blood pressure: laying, sitting, standing
  - Hx of Falls: Details, tasks, locations
  - FoF: Falls Efficacy Scale (Tinetti, Richman, & Powell, 1990)
- Extrinsic Fall Risk Factors
  - Medications: side effects and drug interactions

Falls Efficacy Scale

Name_____

Date_____

On a scale from 1 to 10, with *1 being very confident and 10 being not confident at all, how confident are you that you do the following activities without falling?*

Take a bath or shower

Reach into cabinets or closets

Walk around the house

Prepare meals not requiring

carrying heavy or hot objects

Get in and out of bed

Answer the door or telephone

Get in and out of a chair

Getting dressed and undressed

Personal grooming (i.e. washing your face)

Getting on and off of the toilet

Total Score

Tinetti, M., Richman, D., Powell, L. (1990). Falls Efficacy as a Measure of Fear of Falling. Journal of Gerontology. 45;239

Home Eval: Ecology of Human Performance (Dunn, 1998)

MUST Assess:

- *Person*
- *Tasks*
- *Environments*

- Performance Range

Home Eval Safety

- Bring transfer belt
- Cell phone for emergency
- Gloves
- Hand sanitizer
- Mask
- Contact Guard/Standby/Minimal Assistance?

Virginia's Home Eval

- Safe Kitchen Mobility
- Evaluation and patient education are done concurrently to assure authenticity
- Virginia has a firm bag on her triangle walker. What other adaptations are useful in the kitchen to transport items when she needs to keep hands on walker?
  - Cookie sheet: place items on it and slide across counter
  - Walker tray
  - Beverage holders with heavy, wide base and cover to prevent spills

Virginia's Home Eval

- Living Room Mobility

- Andrew is an RN. I am an OT. Who else could do this home eval?
- What therapeutic communication strategy did he use?
- How does this strategy support ***sense of control*** in their own home and adherence?
- Notice how evaluation and home adjustments are done concurrently?

Virginia's Home Eval

- Bathroom mobility and toileting

- What are the risks in this video?
- How can we address those risks and when should we do it?

Virginia's Bedroom

- Dangerous bedspreads

- Virginia acknowledged the danger, but the spread was still hanging down in a way that could trip her.
- How can we collaborate with Virginia about making this safer without being controlling?

Bed Mobility

- Bed Mobility

- Repositioning bar: She had it in for a while and then removed it.
- What do you think are the reasons she removed it?
- Does she need it now?
- Will she need it during a migraine or nerve impingement episode? What if she gets sick?

Bathing

- Bathing is more frequently reported as the most difficult task, with higher rates of falls during this task.
- Tub transfer

- How shall we discuss tripping hazards in the bathroom?

Bathing: Enhancing Safety

- Enhancing safety with tub transfer

- Should Virginia get a different tub bench that goes over edge of tub? How might that affect walker mobility in the bathroom?

- Should there be a rug on the floor? Should it be a different rug that is lower pile, stiffer, and grippier?

Bathing: Motor Learning

- Repeat tub transfer after adjusting tub bench

- Important to use demonstrations and return demonstrations repeatedly to support proficient use of adaptive strategies

Stairs

- Potential to cause serious, life-threatening injuries
- Stairs with 2 Railings

- Notice the absence of speaking and concentration/attention she has during this task?
  - Higher challenge decreases dual task ability
  - This may be an area of which Virginia indicates being least confident on the falls efficacy scale

Showering

- Shower Mobility

- What shower recommendations should we offer?

- It would be easy to just recommend a raised toilet seat. How likely would Virginia follow through on that recommendation? So important to inquire about details to reveal client's preferences that influence adherence

Home Eval Report

- Home Eval Summary: strengths and challenges
- What do you think about the dogs and how could this be addressed?
- Recommendations/suggestions for Virginia?
  - Handrail edge of tub towards back or on wall behind tub bench above edge of tub. Can ask client if you can mark placement directly on wall for installer
  - Handrail installed in downstairs shower
  - Install raised toilet and rail on the right side of toilet
- Which IP team members should read report?

Safe Mobility Interventions in Home

Do educational interventions simultaneously during home evaluation

EHP (AOTA, 2021; Dunn, 1998)

- **Create/Promote** (health promotion): Education about connection between hydration and balance
- **Establish/restore**: Implement lower extremity home exercise program that fits into normal habits & routines
- **Maintain**: Reinforce client's strategies that are already working safely for them, such as Virginia's rails by toilet and stairs
- **Modify/adapt:** modify ways to transport food items while Virginia kept hands on walker
- **Prevent:** Remove/reposition tripping hazards, like how Andrew moved the chair in Virginia's living room

Sense of Control

- Some older adults feel loss of control associated with age-related changes
- It is their home and they have a right to be involved in recommendations
- Important to always ***give them choices***
  - How would you like to start this task?
  - I have 2 suggestions in this room…Which one would you rather use?
  - I would like to recommend….What changes would you like to make to that recommendation?

Client Education

- "***Compliance" is a bad word*** as it suggests hierarchy authority over client. Please, Do NOT use this word

- "***Adherence***" or "***Ability/desire to follow through***" are better words because they suggest a collaborative relationship with the client. Please, DO use these words.

- It is the ***provider's responsibility to identify barriers*** to adherence and then collaborate on strategies to overcome the barriers.

Client Education: Follow-up

- Provide verbal AND written recommendations in lay terms
  - Do NOT expect recall of auditory instructions
  - Most people only retain 12% of auditory info
  - Hearing loss common
- Use images when possible
- Take pictures/videos during visit to make patient education material from so images and instructions are authentic to client and their home
- Education materials should have balance between images, words at 6th grade reading level, and white space.

Other Resources

CDC Initiative

Stopping Elderly Accidents, Deaths & Injuries (STEADI) initiative

- Tookit:
  - Screening
  - Assess modifiable risk factors
  - Evidence-based interventions

- STEADI Toolkit Contents

STEADI for Pre-Home Evaluations

- Algorithm
- Pocket Guide
- Screenings (e.g. Timed Up & Go)
- Fall Facts
- Medications Linked to Falls
- Wall Chart to Integrate Fall Prevention into Practice
- Forms, Checklists, Referrals
- Talking about Falls with Patients
- Caregiver Education Materials

Johns Hopkins Fall Risk Assessment (Poe, et al., 2018)

- Fall risk assessment used in multiple hospital organizations
- Not free to public; must be purchased
- Evidence of psychometrics suggests it is reliable and valid
  - https://insights.ovid.com/crossref?an=00001786-201801000-00003
  - Authors are from Johns Hopkins University

CDC

- Falls Prevention
- Compendium for Falls Prevention
- Guide for Community-based Falls Prevention

Summary

- IP Team is needed for preventing falls
- Multiple IP team members can conduct Pre-Home Eval Screenings and relay results to rest of team
- Home Evaluation is the most accurate assessment and offers opportunity for intervention in natural environment
- Home Evaluation and Safe Mobility Interventions should be done concurrently while client/patient is performing each task

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