How to prevent fear of falling?

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Session outline

1. Definition of fear of falling
2. Epidemiology
3. Risk factors and outcomes
4. Measurements
5. Prevention and treatment strategy
CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report
Definition

• **Basophobia** - Inability to walk or stand erect, due to emotional causes.

• **Ptophobia** – fear of not being able to stand or walk as a result of accidental falls.
Fear of falling is one we are born with
„Visual Cliff” by E.J. Gibson and R.D. Walk
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Fear of falling (FoF) in geriatrics

• Ongoing concern about falling leading to avoidance of the performance of daily activities


• Post-fall syndrome  *(Murphy J, Isaacs B. Gerontology. 1982;28(4):265-70.)*

  36 patients (>65 years) admitted to hospital after suffering a fall - 10 patients developed a severe tendency to clutch and grab and were unable to walk unsupported; 16 patients showed similar signs but were able to walk independently;

• It also may affect people who didn’t experience a fall
Definition(s) of FoF in geriatrics

- Being frightened of falling
- Lack of confidence in maintaining balance during normal activities
- Concern that normal activities cannot be performed without falling
Epidemiology

• FoF in community living older people – 20-85%
  • Among people who experienced a fall – 2 per 3 persons
  • Without previous fall – 1 per 3 persons

• Avoiding of activity due to FoF – 15-55%

Zijstra et al. Age Ageing 2007; 36:304-9
Epidemiology

Observation 1 year

313 community-living women >72y.o.
No FoF at beginning

27% - developed FoF
25% - experienced a fall

People at risk

Risk Factors

- Age
- Female gender
- Lower educational level
- Lower income
- Living alone
- History of falls
- Decreased mobility, gait and balance abnormalities
- Depression
- Comorbidity
- Poor perceived health
- Pain

Outcomes

FoF and avoidance of activities

Fear of falling
- Falls
- Decrease in ADL
- Decreased postural control
- Reduction of feared activities
- Loss of muscle strength

Delbare K et al. Age Ageing 2004;33:368-73.
FoF and dual task

Brustio PR et al. Aging Mental Health 2017
FoF and „fearful gait”

- Reduced stride length
- Reduced speed
- Increased double-support time
- Higher gait variability

Consequences

Risk Factors

- Age
- Female gender
- Poor perceived health
- History of falls
- Lower educational level
- Lower income
- Decreased mobility, gait and balance abnormalities
- Using walking aids
- Living alone
- Depression
- Comorbidity

Outcomes

- Reduced physical activity
- Reduced activities of daily living
- Gait and balance abnormalities
- Risk of falls
- Lower perceived health status
- Higher levels of depression
- Prolonged rehabilitation after injury and fall
- Lower quality of life
- Risk of institutionalization

Vellas 1997, Martin 2005, Da Costa 2012, Jefferis 2014,
How to access?

1. Fear of Falling measurements
   - **Single question** – „Are you afraid of falling?” – Yes/No
   - **Single question** – numerical rating – i.e. not at all; slightly; some what; very afraid
   - **SAFFE** – Survey of Activities and Fear of Falling in the Elderly

2. Fall-efficacy measurements
   - **FES** – Fall Efficacy Scale
   - **FES-I** – Fall Efficacy Scale International
   - **ABC** – Activities, Balance, Confidence Scale
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### SAFFE Scale

**Activities**

1. Go to the store
2. Prepare simple meals
3. Take a tube bath
4. Get out of bed
5. Take a walk for exercise
6. Go out when it is slippery
7. Visit a friend or relative
8. Reach for something over your head
9. Go to a place with crowds
10. Walk several blocks outside
11. Bend down to get something

**Questions**

A. Do you currently do it;
B. If you do the activity, when you do it how worried are you that you might fall
C. If you do not do the activity, do you not do it because you are worried that you might fall;
D. If you do not do the activity because of worry, are there also other reasons that you do not do it;
E. For those not worried, what are the reasons that you do not do it;
F. Compared to 5 years ago would you say that you do it more than you used to; about the same or less than you used to

**Scoring**

A – activity level
B – Fear of Falling Status
F – Activity restrictions

C,D,E - determine the number of activities that are not done because of other reasons in addition to fear of falling

Scoring range – 0-33

How to access?

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FES Scale

Activities

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

Questions

On a scale from 1 to 10, how confident are you that you do the following activities without falling?

Scoring

1 = very confident
10 = not confident at all
Score range – 0-100

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FES-I Scale

Activities
1. Cleaning the house
2. Getting dressed/undressed
3. Preparing simple meals
4. Taking a bath or shower
5. Going to the shop
6. Getting in or out of chair
7. Going up or down stairs
8. Walking around outside
9. Reaching up or bending down
10. Answering the telephone
11. Visiting a friend/relative
12. Walking on a slippery Surface
13. Walking in a place with crowds
14. Walking on an uneven Surface
15. Walking up or down a slope
16. Going out to a social event

Questions
On a scale from 1 to 4, how concerned are you that you do the following activities without falling?

Scoring
1 = not concerned at all
2 = somewhat concerned
3 = fairly concerned
4 = very concerned
Score range – 16-64

FES-I Scale – Short Version

Activities

1. Cleaning the house
2. Getting dressed/undressed
3. Preparing simple meals
4. Taking a bath or shower
5. Going to the shop
6. Getting in or out of chair
7. Going up or down stairs
8. Walking around outside
9. Reaching up or bending down
10. Answering the telephone
11. Visiting a friend/relative
12. Walking on a slippery Surface
13. Walking in a place with crowds
14. Walking on an uneven Surface
15. Walking up or down a slope
16. Going out to a social event

Questions

On a scale from 1 to 4, how concerned are you that you do the following activities without falling?

Scoring

1 = not concerned at all
2 = somewhat concerned
3 = fairly concerned
4 = very concerned

Score range – 7-28

How to access?

1. Fear of Falling measurements
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## ABC Scale

### Activities

1. walk around the house
2. walk up or down stairs
3. bend over and pick up a slipper from the front of a closet floor
4. reach for a small can off a shelf at eye level
5. stand on your tip toes and reach for something above your head
6. stand on a chair and reach for something
7. sweep the floor
8. walk outside the house to a car parked in the driveway
9. get into or out of a car
10. walk across a parking lot to the mall
11. walk up or down a ramp
12. walk in a crowded mall where people rapidly walk past you
13. are bumped into by people as you walk through the mall
14. step onto or off of an escalator while you are holding onto a railing
15. step onto or off an escalator while holding onto parcels such that you cannot hold onto the railing?
16. walk outside on icy sidewalks

### Questions

How confident are you that you will not lose your balance or become unsteady?

### Scoring

- **0% No Confidence**
- **100% Completely Confident**

Scoring: total score / 16 = % of self confidence

How to prevent?

Kery Skarbakka, *The Struggle to Right Oneself*
People at risk

Risk Factors

- Age
- Female gender
- Lower educational level
- Lower income
- Living alone
- History of falls
- Decreased mobility, gait and balance abnormalities
- Depression
- Comorbidity
- Poor perceived health
- Pain

Outcomes

People at risk

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Outcomes

Multifactorial falls risk assessment

- falls history
- gait, balance and mobility, strength and muscle weakness
  - osteoporosis and fracture risk
- perceived functional ability and FoF
  - visual impairment
- cognitive impairment and neurological examination
  - urinary incontinence
  - home hazards
- cardiovascular examination
  - medication review

Multifactorial intervention

- Strength and balance training
- Home hazards intervention
- Vision assessment and referral
  - Medication review with modification/withdrawal

NICE Guidelines 2013 Falls in older people: assessing risk and prevention
Planning what will happen when I fall

• Teaching patients how to get up from a fall

• Practice with them getting up

1. Roll onto your side.
2. Crawl over to a chair or sturdy furniture.
3. From a kneeling position, put your arms up onto the seat of the chair.
4. Bring one knee forward. Place that foot on the floor.
5. Push up with your arms and legs. Pivot your bottom around.
6. Sit down. Rest before trying to move.

• Patients living alone – personal alarms, mobile phone

http://www.healthyathome24-7.org
People at risk

Risk Factors

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- Female gender
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- Pain

Outcomes

Gait & balance abnormalities management

- Excercise interventions
  - Tai Chi, Yoga,
  - balance training,
  - strenght and resistance training

- Othopedic aids
People at risk

Risk Factors

- Age
- Female gender
- Lower educational level
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- Living alone
- History of falls
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- Poor perceived health
- Pain

Outcomes

Psychological factors and FoF

• Screening and treatment of depression

  • Depression and symptoms of depression (insomnia and use of sedatives, poor appetite and malnutrition) contribute to falls

  • Fear of falling can lead to social isolation and result in depression

People at risk

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- Female gender
- Lower educational level
- Lower income
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Outcomes

Health status and FoF

- History of neurological problems (stroke, Parkinson’s disease)
- Cardiac disease
- Arthritis, osteoporosis
- Cataracts/glaucoma
- Diabetes
- Acute illness

- Medication/polypharmacy

People at risk

Risk Factors

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- Living alone
- History of falls
- Decreased mobility, gait and balance abnormalities
- Depression
- Comorbidity
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- Pain

Outcomes

Vellas B 1997; Murphy SL 2003; Iaboni A 2013, Tomita Y 2015, Zijlstra GA 2007, Kumar A 2014
Pain and FoF

• pain is associated with fear of falling (FOF), avoidance of activities due to FOF and falls efficacy in community dwelling older adults
  

• Poor physical performance and low back, upper and lower extremity pain is associated with fear of falling after adjusting for age, BMI, comorbidities, falls history and cataracts
  
  Timota et al. Medicine 2015; 94(35):e1449

• Importance of pain management, especially after fall
What do surveys say?
Excercise interventions

Interventions to Reduce Fear of Falling in Community-Living Older People: A Systematic Review

G. A. Rixt Zijlstra, MSc,☆† Jolanda C. M. van Haastregt, PhD,☆† Erik van Rossum, PhD,☆† Jacques Tb. M. van Eijk, PhD,☆† Lucy Yardley, PhD,☆ and Gertrudis I. J. M. Kempen, PhD☆†

- 19 randomised controlled trials
- multifactorial programmes targeting falls, home based excercise interventions, balance training, hip protector improved fear of falling
Exercise for reducing fear of falling in older people living in the community: Cochrane systematic review and meta-analysis

- 30 trials (2878 participants)
- 36 interventions – Tai Chi and Yoga, balance training, strength and resistance training
- Exercise interventions probably reduce FoF immediately after intervention
- Insufficient evidence – whether exercise reduce FoF in the longer term
Excercise interventions

Reducing the fear of falling among community-dwelling elderly adults through cognitive-behavioural strategies and intense Tai Chi exercise: a randomized controlled trial

Tzu-Ting Huang, Lin-Hui Yang & Chia-Yih Liu

- 176 participants
- Cognitive behavioural strategy with Tai Chi intervention is effective for reducing fear of falling among community dwelling older adults.
Excercise and nutrition

- randomised controlled trial - the effects of a 12-week home-based intervention program carried out on FOF in frail older adults.
- A 12-week structured physical training and nutrition intervention carried out by lay volunteers, which leads to an increase in physical activity and improved physical performance, can reduce FOF by about 10%
Psychological interventions

Effects of a Multicomponent Cognitive Behavioral Group Intervention on Fear of Falling and Activity Avoidance in Community-Dwelling Older Adults: Results of a Randomized Controlled Trial

G. A. Rixt Zijlstra, PhD,* Jolanda C. M. van Haastregt, PhD,* Ton Amhergen, PhD,† Erik van Rossum, PhD,* Jacques Th. M. van Eijk, PhD,‡ Sharon L. Tennstedt, PhD,* and Gertrudis I. J. M. Kempen, PhD*

- 540 participants
- 8 weekly sessions and a booster session (realistic views on falls, reducing fall risk, increasing activity and safe behaviour)
- Positive and durable effects on FoF
Do they want to prevent FoF?...

• Cross-sectional study, 5755 community dwelling people>70y.o.
• Questionaire – willingness to participate different programme formats for managing concerns about falls

• 62,7% - no interests in any of the formats
• The willingness varied between 9,4% (format via internet) and 21,5% (programme at home)

• Among people who reported concerns about falls – the interest to participate in at least 1 format increased to 59,2%

Summary

• Fear of falling may affect up to 85% of older persons
• Also persons without a history of a fall
• Numerous assessment tools are available
• Multifactorial interventions including exercise, cognitive-behavioral therapy and nutrition may be effective
• ... if the patients want to participate in....
Thank you!