Fear of Falling: Measurement and effect on exercise

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www.NeuRA.edu.au

Conceptualizations

1. **Fear of falling** = continuous concern regarding falls which may limit ADL
2. **Falls efficacy** = perceived ability to confidently undertake ADL without falling

<table>
<thead>
<tr>
<th>Concept</th>
<th>Indoor</th>
<th>Outdoor</th>
<th>Social</th>
<th>Risky</th>
<th>Items</th>
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<tbody>
<tr>
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<td>Fear</td>
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<td>No</td>
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<tr>
<td>Multiple items</td>
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<td>Icon-FES</td>
<td>Concern</td>
<td>Yes</td>
<td>Yes</td>
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</table>

Questions

- Are you concerned about falling?
  - No, a little, quite a lot, very much

- Are there ADL that you are not confident doing because of fear of falling?
  - E.g. Reaching

- Do you avoid certain ADL because you are afraid of falling?
  - E.g. shopping, taking a bath/shower

- Do you avoid certain situations because you are afraid of falling?
  - E.g. going to the markets on a crowded day

Inventories

1. **Falls Efficacy Scale (FES)**
   - Fear was operationalized as “low perceived self-efficacy or confidence at avoiding falls”
   - 10 daily activities essential to independent living
     - Activities that require some position change or walking
     - Safe and non-hazardous activities, mainly indoor
   - Item score range: 1 (high efficacy) to 10 (lower efficacy)
   - Total score range: 10 to 100
   - Refs:

2. **Falls efficacy Scale International (FES-I)**
   - www.profane.eu.org
   - Fear is operationalised as concern about falling
   - 7/16 daily activities
     - Including indoor, outdoor, social ADL
   - Item score range: 1 (not at all concerned about falling) to 4 (very concerned)
   - Interpretation
     - 16-19: Low levels of concern
     - 20-27: Moderate levels of concern
     - 28-44: High levels of concern
   - Refs:

3. **Iconographical Falls efficacy Scale (Icon-FES)**
   - www.NeuRA.com.au
   - Concern about falling on 10/30 daily activities
     - Including indoor, outdoor, social, risky ADL
   - Using pictures as visual cues
   - Item score range:
     - 1: Not at all concerned
     - 2: Somewhat concerned
     - 3: Fairly concerned
     - 4: Very concerned
   - Refs:
Icon-FES
Excellent psychometric properties

Additional more demanding balance-related activities:
• Near-normal distribution
• No floor effect in highly functioning people
• 4 different levels of concern about falling

Use of pictures and contexts:
• Important to keep items separate with different contexts:
  • E.g. more people concerned about taking a bath compared to taking a shower
  • Unambiguous contexts aid conceptualization of item activities
  • Same for all participants, regardless of physical abilities
  • Same over time, regardless of improvement/decline of physical abilities
  • Suitable for use in cognitively impaired older adults

Icon-FES: Implications

Diagnostic value
• 1 scale for all (community-dwelling) older people
• Regardless of physical or cognitive abilities
• Other cultural settings, illiterate people?
• Will help to discriminate people with different levels of concern about falling with higher accuracy
• Inappropriate vs ‘acceptable’ levels of concern
• Risk-taking behaviour
• In different circumstances

In intervention studies/programs:
• Can be used to identify activities that need guided exposure as part of CBT
• Can assist targeting people towards falls prevention, depending on level of concern in different circumstances relative to fall risk
• Possibly with a better sensitivity to change

Exercise to reduce fear of falling

• Systematic review: 25 studies including a total of 2,578 community-dwelling older adults

• Provided or prescribed exercise was associated with a significant reduction in fear of falling, immediately post-intervention (SMD 0.24, 95% CI 0.14 to 0.34)

• There was no significant effect of exercise interventions on fear of falling beyond the end of the intervention period (3 studies included data up to 6 months and 2 included data at 6 months and beyond).

Kendrick D et al, Cochrane (submitted)

Cognitive behavioural approach

Cautious behaviour  Negative thoughts  Positive thoughts  Low fear of falling

High fear of falling  Adaptive behaviour

Cognitive behavioural therapy

Best-practice principles used in CBT towards fall prevention

• Cognitive restructuring of misconceptions to promote a view of fall risk and fear of falling as controllable
  – E.g. education on commonness of fear of falling
• Problem solving: towards activity avoidance, unsafe behaviour, and unsafe environment, relevance of own assertive behaviour in fall prevention and learning to communicate in a considerate assertive way when they need assistance
  – E.g. install a handrail next to the bathtub
  – E.g. ask for assistance
• Behavioural activation, graded exposure: setting goals to encourage patients to approach activities that they are avoiding
  – E.g. first time together with someone else

Exercise + CBT

• The inclusion of CBT sessions in fall prevention programs addressing fear of falling is likely to enhance the effects of exercise programs
• Providing people with better anxiety management skills is likely to help older people with a fear of falling to improve their level of concentration when they encounter hazardous situations and hence reduce their risk of falling.
• Factors such as loss of motivation and apathy, which are commonly reported in old age, could also be addressed to promote uptake and adherence to exercise programs.

Kendrick D et al, Cochrane (submitted)