Falls Prevention for People with Dementia: OT interventions

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Dementia is a major health care problem with prevalence to increase four-fold\textsuperscript{1}

People with dementia: twice the risk of falling & higher risk of injury than those without cognitive impairment\textsuperscript{2}

No proven effective strategies for preventing falls in this population in the community\textsuperscript{3}
People with Dementia & OT

Problems experienced
- Individual manifestation of symptoms
- Poor ST memory
- Poor hazard identification & abstract thinking ability
- Limited ‘functional’ vision e.g. below knee hgt/ within arm’s length
- Reduced awareness of actions during task performance

Problems solved
- Tailored intervention
- Understanding person’s behaviours & habits
- Use of procedural memory for training
- Supportive/ adapted environment including enhanced visual cues
- Carers/ family adapting and facilitating function – not trying to change person
Acknowledgements

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i-FOCIS Team:
- A/ Prof Lindy Clemson
- A/ Prof Jacqui Close
- Prof Henry Brodaty
- Morag Taylor
- Prof Stephen Lord
- Jacki Wesson
i-FOCIS Pilot Study - Overview

**Recruitment**

**Baseline Measures & Randomisation**

**INTERVENTION GROUP**

- Home Hazards Reduction & Exercise Program
- Monthly Falls Calendars

**CONTROL GROUP**

- Usual Care

**Re Assessment Measures**
i-FOCIS Intervention Protocol

Wk 1 OT visit
Wk 2 OT visit
Wk 3 OT visit
Wk 4 OT visit
Wk 5 OT visit
Wk 6 OT visit
Wk 7 OT visit
Wk 8 OT visit
Wk 9 OT visit
Wk 10 OT visit
Wk 11 OT visit
Wk 12 OT visit

Wk 1 PT visit
Wk 2 PT visit
Wk 3 PT visit
Wk 4 PT visit
Wk 5 PT visit
Wk 6 PT visit
Wk 7 PT visit
Wk 8 PT visit
Wk 9 PT visit
Wk 10 PT visit
Wk 11 PT visit
Wk 12 PT visit
## Baseline Characteristics: Intervention Group (n=11)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
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<tbody>
<tr>
<td>Age (mean ± SD)</td>
<td>78.7 (± 4.2)</td>
</tr>
<tr>
<td>Education (mean ± SD)</td>
<td>10.6 (± 2.4)</td>
</tr>
<tr>
<td>Males: females</td>
<td>6:5</td>
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<tr>
<td>Living situation:</td>
<td></td>
</tr>
<tr>
<td>• With spouse/family</td>
<td>n=7</td>
</tr>
<tr>
<td>• Alone</td>
<td>n=4</td>
</tr>
<tr>
<td>ACE-R (mean ± SD)</td>
<td>67.8 (± 12.5)</td>
</tr>
<tr>
<td>MMSE (mean ± SD)</td>
<td>24.5 (± 3.1)</td>
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<tr>
<td>Falls prior year</td>
<td>2.09</td>
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OT component: Home Safety

- Recommendations based on Westmead Home Safety Ax
- Included reasoning to highlight hazards
- Three sections:
  - Habits to change
  - Things to buy
  - HMMS referral
Home Mods used: Interventions

- Flooring changes:
  - Secure/ remove mats; highlight step edges
- Changing footwear
- Blister pack for medication
- Personal alarms:
  - Vitalcall or Safe2Walk
- Reducing clutter/ improving access
- Lighting changes:
  - Brighter bulbs; sensor lights; reduce glare; turn on lights
### Home Safety Adherence

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<table>
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<tbody>
<tr>
<td><strong>Total Number of Recommendations</strong></td>
<td><strong>207</strong></td>
</tr>
<tr>
<td><strong>Number of recommendations per participant - mean (range)</strong></td>
<td><strong>20.7 (13-29)</strong></td>
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<tr>
<td><strong>Number implemented – mean (range)</strong></td>
<td><strong>10 (3-24)</strong></td>
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<tr>
<td><strong>Percent adherence per participant</strong></td>
<td><strong>48.6%</strong> (^{10})</td>
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## Falls Data

<table>
<thead>
<tr>
<th></th>
<th>Intervention (n=11)</th>
<th>Control (n=11)</th>
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<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
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<tr>
<td>Falls in prior year – mean (SD)</td>
<td>2.09 (± 2.5)</td>
<td>2.45 (± 3.17)</td>
</tr>
<tr>
<td>Range</td>
<td>0-8</td>
<td>0-11</td>
</tr>
<tr>
<td>Percent fallen</td>
<td>63%</td>
<td>81.2%</td>
</tr>
<tr>
<td>Fallen &gt; 2 times</td>
<td>45.4%</td>
<td>45.4%</td>
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<tr>
<td><strong>Follow Up</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Falls to re-Ax – mean (SD)</td>
<td>0.45 (± 0.82)</td>
<td>1.0 (± 1.48)</td>
</tr>
<tr>
<td>Range</td>
<td>0-2</td>
<td>0-4</td>
</tr>
<tr>
<td>Percent fallen</td>
<td>27.3%</td>
<td>36.4%</td>
</tr>
<tr>
<td>Fallen &gt; 2 times</td>
<td>18.2%</td>
<td>36.4%</td>
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Reduction in falls rate by 58% but not significant  
IRR = 0.42 (p = 0.28)
Factors influencing adherence

- Falls in year prior + age $\geq 80$ years
  - Higher adherence: 1 or more falls
- Poorer cognition
  - Higher adherence: lower ACE-R scores
- Carer stress
  - Lower adherence: higher stress
- Living alone?
- Lower perceived risk or need
- Financial considerations
- HMMS delays/ short study time frame
Additional considerations

- General awareness of falls prevention for participant and carer:
  - Perception of need for interventions

- Role of carer/ family:
  - Be proactive
  - Identify hazards
  - Set up environment
  - Recording strategies
  - Training behaviours
Clinical Implications

- Assess for cognitive impairment – many clinicians don’t recognise cognitive deficits
- Observe task performance – don’t just discuss it
- Broader knowledge of falls risks combined with impact of cognitive impairment on everyday functioning:
  - E.g. Nutrition – PWD living alone forget to eat – dizzy- fall
  - Medication – mixing dosages/ timing
- Awareness of co-morbidities & cognitive implications
- Make ‘hidden’ cues visible
- Habits and routines of PWD
- Manage behaviours of concern & aggression/ agitation
- Support, availability and attitudes of carers
References