Frailty-Free Life Expectancy at age 70 between European Countries

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Plan

• Frailty models and the disablement process
  – deficits
  – phenotype

• Methods: Calculating LE in frailty and disability states
  – Data (SHARE)
  – Measures

• Results: LE in frailty and disability states
  – by age
  – at age 70 by country

• Conclusions
Frailty models and the disablement process

- Definition of frailty: the condition of being weak and delicate (*Oxford Dictionary*)
- Deficits model (Rockwood)
  - a cumulative index of health deficits which can include diseases, symptoms and signs, function tests and laboratory tests
  - Disability included
- Phenotypic model (Fried)
  - clinical syndrome, a cluster of specific symptoms and signs including weight loss, exhaustion, low physical activity, muscle weakness and slow walking speed
  - Disability separate
Methods

• SHARE wave 4 (2010-11)
  — Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Sweden

• Sullivan’s method
  — life table for each country and sex from EHLEIS

• Combined SHARE Frailty Index (SHARE-FI) and Global Activity Limitation Indicator (GALI) to create 4 states
  — robust, pre-frail, frail, severely limited
SHARE Frailty Index (SHARE-FI)

• SHARE Frailty Index (SHARE-FI)*
  – **Exhaustion**: “In the last month, have you had too little energy to do the things you wanted to do?”
  – **Weight loss**: “Diminution in desire for food”/“eating less than usual”
  – **Weakness**: handgrip strength
  – **Slowness**: Difficulty in walking 100 metres or climbing stairs
  – **Low activity**

• Global Activity Limitation Indicator (GALI)**
  – For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been 1. severely limited 2. limited but not severely, or 3. not limited at all?

*Romero-Ortuno R et al. *BMC Geriatrics* 2010;10:57
## Frailty and disability states

<table>
<thead>
<tr>
<th>SHARE FI</th>
<th>Not limited</th>
<th>Limited not severe</th>
<th>Severely limited</th>
<th>Missing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust</td>
<td>22292</td>
<td>10985</td>
<td>2698</td>
<td>9</td>
<td>35984</td>
</tr>
<tr>
<td>Pre-frail</td>
<td>2231</td>
<td>3608</td>
<td>2169</td>
<td>4</td>
<td>8012</td>
</tr>
<tr>
<td>Frail</td>
<td>381</td>
<td>1520</td>
<td>2414</td>
<td>0</td>
<td>4315</td>
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<tr>
<td>Missing</td>
<td>1390</td>
<td>1571</td>
<td>2053</td>
<td>270</td>
<td>5284</td>
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<tr>
<td>Total</td>
<td>26294</td>
<td>17684</td>
<td>9334</td>
<td>283</td>
<td>53595</td>
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</tbody>
</table>

**Legend:**
- **Robust**
- **Pre-frail**
- **Frail**
- **Severely limited**

**Institute for Ageing and Health**
LE in each frailty state by sex and age (all countries)
LE robust at age 70 (95%CI), by sex and country
LE pre-frail at age 70 (95% CI), by sex and country

Expected years of life at age 70 with pre frailty
LE frail at age 70 (95%CI), by sex and country

Expected years of life at age 70 with frailty
LE severely limited at age 70 (95%CI), by sex and country

Expected years of life at age 70 with severe activity limitation
Strengths and limitations

- Limitations
  - institutions not included
  - not perfect Fried definition of frailty
  - cross-sectional

- Strengths
  - multi country including Eastern Europe
  - incorporates frailty and disability
Conclusions

• Women spend more time than men pre-frail, frail and with severe activity limitation
  – in all European countries and
  – at all ages

• Some evidence of North-South gradient with LE frail and pre-frail higher in Southern than Northern European countries

• Relatively short time spent frail (men: 0.7 years, women: 1.8 years)

• Years pre-frail (men: 1.8 years, women: 3.7 years) may provide short window of opportunity for interventions
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Questions?

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