DETECTION OF MULTIDIMENSIONAL FRAILTY IN COMMUNITY DWELLING OLDER PEOPLE

Nico De Witte
Detection of multidimensional frailty in community dwelling older people

Population Ageing

% 65+

0.0% 5.0% 10.0% 15.0% 20.0% 25.0% 30.0%


23.9%
Detection of multidimensional frailty in community dwelling older people

CONTEXT

Population Ageing

Knokke-Heist 2003

Flanders, 2030
Detection of multidimensional frailty in community dwelling older people

CONTEXT

Population Ageing

Ageing in place

Desinstitutionalisation
Federal Council on Aging 1979

persons, usually but not always, over the age of 75, who because of an accumulation of various continuing problems often require one or several supportive services in order to cope with daily live

MeSH 1991

older adults or aged individuals who are lacking in general strength and are unusually susceptible to disease or to other infirmity.”
Detection of multidimensional frailty in community dwelling older people
FRAILTY

Unidimensional approach

biomedical indicators  eg. Fried

Multidimensional approach

holistic perspective: physical, psychological, social, contextual
EXPERTS’ OPINION OR LIVED EXPERIENCES?

Quote of an 82 year old lady:

“Yes, the doctor told me that I'm frail because I walk too slow. But you know what, I have plenty of time so why I need to hurry?...”

Older people themselves have different opinions about frailty then experts
DEVELOPMENT OF THE COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI) 2008

LIFE COURSE PERSPECTIVE + DYNAMIC + CONTEXTUAL

- Physical domain of frailty
  - Limitations in physical activities because of health problems
- Environmental domain of frailty
  - Housing conditions
  - Environmental conditions
- Psychological domain of frailty
  - Mood disorders
  - Emotional loneliness
- Social domain of frailty
  - Experiencing social loneliness
  - Shortages in social support
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

VALIDATION

Validation: second order confirmatory factor analysis

- 33629 community dwelling older people (Flanders) => Belgian Ageing Studies dataset 60+

Good internal consistency

- Cronbach’s $\alpha$ .812,
- 63.6% explained variance

Good fit-indices

- RMSEA = .032 (90% interval = .032 to .033)
- CFI = .974
- TLI = .970
RESULTS

COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)
RESULTS

COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

- Feeling unhappy
- Losing self-confidence
- Unable to cope with problems
- Feeling pressure
- Feeling nothing worth anymore

- I experience a general sense of emptiness
- I miss having people around me
- I often feel rejected

CFAI

Mood

Social

Emotion

Social Support
**Two step cluster analysis for overall frailty and subdomains** (physical, psychological, social and environmental)

**High**
Customized care / reduction

**Mild**
Customized care / reduction / prevention

**Low**
Prevention / follow up

COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS-PREVALENCE

Source: BAS
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS-AGE

**Physical**
- No-low: 69.3
- Mild: 73.2
- High: 76.9

**Psychological**
- No-low: 70.9
- Mild: 72.2
- High: 73.0

**Social**
- No-low: 71.2
- Mild: 71.4
- High: 72.1

**Environmental**
- No-low: 71.4
- Mild: 71.5
- High: 72.6
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS-COMMUNITY

Physical frailty
high: 8.9% to 26.2% (mean 16.5%)

Psychological frailty
high: 4.1% to 17.8% (mean 9.0%)

Social frailty
high: 12.4% to 33.1% (mean 20.6%)

Environmental frailty
high: 8.7% to 26.8% (mean 14.8%)
## COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

### RESULTS - QUALITY OF LIFE

**WHOQoL-BREF ↔ CFAI**

- Community dwelling older people
- N=327


<table>
<thead>
<tr>
<th></th>
<th>Physical frailty</th>
<th>Psychological frailty</th>
<th>Social frailty</th>
<th>Environmental frailty</th>
<th>Frailty total</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL physical</td>
<td>-0.602***</td>
<td>-0.453***</td>
<td>-0.250***</td>
<td>-0.263***</td>
<td>-0.664***</td>
</tr>
<tr>
<td>QOL psychological</td>
<td>-0.267***</td>
<td>-0.579***</td>
<td>-0.325***</td>
<td>-0.242***</td>
<td>-0.517***</td>
</tr>
<tr>
<td>QOL social</td>
<td>-0.128*</td>
<td>-0.444***</td>
<td>-0.353***</td>
<td>-0.188**</td>
<td>-0.383***</td>
</tr>
<tr>
<td>QOL environment</td>
<td>-0.275***</td>
<td>-0.472***</td>
<td>-0.337***</td>
<td><strong>0.403</strong>*</td>
<td>-0.541***</td>
</tr>
<tr>
<td>QOL total</td>
<td>-0.424***</td>
<td>-0.622***</td>
<td>-0.404***</td>
<td>-0.352***</td>
<td>-0.683***</td>
</tr>
</tbody>
</table>

* P < 0.05  
** P < 0.01  
*** P < 0.001
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS - QUALITY OF LIFE

WHOQoL-BREF ⇔ CFAI

- Community dwelling older people
- N = 327
COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)

RESULTS - QUALITY OF LIFE

WHOQoL-BREF ↔ CFAI
SCREENING FOR FRAILTY

2017-...

- 3281 community dwelling older people
  - 65+, 70+, 80+
- Visited by volunteers
- Data-analysis by province
  - Scores analysed for individuals
  - Scores analysed for neighborhoods
- Combined with “ouder worden in je buurt”
Based on socio-demographic indicators

PRE-SCREENING FOR FRAILTY

SOCIO-DEMOGRAPHIC INDICATORS

9,0%

14,1%

19,2%

23,1%
PRE-SCREENING FOR FRAILTY

Based on socio-demographic indicators

Based on topics applicable in normal conversations

PRE-SCREENING FOR FRAILTY
NORMAL CONVERSATIONS

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PRE-SCREENING FOR FRAILTY

Based on socio-demographic indicators

Based on topics from normal conversations

Using telephone conversations
PRE-SCREENING FOR FRAILTY
TELEPHONE CONVERSATIONS

Proof of concept study

- Rebuild instrument
- Telephone conversations (appr. 7 min) between older respondent and professional
- Scenario & real time scoring
- Cross validation with self administer CFAI

<table>
<thead>
<tr>
<th></th>
<th>Trail 1 (n=42)</th>
<th>Trail 2 (n=47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>88,1%</td>
<td>95,7%</td>
</tr>
<tr>
<td>Psychological</td>
<td>61,3%</td>
<td>87,0%</td>
</tr>
<tr>
<td>Social</td>
<td>72,7%</td>
<td>89,1%</td>
</tr>
<tr>
<td>Environmental</td>
<td>89,4%</td>
<td>91,1%</td>
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</table>
PRE-SCREENING
EARLY DETECTION

In hospitals?

Sorry, too late.

At home?

Early detection Prevention
Frailty important within ageing

Different approaches: benefits

Paradigmashift: new vision towards frailty
- positive
- Dynamic
- Lived experiences
- Capabilities & coping (Verté, 2017)
- Reduction and prevention

Quality of life
- Coping strategies, self management

Need for early screening

Pre screening
- Multi channel pre screening needed

Development of frailty prevention and frailty reduction programs

CONCLUSION
THANK YOU

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COMPREHENSIVE FRAILTY ASSESSMENT INSTRUMENT (CFAI)S

**BENEFITS**

- Not too long (23 items)
- Self-administer
- Widespread screening in the community
- Holistic perspective including environment

Early detection, reduction adverse outcomes

Customized care