Lifetime in various health states among the oldest-old in Denmark

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Purpose

To quantify the average lifetime according to health status among the oldest-old in Denmark.
Data

Survivors of the 1905 Danish birth cohort. 2259 participants (63% of all survivors) were interviewed in 1998 and re-assessed in 2000, 2003 and 2005.
Self-rated health

Question:

‘How would you rate your health in general?’

Answer categories:

‘very good’, ‘good’, ‘fair’, ‘poor’, ‘very poor’

grouped into:

‘good’, ‘fair’ and ‘poor’
Physically independent

If she did not require assistance to

- get up from a chair or a bed
- walk around in the house
- go to the toilet

If a person was too weak to participate, a proxy was asked to assist
Cognitive function

Measured by

the Mini-Mental State Examination

Scale 0-30

Score > 22: cognitively intact

If a person was too weak to participate, a proxy was asked to assist
Physical and cognitive functioning
Estimated as
Physical independence without cognitive impairment
Interview plan

Intake survey in 1998.

Follow-up interviews in 2000

2003

2005

Register follow-up with respect to death 31 December 2005
Lifetime according to health status among the oldest-old in Denmark

To validate the influence of missing values the results were recalculated after replacing missing values for a person by the best and worst reported health state at the other interviews with that person.
Also the robustness of the assumptions about health state after the last interview were evaluated by recalculation after it was assumed that all persons who were interviewed more than 6 months before the end of follow-up or death had the worst health status during the last 6 months of their life.
Results
The Danish 1905 cohort

3600 alive in 1998

2259 (62.8%) participated
at the first interview 1998 (age 92-93)

199 (8.8%) were still alive
on 1 January 2006 (age 100)
Average lifetime in self-rated good, fair and poor health between ages 92 and 100 for Danes born in 1905 and followed up until 2006

- **Self-rated good health**
  - Men: 1.33 years
  - Women: 1.55 years

- **Self-rated fair health**
  - Men: 0.85 years
  - Women: 0.94 years

- **Self-rated poor health**
  - Men: 0.34 years
  - Women: 0.40 years

- **Inestimable self-rated health**
  - Men: 0.18 years
  - Women: 0.41 years

*Estimated by replacing missing values for a person by the best and worst reported health at the other interviews for that person.*

Average lifetime in self-rated good, fair and poor health between ages 92 and 100 for Danes born in 1905 and followed up until 2006

* Estimated by replacing missing values for a person by the worst reported health at the other interviews for that person.
Average lifetime in self-rated good, fair and poor health between ages 92 and 100 for Danes born in 1905 and followed up until 2006

* Estimated by replacing missing values for a person by the best and worst reported health at the other interviews for that person.
Average lifetime in physical independence and dependence between ages 92 and 100 for Danes born in 1905 and followed up until 2006.

For Men:
- Average physically independent lifetime: 2.01 years
- Average physically dependent lifetime: 2.70 years

For Women:
- Average physically independent lifetime: 2.37 years
- Average physically dependent lifetime: 3.31 years

*Estimated by replacing missing values for a person by the best and worst reported health at the other interviews for that person.*

Average lifetime in physical independence and dependence between ages 92 and 100 for Danes born in 1905 and followed up until 2006

* Estimated by replacing missing values for a person by the worst reported health at the other interviews for that person.
Average lifetime in physical independence and dependence between ages 92 and 100 for Danes born in 1905 and followed up until 2006

Average physically independent lifetime

Average physically dependent lifetime

* Estimated by replacing missing values for a person by the best and worst reported health at the other interviews for that person.
Average lifetime by physical and cognitive functioning between ages 92 and 100 for Danes born in 1905 and followed up until 2006

<table>
<thead>
<tr>
<th>Physical and Cognitive Functioning</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>No cognitive impairment</td>
<td>2.70</td>
<td>3.31</td>
</tr>
<tr>
<td>Average lifetime with physical dependence and/or mild or severe cognitive impairment</td>
<td>1.57</td>
<td>2.16</td>
</tr>
<tr>
<td>Average physically independent lifetime with no cognitive impairment</td>
<td>1.13</td>
<td>1.13</td>
</tr>
</tbody>
</table>

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Average lifetime by physical and cognitive functioning between ages 92 and 100 for Danes born in 1905 and followed up until 2006

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Average lifetime by physical and cognitive functioning between ages 92 and 100 for Danes born in 1905 and followed up until 2006

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Conclusion

The average lifetime between ages 92 and 100 was about 3 years, of which

- 50% in self-rated good health
- 75% in a state of physical independence
- 33% (at least) in a state of physical independence without cognitive impairment
Healthy ageing?    Happy ending!

Thank you!