SUCCESSFUL AGEING AND LONGEVITY AMONG AUSTRALIAN WOMEN

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Director
Australian Longitudinal Study on Women’s Health

With thanks to
Mijanur Raman (statistics)
Jenny Helman and Meredith Tavener (Interviews and Qualitative Analyses)
Australian Longitudinal Study on Women’s Health

Funded by the Australian Department of Health in 1995:
To examine social, psychological, physical and environmental factors which determine good health, and those which cause ill-health, in women throughout adult life

- physical and mental health, symptoms, diagnoses
- health service use, access and satisfaction
- health related behaviours
- social factors related to health and well-being

- To contribute to development of policy and practice in key areas for women’s health
  - National Health Priority Areas
  - Health Targets e.g. Continence, Quality Use of Medicines, National Tobacco Strategy, Obesity Taskforce, Framework for Physical Activity, Mental Health, Abuse, Dementia, End of Life ...
Australian Longitudinal Study on Women’s Health
Four cohorts, over 57,000 women

1989-95
18-23 in 2013
Now 22-27
Recruited through Social networking

1973-78
18-23 in 1996
now 39-44
Recruited through Medicare

1946-51
45-50 in 1996
now 66-71

1921-26
70-75 1996
now 92-97
1921-26: 3 yearly Postal Surveys 1996-2011 ... 6 monthly

70-75 ....... 85-90 ........ 90+

**Conditions/ symptoms/ procedures, Health Care Use**, medications, health insurance, **SF-36 quality of life**, depression/anxiety, smoking, alcohol, BMI, physical activity, diet, sleep, life events, marital status, living arrangements, housing, abuse, manage on income, caring, support, optimism ...

.. continence, memory, falls, teeth, services, transport, ADLs, housing, volunteering, age discrimination, social activities

Linked to: MBS, PBS, Hospital, Aged Care, Cancer, Death Data

Surveys and data books www.alswh.org.au
Have we missed anything?

- Free text comments
- Qualitative data – allows us to get a sense of how women cope with their everyday, as they age and in relation to life events
  - Eg. Kennaugh R, Byles J, Tavener M. Beyond widowhood: Do prior discovered themes that describe the experiences of older Australian widowed women persist over time? Women and Health, 2016; 56(7): 827-42.
- 56% of the women
- 1,239,859 words
- women who wrote tended to have lower physical function, poorer general health and lower social function than women who did not write- except for women > 82-87, where there were no differences.
- Wide range of experiences
- Consistent narrative

Interviews with women aged 92-97
Three Cohorts, over 40,000 women,
Three generations of women’s health

Australian Longitudinal Study on Women’s Health, 1996

1973-78
1946-51
1921-26
18-23
45-50
70-75
14247
13716
12432
Four Cohorts, over 58,000 women,
Four generations of women’s health
By 2011:
17% diabetes
70% arthritis
17% asthma
40% heart disease
70% hypertension
12% stroke

Byles et al. Chronic conditions, physical function and health care use. June 2015
www.alswh.org.au

29% dementia
Waller et al. 2017)
Changes in Physical Function
Surveys 1-6 +6MF

1921-26 cohort:
Are these women ageing well?
Successful Ageing?
Healthy Ageing?

Figure 3-10 Mean physical functioning score from Survey 1 to Six Monthly Follow-Up Survey 4

<table>
<thead>
<tr>
<th>Survey</th>
<th>Year</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1996</td>
<td>70-75y</td>
</tr>
<tr>
<td>2</td>
<td>1999</td>
<td>73-78y</td>
</tr>
<tr>
<td>3</td>
<td>2002</td>
<td>76-81y</td>
</tr>
<tr>
<td>4</td>
<td>2005</td>
<td>79-84y</td>
</tr>
<tr>
<td>5</td>
<td>2008</td>
<td>81-87y</td>
</tr>
<tr>
<td>6</td>
<td>2011</td>
<td>85-90y</td>
</tr>
<tr>
<td>FU</td>
<td>2013</td>
<td>85-92y</td>
</tr>
</tbody>
</table>
SUCCESSFUL AGEING

Engaged with life

No major disease

No major disability

High cognitive function

## Conditions reported by women at Survey 1 (age 70-75)

<table>
<thead>
<tr>
<th>Chronic conditions (Overall %)</th>
<th>Arthritis</th>
<th>Diabetes</th>
<th>Heart disease</th>
<th>Hypertension</th>
<th>Stroke</th>
<th>Thrombosis</th>
<th>Low iron</th>
<th>Asthma</th>
<th>Bronchitis</th>
<th>Osteoporosis</th>
<th>Skin cancer</th>
<th>Other cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis (39%)</td>
<td>5</td>
<td>10</td>
<td>21</td>
<td>53</td>
<td>7</td>
<td>12</td>
<td>18</td>
<td>16</td>
<td>22</td>
<td>29</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Diabetes (9%)</td>
<td>44</td>
<td>1</td>
<td>34</td>
<td>65</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>15</td>
<td>18</td>
<td>18</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Heart disease (7%)</td>
<td>49</td>
<td>18</td>
<td>1</td>
<td>61</td>
<td>13</td>
<td>16</td>
<td>19</td>
<td>17</td>
<td>23</td>
<td>26</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>Hypertension (48%)</td>
<td>43</td>
<td>12</td>
<td>22</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>15</td>
<td>14</td>
<td>18</td>
<td>21</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Stroke (6%)</td>
<td>47</td>
<td>18</td>
<td>41</td>
<td>69</td>
<td>0</td>
<td>22</td>
<td>20</td>
<td>15</td>
<td>22</td>
<td>27</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>Thrombosis (9%)</td>
<td>53</td>
<td>14</td>
<td>31</td>
<td>56</td>
<td>0</td>
<td>27</td>
<td>19</td>
<td>27</td>
<td>30</td>
<td>32</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Low iron (15%)</td>
<td>49</td>
<td>9</td>
<td>22</td>
<td>47</td>
<td>7</td>
<td>16</td>
<td>17</td>
<td>27</td>
<td>29</td>
<td>31</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Asthma (13%)</td>
<td>49</td>
<td>11</td>
<td>23</td>
<td>52</td>
<td>6</td>
<td>12</td>
<td>20</td>
<td>1</td>
<td>48</td>
<td>27</td>
<td>28</td>
<td>11</td>
</tr>
<tr>
<td>Bronchitis (17%)</td>
<td>49</td>
<td>10</td>
<td>23</td>
<td>50</td>
<td>14</td>
<td>23</td>
<td>36</td>
<td>1</td>
<td>28</td>
<td>31</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Osteoporosis (20%)</td>
<td>57</td>
<td>8</td>
<td>22</td>
<td>50</td>
<td>7</td>
<td>13</td>
<td>22</td>
<td>18</td>
<td>24</td>
<td>24</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Skin cancer (25%)</td>
<td>42</td>
<td>8</td>
<td>18</td>
<td>49</td>
<td>7</td>
<td>11</td>
<td>15</td>
<td>15</td>
<td>21</td>
<td>24</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other cancer (9%)</td>
<td>41</td>
<td>10</td>
<td>20</td>
<td>46</td>
<td>7</td>
<td>14</td>
<td>18</td>
<td>17</td>
<td>23</td>
<td>21</td>
<td>32</td>
<td>1</td>
</tr>
</tbody>
</table>
SUCCESSFUL AGEING


Arthritis
Heart Disease
Stroke
Diabetes
Asthma
Cancer

SF-36 physical function scores <40 (difficulty walking 500 m, climbing stairs, moderate activity)

Need for help with daily tasks

No major disease
No major disability
Engaged with life
High cognitive function
Disease, disability, need help with daily tasks
Survey 2 (n=10434 women)
SUCCESSFUL AGEING

1921-26 cohort
12432 women

Arthritis (S2)
Heart Disease
Stroke
Diabetes
Asthma
Cancer

SUCCESSFUL AGEING

1921-26 cohort
12432 women

Arthritis (S2)
Heart Disease
Stroke
Diabetes
Asthma
Cancer (not skin)

SUCCESSFUL AGEING

73-78
1999

No major
disease

No major
disability

Engaged
with life

SUCCESSFUL AGEING

Deceased 65%

No Survey 22% (62%)

8% (23%)

3% (9%)

2% (6%)

Australi an Longitudinal Study on Women’s Health

90-95
SUCCESSFUL AGEING: LCA


Arthritis (S2)
Heart Disease
Stroke
Diabetes
Asthma
Cancer (not skin)

No major disease
Engaged with life
No major disability

Early mortality 26% (by 2008, 82-87)
Usual agers 26%
Disease/disability
High mortality rate after 82-87

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Early mortality 26% (by 2008, 82-87)
Usual agers 26%
Disease/disability
High mortality rate after 82-87

Missing surveys 19%
Usual agers 15%
Disease/disability
Low mortality rate (up to 90-95)

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Usual agers 15%
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Usual agers 15%
Disease/disability
Low mortality rate (up to 90-95)

Managed agers 9%
Disease
Low mortality rate

Managed agers 9%
Disease
Low mortality rate

Managed agers 9%
Disease
Low mortality rate

Managed agers 9%
Disease
Low mortality rate

Successful agers 6%
No Disease
Low mortality rate

Successful agers 6%
No Disease
Low mortality rate

Successful agers 6%
No Disease
Low mortality rate

Successful agers 6%
No Disease
Low mortality rate
Healthy Ageing

“building and maintaining for as long as possible of the functional ability that enables older people to be and to do the things they have reason to value”

WORLD REPORT ON AGEING AND HEALTH

Fig. 2.2. Three hypothetical trajectories of physical capacity

A. Optimal trajectory, intrinsic capacity remains high until the end of life.
B. Interrupted trajectory, an event causes a decrease in capacity with some recovery.
C. Declining trajectory, capacity declines steadily until death.

The dashed lines represent alternative trajectories.
Two different approaches to analysing data show how women in the 1921-26 cohort are ageing well. Dr Lucy Leigh analysed survey responses to see how older women's physical abilities changed between the ages of 73-78 and 85-90. Overall, the proportion of women who needed help with daily tasks increased from 9% to 34%. Even so, many of these women continued to provide care for someone else's health needs into their late 80s and early 90s. As women aged they fell into one of four groups (see simplified graph below):

- **Group 1** (14% of women) – Maintained high levels of physical function.
- **Group 2** (30%) – Started high and declined over time. However, even in their late 80s, they were still able to do most daily activities and get around.
- **Group 3** (40%) – Started at a lower level. Their abilities declined to a point where the majority had difficulty with most activities.
- **Group 4** (16%) – Started with poor physical function which further declined to a point where they had difficulty dressing, bathing and moving around within the home.

To understand how women adjust to changes in their later years, Dr Robyn Kennaugh studied comments they wrote on surveys. Women described many challenges, including caring for their husband or other relatives, the loss of their spouse, and changes to their health. While caring for their partner was physically and emotionally difficult, the subsequent loss was a significant source of stress in a woman's life. However, the women also described resources that helped them meet these challenges, including inner strength, and the support of others.

Women wrote how they derived help, not just from families and friends, but also from peers, doctors, health services, and community organisations. They described the importance of a positive disposition to help live with their loss. They wrote that they took initiative to 'do for themselves' what no one else could. These positive responses help women reorient to a new stage of life, and continue to engage in meaningful activities and experience wellbeing.

**Baseline factors associated with**

**POOR Physical Function (Odds Ratio)**

**DISEASE**
- Arthritis (OR 11.1),
- Stroke (OR 4.4),
- Osteoporosis (OR 4.3),
- Heart Disease (OR 4.9),
- Diabetes (OR 3.5),
- Hypertension (OR 3.2),
- Bronchitis/emphysema (OR 2.4)
- Asthma (OR 2.0).

**COMORBIDITY** OR ~ 3.0

Leigh, Byles, Mishra 2016
Patterns of change in physical function
(n= 5928 surviving women)

14%
33%
38%
15%

Two different approaches to analysing data show how women in the 1921-26 cohort are ageing well.

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SALUTOGENSEIS:
Creating health and ageing well

The process of gathering one's resources to create health in the face of adversity is known as salutogenesis, and women in the 1921-26 cohort demonstrate this phenomenon in abundance.

The women had less success adapting to changing social circumstances, including managing finance, accessing transport and finding suitable housing. These are areas where women may need to 'lean on others' more, and where health providers and support networks need to be aware of the need for balance between offering support and allowing women to preserve their independence in later life.

Baseline factors associated with POOR Physical Function (Odds Ratio)

EDUCATION
- Higher education (OR 0.38)
  62% less likely to have poor PF

EXERCISE
- Highest PA class (OR 0.04)
  96% less likely to have poor PF
- Low PA class (OR 0.19)
  81% less likely to have poor PF (OR 0.19)

BMI
- Overweight (OR 5.02)
- Obese (OR 26.2)

SMOKING
- Current smoker (OR 2.9)

Leigh, Byles, Mishra 2016
Engagement with life to do the things they have reason to value

Engaged with life

No major disease

No major disability

Interviews with women aged 92-97 – 18 to date

Funded by: Australian Research Council
<table>
<thead>
<tr>
<th>How would you rate your health?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health – not without physical problems</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Injuries – brought on by their own activities</td>
<td>Longstanding health problems.</td>
</tr>
<tr>
<td>Setbacks- likely to improve.</td>
<td>More pessimistic about getting over events and illnesses.</td>
</tr>
<tr>
<td>Conditions described as minor (even if not)</td>
<td></td>
</tr>
<tr>
<td>Positive outcomes of health care</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitality – Active and fit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some slowing down with ageing.</td>
<td>Slow down “everything is gradually wearing out” (s3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation _Active</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dancing, gardening, volunteer work</td>
<td>reading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Life satisfaction and Identity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Generally satisfied with life.</td>
<td>Content</td>
</tr>
<tr>
<td>Belief in themselves and proud of achievements whether maternal, domestic or professional</td>
<td>“Pathetic”</td>
</tr>
<tr>
<td></td>
<td>Not bored.</td>
</tr>
<tr>
<td>Good Health</td>
<td>Poor Health</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td><strong>Health Care – Active and involved</strong></td>
<td><strong>Less active</strong></td>
</tr>
<tr>
<td>Generally satisfied with health care</td>
<td>Difficulty accessing health care.</td>
</tr>
<tr>
<td>Trust doctors, health care systems, and therapies.</td>
<td>Difficulty affording health care.</td>
</tr>
<tr>
<td>Some concern with access to health care.</td>
<td>Mistrust.</td>
</tr>
<tr>
<td>Some: “seek natural therapies”</td>
<td></td>
</tr>
<tr>
<td><strong>Mobility and physical function – Can do</strong></td>
<td><strong>Can’t do</strong></td>
</tr>
<tr>
<td>Adapt to increasing difficulties and limitations to physical function.</td>
<td>Describe what they can’t do (rather than what they can do or hope to do)</td>
</tr>
<tr>
<td>Generally still able to drive</td>
<td>Talked about not being able to drive</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
</tr>
<tr>
<td>Positive relationships, supportive family, good friends</td>
<td>Negative as well as positive relationships</td>
</tr>
<tr>
<td>May be caring for husband</td>
<td>Difficulty maintaining relationships</td>
</tr>
<tr>
<td></td>
<td>Carer burden / Loss of spouse.</td>
</tr>
<tr>
<td><strong>Optimistic</strong></td>
<td><strong>Less optimistic</strong></td>
</tr>
<tr>
<td>Internal locus of control “I keep well”</td>
<td>“I hope I will not be around for the next survey. I have no desire to stay alive when I can no longer function independently” (s3)</td>
</tr>
<tr>
<td>“I don’t sit and wait for things to happen”</td>
<td></td>
</tr>
<tr>
<td>“you reap what you sew”</td>
<td></td>
</tr>
<tr>
<td>“hope” “grateful” “Lucky” “Fortunate”</td>
<td></td>
</tr>
</tbody>
</table>
Engagement with life (surveys)

**FEW DISEASES, GOOD HEALTH, GOOD PF**

Survey 4 (79-84): I still manage to go on bus tours, … over the last 14 years I have seen a fair portion of Australia doing bus tours.

(88-93): I have just come home from a 9 day road trip to Alice Springs and surrounds with family a lovely time, I feel a bit tired and have developed a cold - otherwise very grateful that I can still do these things.

**FEW DISEASES, POOR HEALTH, POOR PF**

(91-96): I am healthy but cannot walk without help. This stops me from doing a lot of activity I have lots of friends & family so get help. A lot to be thankful for

**MANY DISEASES, GOOD HEALTH, GOOD PF**

Survey 2 (73-78): I feel I am genuinely lucky with my health and my life. I play bridge three or four days a week and love my weekly golf day. I have a wide circle of very good friends and have a very busy life. I feel very blessed!!

(89-94): I have a very supportive family who regularly keep in touch. My daughter-in-law is a wonderful friend. .. I feel very lucky I can still have a busy social life playing bridge.

(91-96): I have not been well this year. ….. I now have carers coming morning & night to help me. So I am in very good hands, as well as wonderful family support.
Engagement with life (Surveys)

MANY DISEASES, POOR HEALTH, POOR PF

ANGINA, DIABETES, DIVERTICULITIS, ARTHRITIS, HYPERTENSION, OSTEOPOROSIS, HIP FRACTURE, SCIATICA

(88-93): I'm sure my health is mainly due to old age. My memory is excellent & I'm am able to knit for the local op shop which I enjoy. I'm lonely at times but prefer my own home. I love company but not all day, I find talking all day very tiring. Don't see family as much as I would like But they are all working & busy which I understand. We all get on well together. I am 91 years old and had a good life.

(89-94): I am suffering from a painful condition with my jaw bone, result of taking a tablet once a week which specialists tell me can't be treated. Extremely painful. Tablet apparently inhibits jaw bone healing. Don't know why I had to reach 92 to have this.

(87-92): I'm still here.

(88-93): A year older - I can feel the downhill pull now - and am content - I have lived a long life and many operations. One thing I have found out, is that it is up to myself how I live. I can be happy, I can be miserable. It's all up to me. I choose happy! I hope I have been helpful.
Interviews to date (age 92-97):

- Most “pretty well” or fantastic
- But .. (cancer, blindness, mobility problems)
- Everything is an effort
- Frustrated can’t do things
- “I like being here”
- I’ve got my marbles
- Lonely
- Will anyone come to our funerals

- Lucky, lucky, lucky – good genes
- Still driving
- Travel (past)
- Roles
- Housework with help
- Puzzles, social outings, gardening, cooking, quilting, snooker, reading, TV, computer
- Pets
- Family – important but often distant

I am still here. I get up, I think, I reason, I move about. I feel like I am on holiday. I can please myself.
Conclusion

• Successful ageing is a tall order, most will not achieve it
• Longevity is its own success
• Healthy ageing allows for age-associated changes, for management of conditions, and to support people to do the things that give life meaning

The women talk of enjoyment and quality of life, and engagement, in spite of conditions and disabilities:
This should be the goal of healthy ageing.

• Help with, not doing for
• Loneliness, social interaction, participation
• Transport
• Hobbies
• Gardening
• Pets
• Family – particularly children
Thank you

ALSWH is conducted by staff at the University of Newcastle and the University of Queensland. We are grateful to the Australian Government Department of Health for funding and to the women who provided the survey data.

We acknowledge:

- Department of Health and Medicare Australia for providing the PBS and MBS data, and the Aged Care Data.
- Australian Institute of Health and Welfare (AIHW) as the integrating authority for these data.
- assistance of the Data Linkage Unit at the Australian Institute of Health and Welfare (AIHW) for undertaking the data linkage to the National Death Index (NDI).
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