Australian Longitudinal Study on Women’s Health

1946-51 COHORT

SUMMARY 1996 – 2016

October 2017
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1 EXECUTIVE SUMMARY

The Australian Longitudinal Study on Women’s Health (ALSWH) is a longitudinal population-based survey of over 58,000 Australian women in four cohorts. This report is a summary of data for women in the cohort born 1946-51 who completed the baseline survey in 1996 (aged 45-50 years) and every follow-up survey up to Survey 8 in 2016 (aged 65-70).

Sociodemographic characteristics: Over the past 20 years of the study, the majority (over 80%) of women have resided in cities or inner regional areas, with around 20-25% living in outer regional or remote/very remote areas. At Survey 8, 74% of the women were married or living in a de facto relationship, down from 85% at Survey 1. The proportion who were separated or divorced increased little over time, but the proportion widowed increased to around 10% by Survey 8. Over time there has been a small increase in the proportion caring for others with an illness or disability who lives with them, to 9% at Survey 8, and a decrease in the proportion caring for someone who lives elsewhere (16%). Around one in four women had some role as a carer.

At Survey 1 in 1996, when they were aged 45-50, almost 80% of the women were employed in the labour force with almost 40% of them in part time work. By Survey 8 in 2016, when they were age 65 to 70, 30% of the women were in paid employment, with 22% working part time and 8% full time. Almost half of the employed women were in managerial or professional occupations. At Survey 4 (aged 53-58) almost 60% of the women classified themselves as not retired. This proportion declined over time so that by Survey 8, 10% reported that they were not retired and 73% were fully retired. Across the 20 years of the survey, most women found it easy or not too bad to manage on their income. At Survey 8, about 19% of the women reported it was sometimes difficult, and around 8% who consistently reported that it was always difficult or impossible. As these women are now passed the traditional retirement age of 65 years, it will be important to track their economic wellbeing and their ability to access health services in the future.

Lifestyle: At Survey 1, most of the women were in the healthy weight categories for Body Mass Index. The women’s weight increased over time (by an average of 5kg over the 20 years) so that by the time the women were aged 65-70 the majority (63%) were in the overweight or obese range. On each of the eight surveys, most women reported being moderately or highly physically active. However, at least 35% of the women recorded low levels of activity or were inactive at each survey. Across all surveys, the majority of women were either non-drinkers or low-risk drinkers, and almost 60% of the women were never smokers.

Mental health: Self-reported symptoms of depression (CES-D10 scores) declined over time, which could be an indicator of successful treatment and/or reflect a decrease in psychological distress with increasing age. Consistent with an improvement in psychological health, the women’s optimism scores increased over the 20 years of the survey, while reporting of stress decreased from Survey 1 to Survey 8. Further, the percentage of women reporting suicidal thoughts declined between Survey 3 and Survey 8.

Running counter to this pattern, however, diagnosis of depression increased from Survey 2 (8.5%) to Survey 4 (12%) and then stabilised. The percentage of women who reported a diagnosis of anxiety also increased over time from a low of 6% at Survey 3, to 10% by Survey 8.

Physical health and chronic conditions: At Survey 1, (aged 45-50 years), 55% of women rated their own health as excellent or very good, and by Survey 8 (aged 65-70 years), this had declined somewhat to 49%. However, the percentage of women who rated their health as fair or poor increased from 5% to 12% over the same period. The percentage of women reporting chronic conditions (hypertension, diabetes, heart disease, stroke, asthma, arthritis, breast cancer) increased over time. For example, 20% of women reported hypertension at Survey 1 and by Survey 8, this had increased to almost 50%. Similarly the percentage of women diagnosed with diabetes rose progressively from under 2.5% at Survey 1 to almost 14% at Survey 8.
Health services use: At Survey 1, almost 80% of the women reported consulting a General Practice (GP) less than five times in the previous 12 months. Over time, and consistent with the rising prevalence of a range of health conditions, the number of GP consultations increased so that by age 65-70, 16% of the women consulted their GP seven or more times a year. Similarly, at Survey 1, 15% of the women were admitted to a hospital in the previous 12 months and this percentage steadily increased over time, so that by Survey 8, almost 28% of the women reported a hospital admission in the past 12 months. The majority of women rated their access to hospitals as very good or excellent.

Access to a bulk billing GP was rated as good to excellent by 65% of the women at Survey 2 (age 47-52 years). By Survey 8 (age 65-70 years), 84% reported access was good to excellent. Further, most women (90%) at Survey 2 rated the cost of visits to a GP as good to excellent and this was consistent over time.

There has been a progressive improvement in women’s ratings of access to a female GP over the study period. By Survey 8, nine out of ten women rated access to a female GP as good to excellent. With increasing age, women required more consultations with a specialist medical practitioner, and by Survey 8, 20% reported three or more consultations in the previous 12 months. Access to specialists was rated as good to excellent by 92% of women at Survey 8. Access to screening tests, such as Pap tests and mammography were also rated highly, with the vast majority reporting good to excellent access.

Uptake of private insurance for hospital and ancillary services began to increase after Survey 2 in 1998, reflecting changes to government policy whereby individuals without private health insurance would have higher premiums if they choose to take out private health insurance after the age of 30. The percentage of women who had a Health Care Card increased from 18% at Survey 3 (age 50-55 years) to 61% at Survey 8, possibly reflecting transitions to retirement and an associated increase in eligibility for subsidised health services.

Potential policy implications

This study period across mid-life has seen the transition for most women from paid employment to full retirement, with concomitant health and socioeconomic implications. Yet the continuing contribution of these women is underscored by more than one in four indicating their role as carers.

Although around half of the women report having excellent or very good health even in their sixties, the progressive increase in prevalence of a range of chronic conditions, such as hypertension, arthritis and diabetes, accompanies a rising demand for health services. This demand is already evident in the rising frequency of GP visits and hospital admissions over the study period. These trends of increasing prevalence in chronic conditions and associated health services use are likely to continue to increase as the cohort ages. Further, this may result in an increased divergence in the availability of health care provision for women with private healthcare and those relying on public services, and for those in regional and rural areas where health care may be harder to access. In contrast, the demand for mental health services for this cohort appears likely to have stabilised.

Of specific concern, and distinct from older age groups of Australian women, is the high prevalence of overweight or obesity in this cohort, with established increased risks for a range of adverse health outcomes including Type 2 diabetes, arthritis and cardiovascular diseases. Even though women currently report favourably on access to health services, such as GPs, it suggests further measures for preventive health interventions, early diagnosis and ongoing management may be essential in reducing the likely additional health services demands and poor health outcomes.

As noted above a sizable percentage of the women are carers. This role is associated with an increased risk of poorer mental health, poorer social support and higher stress levels and reduced participation in the work force. Further understanding how these carer roles fit into women’s lives and impact on health as women age is needed, as this will have important implications for policy development both to support these women and those under their care.
2 INTRODUCTION AND BACKGROUND

The Australian Longitudinal Study on Women’s Health (ALSWH) is a longitudinal population-based survey examining the health of over 58,000 Australian women. ALSWH follows women in four age cohorts, and a summary of the cohort born 1946-51 (aged 64 to 69 in 2015), who were first surveyed aged 45 to 50 in 1996, is presented here.

The 1946-51 cohort was recruited from the name and address database of the Australian Health Insurance Commission (now Medicare Australia). Sampling was random, except that women living in rural and remote areas were sampled at twice the rate of women in urban areas, in order to capture the heterogeneity of health experiences of women living outside metropolitan areas. All results given in this report have been weighted to account for the over-sampling of women in rural and remote areas. The cohort has been surveyed eight times and details of survey dates and response rates are shown in Table 2-1. Surveys 1 – 6 were offered as paper surveys, and were mailed to participants. ALSWH started to offer online surveys to participants in 2011, so from Survey 7 onwards participants in the 1946-51 cohort have also been offered the option of completing the survey online.

Table 2-1 ALSWH 1946-51 cohort - schedule of surveys and number of respondents from 1996 to 2016

<table>
<thead>
<tr>
<th>Survey</th>
<th>Year</th>
<th>Age of women in the cohort</th>
<th>Number of completed surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1996</td>
<td>45-50</td>
<td>13,715</td>
</tr>
<tr>
<td>2</td>
<td>1998</td>
<td>47-52</td>
<td>12,338</td>
</tr>
<tr>
<td>3</td>
<td>2001</td>
<td>50-55</td>
<td>11,226</td>
</tr>
<tr>
<td>4</td>
<td>2004</td>
<td>53-58</td>
<td>10,905</td>
</tr>
<tr>
<td>5</td>
<td>2007</td>
<td>56-61</td>
<td>10,638</td>
</tr>
<tr>
<td>6</td>
<td>2010</td>
<td>59-64</td>
<td>10,011</td>
</tr>
<tr>
<td>7</td>
<td>2013</td>
<td>62-67</td>
<td>9,151</td>
</tr>
<tr>
<td>8</td>
<td>2016</td>
<td>65-70</td>
<td>8,186</td>
</tr>
</tbody>
</table>

The eight surveys of the cohort have covered the main issues affecting the health of women at mid-life in contemporary Australian society. Questions have been chosen which reflect national health and social policy concerns, as well as to add to knowledge of women’s well-being during this stage of the life-span. Topics have included:

- Sociodemographic factors (area of residence, employment and retirement, living arrangements, household income)
- Health behaviours and risk factors (such as diet, physical activity and smoking)
- Mental health (including stress, depression and anxiety)
- General physical health (including health related quality of life, conditions, symptoms)
- Reproductive health (including menopause)
- Use of, and ease of access to, health services (GPs, specialists, hospitals, medications)
- Time use (including paid and unpaid work, leisure, caregiving)
- Interpersonal violence
- Retirement planning
- Caring

Standard validated questions from Australian and overseas sources have been used in the surveys, to allow findings to be compared directly with information from other studies.
3 COHORT TRAJECTORIES 1996 – 2016

Trajectories show the cohort’s responses to questions asked on surveys during the period 1996 to 2016. For each trajectory, an example survey question has been included – however it is important to note that questions have sometimes changed from survey to survey, and the example question is intended as a guide only. Additionally, each trajectory includes data only from participants who answered the question at every survey shown in the trajectory – for example, in the trajectory for occupational category (Figure 3-1), only participants who answered the relevant occupation questions at Survey 3, Survey 4, Survey 5, Survey 6 and Survey 8 have been included. In order to depict the change over time, participants were omitted if their responses to the relevant questions were missing at any of the surveys. Complete data for every survey, including questions and responses, are available in the ALSWH databooks.

3.1 Sociodemographic factors

3.1.1 Area of residence

Area of residence is determined from the latitudes and longitudes of participants’ residential addresses, which are linked with geographical information (geocoded). In those few cases where address information is unreliable, postcode information gathered in the survey is used.

QUESTION: What is your (current) postcode?

![Figure 3-1 Participant area of residence at time of survey from Survey 1 to Survey 8 (N=6,819).](image)

The percentages of women living in different area of residence categories remained fairly stable from the baseline survey, when women were aged 45 to 50 years, through to 2016 (65 to 70 years). At Survey 8, slightly less than 80% of women lived in major cities or inner regional areas and about 20% lived in outer regional or remote/very remote
areas. The percentage living in remote/very remote area declined from 4.6% when women were aged 47 to 52 years (Survey 2) to 2.1% when they were 65 to 70 years old (Survey 8).

### 3.1.2 Employment /Occupation

**QUESTION:** In the LAST WEEK, how much time in total did you spend doing the following things? Full time paid work; Permanent part-time paid work; Casual paid work; Work without pay (e.g. family business).

- 1-15 hours
- 16-24 hours
- 25-34 hours
- 35-40 hours
- 41-48 hours
- 49 hours or more

**QUESTION:** Are you currently unemployed and actively seeking work?

- No
- Yes, unemployed for less than 6 months
- Yes, unemployed for 6 months or more

Participation in labour force is calculated from responses to each question.

![Figure 3-2 Participation in labour force (N= 6,671).](image)

At Survey 1 when the women were aged 45 to 50, almost 80% were employed in the labour force. Over time, the number of women who continued to be in the labour force declined so that by Survey 8, when the women were aged 65 to 70, less than a third of the women remained in paid work outside their home. Across all of the surveys, very few women reported being unemployed (i.e. not employed and actively seeking paid work).
Between Survey 1 and Survey 8, the number of women who continued full time participation in the labour force declined. By Survey 8, more than two thirds of the women were either retired and not in the labour force or were unemployed. Nonetheless, about 7% continued full time work and about 22% worked part time. The largest change in hours worked over the 20 year period was in the full time category.

Figure 3-3 Participation in labour force by hours worked per week (N= 5,799).

Between Survey 1 and Survey 8, the number of women who continued full time participation in the labour force declined. By Survey 8, more than two thirds of the women were either retired and not in the labour force or were unemployed. Nonetheless, about 7% continued full time work and about 22% worked part time. The largest change in hours worked over the 20 year period was in the full time category.
QUESTION: What is your main occupation?

Figure 3-4 Occupation category from Survey 3 to Survey 8 (N=5,278).

Note: Occupation questions asked on Surveys 1 and 2 are not comparable with those asked on subsequent surveys, and have not been included.

At Survey 3, managerial or professional roles were the most common occupations (40%), followed by semi-skilled occupations (25%), unskilled work (10%) and 25% of women were not in the labour force. Over time, the number of women who were employed decreased, however, of the occupational categories managerial or professional roles remained the most common, followed by semi-skilled then unskilled occupations.
QUESTION: Do you consider yourself to be completely retired from the workforce, partly retired, or not at all? (Mark one only)

- I am not retired at all
- I am partially retired
- I am completely retired from paid work (within the last 20 years)
- I gave up paid work over 20 years ago
- I have never been in paid work.

This question has been asked in Surveys 4 to 8.

Figure 3-5 Retirement status from Survey 4 to Survey 8 (N=6,842).
Almost 60% of the women classified themselves as ‘not-retired’ at Survey 4, when they were aged 53 to 58 years and this proportion declined over subsequent surveys. By Survey 8, when they were aged 65 to 70 years, only 10% of women reported that they were not retired, and 73% reported they were fully retired.
3.1.3 Ability to manage on income

QUESTION: How do you manage on the income you have available?

- It is impossible
- Difficult all the time
- Difficult some of the time
- Not too bad
- It is easy

Figure 3-6 Ability to manage on income from Survey 1 to Survey 8 (N=6,567).

The majority of women found it ‘easy’ or ‘not too bad’ to manage on their income through the study, and this proportion increased. By Survey 8 about 19% of the women reported that managing on income was “difficult sometimes”, and around 8% consistently reporting that it was “difficult always” or “impossible” to manage on their income.
3.1.4 Marital Status/Living arrangements

QUESTION: What is your present (formal registered) marital status? *(At Survey 2, De Facto (opposite sex) and De Facto (same sex) were replaced by the single option: De Facto).

- Married
- De Facto (opposite sex)*
- De Facto (same sex)*
- Separated
- Divorced
- Widowed
- Never married

*Note: The sex of the de facto partner was asked at some but not all surveys. For this Cohort Summary, de facto is reported as a single category.

Figure 3-7 Marital status from Survey 1 to Survey 8 (N=6,709).

At age 45 to 50 years, over 85% of women were married or living in a de facto relationship. By the time they were aged 65 to 70 years, this figure had decreased to about 74%, with an increasing percentage from Survey 1 who were separated or divorced (14%) or widowed (10%).
3.1.5 Caring

QUESTION: Do you regularly provide (unpaid) care for grandchildren or other people’s children? (Not asked in Survey 1).

Figure 3-8 Women providing unpaid care for grandchildren or other children (N= 6,640).

At Survey 2, when the women were aged 47 to 52, 60% reported never regularly providing care for children. Over time however, the percentage who never provided care declined to 38% at Survey 8. At Survey 2, 35% of women provided occasional child care and about 7% provided weekly care. Over time, more women reported providing weekly and occasional care, so that by Survey 8, 16% provided weekly care and 41% provided care occasionally.
QUESTION: Do you regularly provide care or assistance (e.g. personal care, transport) to any other person because of their long-term illness, disability or frailty?

- Yes, for someone who lives with me
- Yes, for someone who lives elsewhere
- No

Figure 3-9 Women providing care or assistance for someone who lives with them (N=5,753) and for someone who does not live with them (N=5402).

Note: At Survey 1, the question on caring did not separate responses by where the care recipient lived and are not included in these two graphs.

Increasingly, women reported caring for someone living with them. By Survey 8, when the women were 65 to 70 years, 9% had caring responsibilities within their home – an increase of around 3% from Surveys 2 and 3, when women were aged 47 to 55 years.

At Survey 2, 22% of women reported caring for someone who did not live with them. This percentage decreased slightly at Survey 3, then peaked at Survey 4 (24%), thereafter gradually declining to about 16% at Survey 8. The decline in the proportion of women reporting this activity may reflect that fewer women were caring for parents (who had died).
3.2 Lifestyle

3.2.1 Weight and Body Mass Index (BMI)

QUESTION: How much do you weigh without clothes or shoes?

QUESTION: How tall are you without shoes? + QUESTION: How much do you weigh without clothes or shoes?

BMI [weight (kg)/height (m)^2] is calculated from responses to both questions

![Graph showing participant weight in kilograms from Survey 1 to Survey 8 (N=5,451).](image)

The figure shows that on average the women experienced a weight gain of 5 kilograms between Survey 1 (ages 45-50) and Survey 8 (ages 65-70).
Figure 3-11 Body Mass Index (BMI) from Survey 1 to Survey 8 (N=5,451).

At Survey 1, the majority of the women were within the underweight or healthy weight BMI categories (55%). However, by the time women were aged 50 to 55 (Survey 3), the majority were overweight or obese (55%), and this continued to increase until age 59 to 64, when the percentage overweight or obese stabilised at approximately 63%.
3.2.2 Physical Activity and Sitting Time

QUESTION: How many times did you do each type of activity last week? Only count the number of times the activity lasted for longer than 10 minutes.

- Walking briskly (for recreation or exercise, or to get from place to place)
- Moderate leisure activity (like social tennis, moderate exercise classes, recreational swimming, dancing)
- Vigorous leisure activity (that makes you breathe harder or puff and pant, like aerobics, competitive sport, vigorous cycling, running, swimming)
- Vigorous household or garden chores (that make you breathe harder or puff and pant)

QUESTION: How much time did you spend altogether on each?

Responses to these questions are used to derive a physical activity score in MET.min*/week calculated as:

\[ \text{MET.min/week} = \text{time in walking} \times 3.33 + \text{time in moderate activity} \times 3.33 + \text{time in vigorous activity} \times 6.66. \]

Categories commensurate with those used in previous national Physical Activity surveys have been assigned:

<table>
<thead>
<tr>
<th>Physical Activity Categories</th>
<th>MET minutes /week</th>
<th>Minutes of moderate activity/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil/sedentary</td>
<td>0-&lt;33.3</td>
<td>0-10</td>
</tr>
<tr>
<td>Low</td>
<td>33.3-&lt;500</td>
<td>11-150</td>
</tr>
<tr>
<td>Moderate</td>
<td>500-&lt;1000</td>
<td>151-300</td>
</tr>
<tr>
<td>High</td>
<td>&gt;= 1000</td>
<td>&gt;300</td>
</tr>
</tbody>
</table>

*MET.min is an abbreviation of the metabolic equivalent of task minutes. The metabolic equivalent of task (MET) is a physiological measure expressing the energy cost (or calories) of physical activities. One MET is the energy equivalent expended by an individual while seated at rest.
Figure 3-12 Physical Activity from Survey 2 to Survey 8 (N = 5,468).

Note: Physical activity questions asked on Survey 1 are not comparable with those asked on subsequent surveys, and have not been included.

At each survey, the majority of the women were classified as moderately or highly physically active. Between Survey 2 and Survey 8, the percentage of women whose physical activity levels were classified as high increased from 32% to almost 43%. However, at least 35% of women recorded low levels of activity or were inactive at every survey. Similar to the patterns seen for BMI, physical activity levels appear to have stabilised for women from their early sixties onwards.
QUESTION: Now think about all of the time you spend sitting during each day while at home, at work, while getting from place to place or during your spare time. How many hours in total do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television, or working at a desk or computer on a usual week/weekend day? (Not asked at Survey 1 or 2).

The percentage of women who reported sitting more than 6 hours a day varied little between Survey 3 to Survey 8. At Survey 3, when women were aged 50 to 55, about 35% reported sitting more than 6 hours a day. This rose to 40% at Survey 5 (aged 56 to 61) and then declined to about 33% at Surveys 7 and 8, when women were in their mid to late 60s.
3.2.3 Alcohol use and smoking

QUESTION: How often do you usually drink alcohol? Never, rarely, less than once a week, 1-2 days a week, 3-4 days a week, 5-6 days a week, every day.

QUESTION: On a day when you drink alcohol, how many drinks do you usually have? 1-2, 3 or 4, 5-8, 9 or more.

QUESTION: How often do you have 5 or more drinks on one occasion? Never, less than once a month, about once a month, about once a week, more than once a week.

Alcohol consumption is calculated from responses to each question.

Figure 3-14 Alcohol consumption from Survey 1 to Survey 8 (N=6,731).

Note: This question was not asked at Survey 3. Low risk drinker includes up to 2 drinks per day and rarely drinks; Risky drinker includes 3 to 4 drinks per day and 5 or more drinks per day. Categories are based on 2002 NHMRC guidelines.

Across all surveys the majority of women were either non-drinkers or low risk drinkers, with around 6% drinking at risky levels.
QUESTION: How often do you currently smoke cigarettes, or any tobacco products?

- Daily
- At least weekly (but not daily)
- Less often than weekly
- Not at all

QUESTION: In your lifetime, would you have smoked 100 cigarettes or less? Yes/No.

Responses to each question are used to classify women as having never smoked, or being an ex-smoker, or a current smoker.

![Figure 3-15 Smoking prevalence from Survey 1 to Survey 8 (N=6,617).](image)

Across all surveys, almost 60% of the women were classified as having never smoked. The percentage who were current smokers declined over time from 15% at Survey 1 to about 6% at Survey 8, reflecting the increase in ex-smokers.
3.3 Mental Health: Depression, anxiety, optimism, suicidal ideation and stress.

3.3.1 Depression

QUESTION: In the last 3 years, have you been diagnosed or treated for depression? (Not asked at Survey 1)

Figure 3-16 Percentage of women who reported having diagnosis or treatment for depression from Survey 2 to Survey 8 (N=6,569).

Note: At Survey 2, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 3 onward they were asked if they had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).

At Survey 2, about 8.5% of the women had been diagnosed with, or treated for, depression within the past three years. This percentage increased by Survey 4 to 12%, after which it stabilised, followed by a slight non-significant decrease at Survey 8 (10%).
Centre for Epidemiologic Studies Depression Scale - 10 item version (CESD10)

QUESTION: Below is a list of how you might have felt or behaved. Please indicate how often you have felt this way DURING THE LAST WEEK. (Rarely or none of the time, less than 1 day; Some or a little of the time, 1-2 days; Occasionally or a moderate amount of the time 3-4 days; Most or all of the time, 5-7 days).

- I was bothered by things that don’t usually bother me
- I had trouble keeping my mind on what I was doing
- I felt depressed
- I felt that everything I did was an effort
- I felt hopeful about the future
- I felt fearful
- My sleep was restless
- I was happy
- I felt lonely
- I could not ‘get going’

Responses to these questions are used to derive a score ranging from 0-30 points, with higher scores indicating more depressive symptoms and a higher probability of having depression. Women with a score of 10 or more have been classified as depressed. (CESD10 was not included in Survey 1.)

Figure 3-17 Percentage of women with a CESD10 score >=10 from Survey 2 to Survey 8 (N=6,058).

While an increasing percentage of women reported a diagnosis or treatment of depression, self-reported symptoms of depression, as measured by the CESD10, declined over time from 20% at Survey 2 to about 15% at Surveys 7 and 8. This decline in scores could be an indicator of successful treatment, and/or reflect a decrease in psychological distress.
with changes in age or life stage. However, the contrasting pattern of reduced prevalence of depressive symptoms and increasing prevalence of diagnosed depression suggests that more women who are experiencing mental health problems are seeking help and being diagnosed.

### 3.3.3 Anxiety

**QUESTION:** In the last 3 years, have you been diagnosed or treated for anxiety? (Not asked at Survey 1)

![Figure 3-18 Percentage of women diagnosed with or treated for anxiety from Survey 2 to Survey 8 (N=6,569).](image)

Note: At Survey 2, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 3 onward they were asked if they had had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).

Consistent with the increasing percentage of women who were diagnosed with or treated for depression, the percentage who reported that they had been diagnosed with or treated for anxiety also increased slightly over time.
3.3.4 Optimism: Revised Life Orientation Test (LOT-R)

QUESTION: Thinking about your current approach to life, please indicate how much you think each statement describes you:

- In uncertain times, I usually expect the best
- If something can go wrong for me, it will
- I'm always optimistic about my future
- I hardly ever expect things to go my way
- I rarely count on good things happening to me
- Overall, I expect more good things to happen to me than bad

(Not asked at Surveys 1 and 2.)

Responses to these questions are added to provide a LOT-R score ranging from 0-24. Higher scores indicate a more optimistic outlook on life.

Figure 3-19 Optimism as indicated by Mean Revised Life Orientation Test (LOT-R) Scores from Survey 2 to Survey 8 (N=6,760).

Optimism is a variable that reflects the extent to which women have favourable expectations for their future and has been associated with indicators of better physical and mental health. From their early 50s to mid-60s, as indicated by the mean scores from the Revised Life Orientation Test (LOT-R), women in the cohort had increasing optimism scores.
3.3.5 Suicidal Ideation and Self-Harm

QUESTION: In the past week, have you been feeling that life isn’t worth living? (Not asked at Surveys 1 and 2.)

Figure 3-20 Percentage of women with suicidal ideation in the past week from Survey 1 to Survey 8 (N= 6,940).

Figure 3-20 reflects a decline in the percentage of women reporting suicidal thoughts from Survey 3 to Survey 8, which is consistent with the generally improving psychological health among this cohort over time. This improvement is congruent with the literature which indicates that mental health generally improves with increasing age, at least up to age 80 years.
3.3.6 Stress

QUESTION: Over the last 12 months, how stressed have you felt about the following areas of your life:

- Own health
- Health of other family members
- Work/Employment
- Living arrangements
- Study
- Money
- Relationship with parents
- Relationship with partner/spouse
- Relationship with other family members
- Relationship with children

Responses to these questions are added to provide a Perceived Stress Score ranging from 0-4. Higher scores indicate more perceived stress. Cut-offs for the scores can be categorised as 0= ‘not at all stressed’, <1 ‘somewhat stressed’, ≤2 ‘moderately stressed’, ≤3 ‘very stressed’ and ≤4 ‘extremely stressed’.

Figure 3-21 Mean stress score over the previous 12 months from Survey 1 to Survey 8 (N=6,704).

Women’s stress, measured on the Perceived Stress Scale, decreased from Survey 1 to Survey 8.
3.4 Physical health conditions

3.4.1 Self-rated health

QUESTION: In general, would you say your health is:

- Excellent
- Very good
- Good
- Fair
- Poor

![Figure 3-22 Self-rated health from Survey 1 to Survey 8 (N= 6,742).](image)

At age 45 to 50 years, 55% of women rated their health as ‘excellent’ or ‘very good’, and by 65 to 70 years this proportion had declined to about 49%. Conversely, the percentage of women with fair or poor self-rated health increased from 5% to 12% over the same period.
3.4.2 Hypertension

QUESTION: In the last three years, have you been diagnosed with or treated for high blood pressure (hypertension)?

![Figure 3-23 Percentage of women with hypertension from Survey 1 to Survey 8 (N=8,373).](image)

*Note: At Survey 1, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).*

Twenty per cent of the women reported they had ever been diagnosed with hypertension at Survey 1. However, the percentage of women diagnosed with or treated for this condition within the past three years increased at subsequent surveys. By Survey 8 in 2016, almost half of the women had reported that they had been diagnosed or treated for hypertension.
3.4.3 Diabetes

QUESTION: In the last three years, have you been diagnosed with or treated for diabetes (high blood sugar)?

![Percentage of women with diabetes from Survey 1 to Survey 8 (N=8,370).](image)

**Note:** At Survey 1, women were asked if they had 'ever' been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).

At Survey 1, less than 3% of women reported they had ever been diagnosed with diabetes. On subsequent surveys an increasing percentage of women have reported being diagnosed with or treated for diabetes in the past three years. By Survey 8, 14% of the women had reported that they had been diagnosed or treated for diabetes. Obesity is an established risk factor for the development of type 2 diabetes and the increase in diagnosed diabetes is consistent with the increasing BMI of the cohort.
3.4.4 Heart disease

QUESTION: In the last three years, have you been diagnosed with or treated for heart disease (including heart attack, angina)?

![Percentage of women with heart disease from Survey 1 to Survey 8 (N=8,469).](image)

Note: At Survey 1, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).

The percentage of women who reported heart disease increased five-fold between Survey 1 and Survey 8, from just under 2.5% to almost 13%. 

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3.4.5 Stroke

QUESTION: In the last three years, have you been diagnosed with or treated for stroke?

Figure 3-26 Percentage of women with stroke from Survey 1 to Survey 8 (N=8,537).

Note: At Survey 1, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).

The percentage of women who reported that they had been diagnosed with a stroke in the last three years increased from less than 1% at Survey 1 to more than 3% at Survey 8.
3.4.6 Asthma

QUESTION: In the last three years, have you been diagnosed with or treated for asthma?

Figure 3-27 Percentage of women with asthma from Survey 1 to Survey 8 (N=8,519).

Note: At Survey 1, women were asked if they had ‘ever’ been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated ‘in the last three years’ (i.e., since the previous survey).

At Survey 1, around 15% of the women reported they had ever been diagnosed with asthma. On each subsequent survey, increasing percentages of women have reported diagnosis or treatment of asthma in the past three years. By Survey 8, around 26% of women had reported having asthma.
3.4.7 Arthritis

QUESTION: In the past three years, have you been diagnosed or treated for: (Mark all that apply)

- Osteoarthritis
- Rheumatoid arthritis
- Other arthritis
- Osteoporosis
- None of these conditions

(‘Other arthritis’ was not included as a response option at Survey 3 or Survey 4).

Figure 3-28 Percentage of women with arthritis from Survey 3 to Survey 8 (N=8,213).

Note: This question has been included since Survey 3.

Diagnosis or treatment of arthritis was reported by 21% of women at age 50 to 55 years, increasing to 55% when the women were aged 65 to 70 years.
3.4.8  Breast cancer

QUESTION: In the last three years, have you been diagnosed with or treated for breast cancer?

Figure 3-29 Percentage of women with breast cancer from Survey 1 to Survey 8 (N=8,518).

Note: At Survey 1, women were asked if they had 'ever' been diagnosed or treated, and from Survey 2 onward they were asked if they had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).

At Survey 1, about 2% of the women reported that they had ever been diagnosed with breast cancer. Over time, the percentage of women who had ever had breast cancer increased, so that by Survey 8, just over 8% of the women reported a diagnosis of breast cancer.
3.5 Menopause

At Survey 1 in 1996, when they were aged 45 to 50, most women were pre-menopausal. Over the following 20 years, women reported menopausal symptoms, such as hot flushes and night sweats, as well as use of hormone replacement therapy. By Survey 8 in 2016, when they were aged 65 to 70, all women had either had a hysterectomy or were post-menopausal.

QUESTION: Have you had a hysterectomy?

![Graph showing percentage of women who reported having a hysterectomy from Survey 1 to Survey 8 (N=8,571).]

Figure 3-30 Percentage of women who reported having a hysterectomy, from Survey 1 to Survey 8 (N=8,571).

Just over 35% of women reported having had a hysterectomy by age 45 to 50, and this had increased to over 50% by age 65 to 70.
QUESTION: In the last 12 months, have you had hot flushes?

Response options: Never, Rarely, Sometimes, Often.

Figure 3-31 Percentage of women who reported having hot flushes from Survey 1 to Survey 8 (N=4,986).

At age 45 to 50, just under 10% of women reported often having hot flushes, with about 20% experiencing them ‘sometimes’. About 70% of women rarely or never had hot flushes. By Surveys 3 and 4, when they were ages 50 to 58, the percentage of women ‘often’ experiencing hot flushes had increased to about 25%, while those who ‘never’ or ‘rarely’ had them had decreased to about 45%. By age 62 to 67, hot flushes were reported ‘often’ by just under 10% of women (similar to Survey 1), and this percentage remained the same at Survey 8 (age 65 to 70).
QUESTION: In the last 12 months, have you had night sweats?

Response options: Never, Rarely, Sometimes, Often.

Figure 3-32 Percentage of women who reported having night sweats from Survey 1 to Survey 8 (N=4,583).

As with hot flushes, at Survey 1, under 10% of women reported ‘often’ having night sweats, with just over 15% reporting them ‘sometimes’, and over 75% ‘never’, or ‘rarely’. The percentage having night sweats ‘often’ or ‘sometimes’ then increased to peak at Surveys 3 and 4, when women were ages 50 to 58. Report of night sweats then decreased at each survey, so that by Survey 8, at age 65 to 70, just over 5% of women reported them ‘often’, about 15% sometimes, and 80% rarely or never.
QUESTION: Are you currently on hormone replacement therapy? Yes/No.

Figure 3-33 Percentage of women who reported using hormone replacement therapy from Survey 1 to Survey 8 (N=6,701).

Less than 20% of women used hormone replacement therapy at age 45 to 50. This increased to over 30% at age 50 to 55, and then decreased to less than 10% at age 65 to 70.
3.6 Health service use

3.6.1 Doctors (General Practitioners and specialists)

QUESTION: How many times have you consulted a family doctor or another general practitioner for your own health in the last 12 months?

![Graph showing number of visits to a GP in the last 12 months from Survey 1 to Survey 8 (N=6,695).]

At Survey 1, when they were aged 45 to 50 years, almost 80% of the women reported consulting a GP less than five times in the previous 12 months. The percentage of women in this category declined to 65% by age 65 to 70 years. Conversely, the percentage of women who consulted their GP seven or more times increased over the same period from 10% to 16%.

Figure 3-34 Number of visits to a GP in the last 12 months from Survey 1 to Survey 8 (N=6,695).
QUESTION: Thinking about your own health, how would you rate access to a GP who bulk bills? (Not asked at Survey 1).

Figure 3-35 Ratings of access to a bulk-billing GP from Survey 2 to Survey 8 (N=6,450).

* Includes women who may not have considered this question as applicable to them.

At Survey 2, 50% of the women rated their access to a GP who bulk billed as ‘excellent’, ‘very good’ or ‘good’. This percentage declined to Survey 4, when only 35% of the women reported that access was ‘excellent’, ‘very good’ or ‘good’. In later surveys, this percentage increased so that by Survey 8, 76% of the women responded that their access was ‘excellent’, ‘very good’ or ‘good’. 
QUESTION: How would you rate the cost to you of your most recent visit to a GP? (Not asked at Survey 1).

Figure 3-36 Rating of cost of visit to GP from Survey 2 to Survey 8 (N= 6,685).
*Includes women who may not have considered this question as applicable to them.

Figure 3-36 mirrors the trends evident in the previous figure: at Survey 2, a third of the women reported ‘no cost’ declining to 23% at Survey 4 then increasing to almost two thirds by Survey 8.
QUESTION: Thinking about your own health, how would you rate the hours when a GP is available? (Not asked at Survey 1).

![Ratings of hours of availability of GP from Survey 2 to Survey 8 (N=6,642).](image)

*Includes women who may not have considered this question as applicable to them.

Most of the women rated the hours that a GP was available to them as ‘good’, ‘very good’ or ‘excellent’, with little change over time.
QUESTION: Thinking about your own health, how would you rate access to a female GP? (Not asked at Survey 1).

Figure 3-38 Ratings of access to a female GP from Survey 2 to Survey 8 (N=6,507).

* Includes women who may not have considered this question as applicable to them.

There has been a progressive improvement in women’s ratings of access to a female GP over the study period. By Survey 8, over 80% of women rated access to a female GP as ‘excellent’, ‘very good’ or ‘good’.
QUESTION: How many times have you consulted a specialist doctor for your own health in the last 12 months?

Figure 3-39 Consultations with a specialist in the previous 12 months from Survey 4 to Survey 8 (N=6,442).

At Survey 1, the majority of women had not consulted a specialist doctor in the previous 12 months. There was an increase in those with one or two consultations at Survey 2. After Survey 2, when women were aged 47-52, the percentage of women who reported three or more specialist consultations in the previous 12 months gradually increased so that by Survey 8, 20% of the women reported three or more specialist consultations.
QUESTION: Thinking about your own health care, how would you rate access to medical specialists if you need it? (Not asked at Survey 1).

Figure 3-40 Access to specialist doctors from Survey 2 to Survey 8 (N=6,680).

* Includes women who may not have considered this question as applicable to them.

Access to specialist doctors was rated as ‘excellent’, ‘very good’ or ‘good’ by 80% of women at Survey 2 and this increased to 90% by Survey 8.
3.6.2 Screening

QUESTION: Thinking about your own health care, how would you rate ease of obtaining a Pap test? (Not asked at Survey 1).

![Graph showing the percentage of women who rated access to Pap test as 'excellent', 'very good', 'good', 'fair', 'poor', and 'don't know' from Survey 2 to Survey 8 (N=6,293).]

*Includes women who may not have considered this question as applicable to them.

Similar to previous responses from the women regarding access to healthcare, the substantial majority at Surveys 2 to 8 reported that access to a Pap test was ‘excellent’, ‘very good’ or ‘good’. By Survey 8, when they were age 65 to 70, almost 20% answered ‘don’t know’, which may reflect the increasing number of women who had by then had a hysterectomy.
QUESTION: Thinking about your own health care, how would you rate ease of obtaining a mammogram? (Not asked at Survey 1).

![Figure 3-42 Access to mammography (N=6,577).](image)

*Includes women who may not have considered this question as applicable to them.

At Survey 2, around 9% of women reported ‘fair’ or ‘poor’ access to mammography. This figure declined at Survey 3, when all members of the cohort were over aged over 50 years, which is the time when Australian guidelines recommend the commencement of regular mammography. By Survey 8, only 3% of women reported ‘fair’ or ‘poor’ access to mammography.
3.6.3 Hospitals

QUESTION: Have you been admitted to hospital in the last 12 months?

![Figure 3-43 Percentage of Hospital admissions in past 12 months from Survey 1 to Survey 8 (N=7,545).](image)

Fifteen per cent of the women were admitted to a hospital in the previous 12 months at Survey 1 and the percentage steadily increased over time, so that by Survey 8, almost 28% of the women reported a hospital admission in the past 12 months.
QUESTION: Thinking about your own health care, how would you rate access to a hospital if you need it? (Not asked at Survey 1).

Figure 3-44 Rating of access to a hospital if needed from Survey 2 to Survey 8 (N=6,642).
* Includes women who may not have considered this question as applicable to them.

A majority of women rated their access to a hospital as ‘excellent’ or ‘very good’, and this proportion increased over time. By Survey 8, 94% of the women rated access as ‘excellent’, ‘very good’, or ‘good’.
3.6.4 Health insurance

QUESTION: Do you have private hospital insurance?

QUESTION: Do you have private insurance for ancillary services?

QUESTION: Do you have a Health Care Card?

Figure 3-45 Uptake of private hospital insurance, private ancillary insurance and possession of Health Care Card from Survey 1 to Survey 8

(N for private hospital insurance = 6,675; N for private ancillary insurance =6,640; and N for health care card =7,018).

Uptake of private insurance for hospital and ancillary services began to increase after Survey 2 in 1998, reflecting changes to government policy whereby individuals without private health insurance would have higher premiums if they choose to take out private health insurance after the age of 30 and the introduction of tax rebates. The percentage of women who had a Health Care Card increased from 18% at Survey 3 to 61% at Survey 8, possibly reflecting transitions to retirement and an associated increase in eligibility for subsidised health services.
4 KEY RESEARCH ACHIEVEMENTS SINCE 1996

In this section the key research achievements which have contributed to the health of mid-aged Australian women are described by:

- Publications and reports that have used or analysed data from the 1946-51 ALSWH cohort
- Contributions to Government Policy
- Capacity building activities in women’s health research
- The identification of future gaps and priorities for research on the health of mid-aged Australian women

4.1 Publications and reports using data from the 1946-51 ALSWH cohort

4.1.1 Publications

ALSWH has published more than 290 papers that used data from the 1946-51 cohort. These publications are listed in Appendix A. The major themes are:

- Chronic conditions (more than 75 papers)
- Weight, nutrition and physical activity (more than 65 papers)
- Mental health (more than 40 papers)
- Health service use and systems (more than 30 papers)
- Reproductive health (more than 25 papers)
- Methodology (more than 20 papers)
- Complementary and alternative medicines (more than 20 papers)
- Social factors (more than 20 papers)
- Work patterns and work family balance (more than 15 papers)
- Abuse (more than 10 papers)
- Rural and remote health (more than 10 papers)
- Caring (more than 5 papers)

(Note: A publication may reflect more than one major theme).

Particularly noteworthy papers include:

**Weight, nutrition and physical activity**


**Menopause**


**Caring**


**Abuse**


Loxton D, Schofield M & Hussain R. Psychological health in midlife among women who have ever lived with a violent partner or spouse. *Journal of Interpersonal Violence*, 2006; 21(8): 1092-1107. 64 citations


**Mental health and chronic disease**


**Other**

• Mishra GD, Ball K, Dobson AJ & Byles JE. Do socio-economic gradients in women's health widen over time and with age? *Social Science and Medicine*, 2004; 58(9): 1585-1595. 40 citations


*Note: Citations are from the Scopus® abstract and citation database, and are current for September 2017.*

### 4.2 Reports to the Department of Health

#### 4.2.1 MAJOR REPORTS

Since 2006, ALSWH has published several major reports for the Department of Health that have used data from the 1946-51 cohort. These reports, listed in full in Appendix B, have included the following research areas:

**Health service use – past, present and future:** Most rapid use of GP service within the cohort occurred after age 55 – postmenopausal women had the most visits to the GP and specialists per year, and the highest pathology claims. Preventive items designed to improve health care for chronic conditions were underutilised – e.g., only 15-22% of women who reported being diagnosed or treated for diabetes had accessed the Diabetes Annual Cycle of Care.

**Chronic conditions:** 51% of women in the 1946-51 cohort had arthritis at age 62 – 67. This is a higher prevalence than that recorded for the women in the 1921-26 cohort when they were over ten years older (i.e., aged 73-78 at Survey 2). Diabetes prevalence is also already higher in the 1946-51 cohort at age 62-67 than it was for the 1921-26 cohort when they were aged 70-75 (i.e., at Survey 1 in 1996). Women with a Mediterranean style diet had a lower risk of developing diabetes. Many women have more than one condition, particularly women with BMI in the obese range.

**Mental health:** Most (66%) of the 1946-51 cohort have reported ongoing good mental health. There had been a steady increase in the use of the Better Access Scheme (BAS) to manage psychological distress by the cohort, with 10% claiming at least one BAS item by December 2010. Carers of people with a long term illness or disability had poorer mental health than non-carers, but women who were carers and also remained in the workforce and/or had strong
social support had better mental health. Overall, few women in the 1946-51 cohort experienced poor mental health during menopause, but poor mental health was associated with increased risk of subsequent cardiovascular disease.

**Weight and physical activity:** Weight and physical activity are both important contributors to health, wellbeing and the prevention and management of chronic conditions. ALSWH has examined weight and physical activity for the 1946-51 cohort in four major reports since 2006, which found that while BMI of women in the cohort increased steadily over time, with accompanying increases in diagnosis of chronic conditions such as hypertension and diabetes, the women also reported increasing levels of physical activity, with over 60% of the cohort meeting or exceeding the guidelines of 30 minutes of moderate activity on most days at the most recent survey.

**Rural, remote and regional differences in women’s health:** Some of the highlights from this 2011 report were that 1) mid-age women living in outer regional and remote areas had a higher prevalence of smoking between 1996 and 1998, but that by 2011, this difference by geographical location had generally narrowed so that around 10-12% of mid-aged women smoked, regardless of where they lived; 2) obesity was consistently related to geographical location with a higher prevalence of obese women living in regional and remote areas; 3) use of most health services, including access to specialised surgical procedures, was higher in major cities. An exception to this was for hysterectomy, with rates of women having a hysterectomy higher in more rural areas; and 4) a higher percentage of mid-aged women living in rural and remote areas consulted with complementary and alternative health care practitioners than women living in major cities.

**Adherence to health guidelines:** This report presented data on mid-aged women’s adherence to national evidence-based guidelines (namely, those produced by the National Health and Medical Research Council of Australia or Royal Australian College of General Practitioners). Some of the highlights from this 2012 report were that 1) mid-aged women were not meeting guidelines for a healthy body mass index – by 2010 62% of women in this cohort were overweight or obese; 2) between 70 to 80% of mid-aged women met the guidelines for safe alcohol consumption across the six surveys; 3) while around 80% of mid-aged women met the dietary guidelines for consumption of meat/meat substitutes, only half met the guidelines for fruit and only a third met the guidelines for vegetables; 4) there was an increase in the percentage of women meeting the physical activity guidelines over the surveys. Factors associated with meeting the guidelines were changing work patterns (decreased income, retirement) and widowhood; 5) the recommended health screening checks that mid-aged women were most likely to adhere to over time were blood pressure, cholesterol checks, mammography and pap tests.

### 4.2.2 OTHER REPORTS

ALSWH data from the 1946-51 cohort have also been used by researchers to produce single issue reports for the Department of Health and other agencies. Some examples include four reports on caring (2009, 2007 and 2006) prepared for the Department of Health and Ageing, and two reports on paid work and retirement (2007 and 2004) for the Office for Women, Australian Department of Families, Community Services and Indigenous Affairs. A full list of reports is available in Appendix B.
4.3 Contributions to Government Policy

Findings from the 1946-51 ALSWH cohort have directly influenced Federal and State Government Policy in several areas. We briefly feature two recent notable contributions:


4.3.1 The 2010 Australian Government’s National Women’s Health Policy

Published research from the ALSWH 1946-51 cohort was cited multiple times in the policy. Evidence from the ALSWH contributed to recommendations concerning prevention of chronic diseases (such as cardiovascular disease, diabetes and cancer) through control of risk factors such as obesity, smoking, physical activity, inadequate nutrition and alcohol consumption; risk factors for depression and anxiety; health outcomes associated with depression and anxiety; adherence to healthy behaviour guidelines; the impact of interpersonal violence and abuse; and the economic and social impacts for women of life events such as retirement, caring, divorce and widowhood.

4.3.2 The 2014 Australian Government’s Physical Activity Guidelines

Published research from the ALSWH 1946-51 cohort was cited in the systematic review of evidence supporting these guidelines (Brown et al., 2012). Evidence from the ALSWH contributed to recommendations concerning prevalence and predictors of weight gain, sedentary behaviours and health, and new domains of physical activity that need to be considered in activity guidelines.
### 4.4 Capacity building activities in women’s health research

Between 1996 and 2016, 35 researchers who based their research on the ALSWH 1946-51 cohort have graduated with a masters or PhD degree. The table below outlines these research topics.

<table>
<thead>
<tr>
<th>Student</th>
<th>Topic</th>
<th>Institution</th>
<th>Degree</th>
<th>Completion date</th>
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<tr>
<td>Anne Young</td>
<td>General Practitioner utilisation among women in Australia.</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>1999</td>
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<tr>
<td>Amanda Patterson</td>
<td>Iron deficiency in women of childbearing age</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>1999</td>
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<td>Jenny Powers</td>
<td>Stability of groups of correlated variables identified by exploratory factor analysis</td>
<td>The University of Newcastle</td>
<td>Master of Medical Statistics</td>
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<td>Barbara Reen</td>
<td>Exploring the feelings of depression, and understanding the nature and origin of these experiences among rural and remote mid-age women.</td>
<td>The University of Newcastle</td>
<td>Master of Medical Science</td>
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<td>Sue Outram</td>
<td>Women’s experiences of seeking help for emotional distress</td>
<td>The University of Newcastle</td>
<td>PhD</td>
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<tr>
<td>Lauren Williams</td>
<td>What factors influence weight change at menopause?</td>
<td>The University of Newcastle</td>
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<td>Melissa Graham</td>
<td>Women with menstrual symptoms, treatments tried, hysterectomy and satisfaction with outcomes</td>
<td>La Trobe University</td>
<td>PhD</td>
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<td>Deborah Loxton</td>
<td>The lifetime prevalence of, and factors associated with reporting of domestic violence by mid-age women in Australia</td>
<td>University of New England</td>
<td>PhD</td>
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<td>Emma Harley</td>
<td>Predictors of psychosocial recovery after change in physical health status: The impact of age on ‘good’ recovery</td>
<td>The University of Queensland</td>
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<td>Gabrielle Rose</td>
<td>The politics of breathing: A cultural analysis of asthma in Australia</td>
<td>The University of Queensland</td>
<td>PhD</td>
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<td>Dr Sally Price</td>
<td>Carers and psychosocial correlates over time: A longitudinal analysis.</td>
<td>The University of Queensland</td>
<td>Doctor of Psychology</td>
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<td>Karen Furlong</td>
<td>Epidemiology of osteoporosis in Australian women</td>
<td>The University of Queensland</td>
<td>Master of Public Health</td>
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<td>Leah Collins</td>
<td>Investigating quality of life and depression in middle aged and older Australian women with cancer</td>
<td>The University of Melbourne</td>
<td>Doctor of Psychology</td>
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<td>Karly Furber</td>
<td>Long term health impacts of intimate partner violence on mid-aged Australian women</td>
<td>The University of Newcastle</td>
<td>Master of Clinical Epidemiology</td>
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<td>Nadine Smith</td>
<td>Biopsychosocial correlates of women’s mental health: A longitudinal analysis of self-reported mental health across three generations of Australian women</td>
<td>The University of Queensland</td>
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<td>Rosemary Korda</td>
<td>Socioeconomic inequalities in women’s use of health care services in Australia</td>
<td>Australian National University</td>
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<td>Meredith Tavener</td>
<td>Your bloomin’ lot: An empirical study of the popular baby boomer stereotypes</td>
<td>The University of Newcastle</td>
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<td>Heather McKay</td>
<td>An investigation into the experiences of Australian women who have never given birth to a child</td>
<td>The University of Melbourne</td>
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<td>Lisa Beatty</td>
<td>The correlates and outcomes of breast-cancer in the mid-age data</td>
<td>Flinders University</td>
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<td>Nur Hafidha Hikmayani</td>
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<td>Master of Clinical Epidemiology</td>
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<td>Kore Yee Wong</td>
<td>Differences in causes of death of urban-rural women</td>
<td>The University of Queensland</td>
<td>Master of Biostatistics</td>
<td>2009</td>
</tr>
<tr>
<td>Hanh Tran</td>
<td>Correlates of mortality among middle-aged women: Results from a nationally representative prospective Australian cohort study.</td>
<td>The University of Queensland</td>
<td>Master of Epidemiology</td>
<td>2012</td>
</tr>
<tr>
<td>Leanne Fray</td>
<td>Work-life tensions: Time pressure, leisure and wellbeing among dual earner parents</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2012</td>
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<tr>
<td>Nicole Au</td>
<td>Obesity in Australia: An economic perspective.</td>
<td>Monash University</td>
<td>PhD</td>
<td>2012</td>
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<tr>
<td>Emma Poulson</td>
<td>Complementary and alternative medicine use in the Australian baby boomer and older adult populations</td>
<td>The University of Queensland</td>
<td>Doctorate Clinical Health</td>
<td>2012</td>
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<tr>
<td>Melissa Harris</td>
<td>When life’s a pain: The relationship between stress and modifiable psychological factors in arthritis</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2013</td>
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<tr>
<td>Jane Rich</td>
<td>An interdisciplinary investigation into the relationships between drought and mental health in Australia</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2014</td>
</tr>
<tr>
<td>Sue Conrad</td>
<td>Perceived neighbourhood cohesion and health among mid-aged Australian women</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2014</td>
</tr>
<tr>
<td>Amani Alhazmi</td>
<td>Association of dietary patterns and macronutrient intake with type 2 diabetes risk</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2015</td>
</tr>
<tr>
<td>Janni Leung</td>
<td>Urban rural differences in health care for women with colorectal, breast and lung cancer</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2015</td>
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<td>Thomas Lo</td>
<td>Healthcare resources use in older Australian women with arthritis</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2015</td>
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<td>Xenia Dolja-Gore</td>
<td>Predictors and outcomes of the use of mental health services: An analysis of observational data</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2016</td>
</tr>
<tr>
<td>Anthea White</td>
<td>Fall risk factors in mid-age women: Findings from the Australian Longitudinal Study on Women’s Health.</td>
<td>The University of Queensland</td>
<td>Masters</td>
<td>2016</td>
</tr>
<tr>
<td>Cassandra Lindsey</td>
<td>Tracking the impact of drug regulatory actions: consumer health outcomes, risk-benefit issues and policy framework - women’s comments on Vioxx and medicine safety</td>
<td>University of Wisconsin-Madison</td>
<td>PhD</td>
<td>2016</td>
</tr>
<tr>
<td>Vijayendra Murthy</td>
<td>A qualitative analysis of the use of Complementary &amp; Alternative Medicine (CAM) in relation to health status and health service utilisation by women with back pain</td>
<td>University Technology Sydney</td>
<td>PhD</td>
<td>2016</td>
</tr>
<tr>
<td><strong>There are 15 students currently enrolled in PhD research which is based on data from the ALSWH 1946-51 cohort. Findings from the 1946-51 cohort have been presented at a number of symposia as part of both international and specialist conferences.</strong></td>
<td><strong>University of Newcastle</strong></td>
<td></td>
<td><strong>Masters</strong></td>
<td>2016</td>
</tr>
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</table>
The research produced using ALSWH data collected from the 1946-51 cohort represents a large body of work covering a wide range of topics. However, there are emerging areas of research that could benefit from ALSWH analyses of data collected from the 1946-51 cohort. In particular, the 1946-51 cohort are at the forefront of the baby boomer cohort, who are expected to have a large and expensive impact on health service use as they retire and move into older and eventually very old age. It is essential that the wellbeing of women in this age group is measured, so that factors promoting long-term good health can be identified, and projections for health service and aged care needs can be estimated.

Particular priority areas for women’s health research among those in their late sixties and entering their 70s includes gaining a better understanding of the serious increase in overweight and obesity, and those factors that contribute to the worsening situation, as well as those factors that work to impact positively on health behaviours, such as diet and exercise. While living arrangements and marital status appear relatively stable for this cohort, there are a minority of women at risk for increased stress due to relatively poor financial situations, such as those with live in caring roles those who have had a period of time as sole parents, and the 10% of women who reported financial stress at Surveys 7 and 8.

This summary shows that women in the 1946-51 cohort, who are now aged 65 to 70 years, have undertaken a substantial amount of unpaid work over the past 20 years, including caring for children or adults. Carers are at risk of poorer mental health, poorer social support and higher stress levels, as well as reduced participation in the paid work force. Understanding how these roles fit into their lives and impact on women’s health as they age has important implications for policy.

This summary report has also demonstrated the recent onset of serious chronic conditions among this cohort, including heart disease, arthritis, stroke, and diabetes. The data collected over the past 20 years will help to untangle the complex predictors of serious illnesses that occur as women age.

On a positive note, women in this cohort have generally reported good access to health services, even though they have been more likely to report illness as they have aged. This is perhaps enhanced by the high number of women who report having private health insurance – although it is unclear whether this will continue as women in the cohort increasingly become eligible for health care subsidies (Health Care Cards) due to retirement from paid employment. The uptake and health outcomes of specific services can be assessed using ALSWH survey data linked with Medicare data, and ALSWH data are also routinely linked with hospital and cancer registry data from some states and territories. Analyses of these linked datasets have informed the Study’s last three major reports, and will continue to provide a rich source of information to help form the evidence base for policy development.
APPENDIX A: PUBLICATIONS USING 1946-51 COHORT DATA

1996

1997

1998

1999

2000


Rose G & Manderson L. More than a breath of difference: Competing paradigms of asthma. Anthropology and Medicine, 2000; 7(3): 335-350.


2001


Young AF, Dobson AJ & Byles JE. Determinants of general practitioner use among women in Australia. Social Science and Medicine, 2001; 53(12): 1641-1651.


2002


2003


2004


• Larson A, Bell M & Young AF. Clarifying the relationships between health and residential mobility. *Social Science and Medicine*, 2004; 59(10): 2149-2160.


• Mishra GD, Ball K, Dobson AJ & Byles JE. Do socio-economic gradients in women’s health widen over time and with age? *Social Science and Medicine*, 2004; 58(9): 1585-1595.


2005


• Loxton D, Schofield M & Hussain R. Psychological health in midlife among women who have ever lived with a violent partner or spouse. *Journal of Interpersonal Violence*, 2006; 21(8): 1092-1107.


• Everingham C, Stevenson D & Warner-Smith P. 'Things are getting better all the time'? Challenging the narrative of women's progress from a generational perspective. *Sociology*, 2007; 41(3): 419-437.


2008


2009


2010


2011

2012


2013


• Mishra G, Hockey R & Dobson A. A comparison of SF-36 summary measures of physical and mental health for women across the life course. Quality of Life Research, 2013;


2014


• Holden L, Lee C, Hockey R, Ware R & Dobson A. Validation of the MOS Social Support Survey 6-item (MOS-SSS-6) measure with two large population- *Quality of Life Research*, 2014. 23 (10); 2849-2853.


2015


• Harris ML, Byles JE, Sibbritt DW & Loxton D. “Just get on with it”: Qualitative insights of coming to terms with a deteriorating body for women with osteoarthritis. *PLOS One*, 2015; 10(3): e0120507


2016

- Aljadani H, Patterson A, Sibbritt D & Collins C. Diet quality and 6-year risk of overweight and obesity among mid-age Australian women who were initially in the healthy weight range. Health Promotion Journal of Australia, 2016; 27(1): 29-35; doi: 10.1071/HE14070


- de Luca K, Parkinson L, Byles J, Lo TKT, Pollard H & Blyth F. The prevalence and cross-sectional associations of neuropathic-like pain among older, community-dwelling women with arthritis. Pain Medicine, 2016; DOI: 10.1093/pm/pnv111


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2017


6 APPENDIX B: Reports prepared for the Department of Health and other agencies


6.2 Other reports

6.2.1 Urinary incontinence


6.2.2 Caring


6.2.3 Employment and retirement


6.2.4 Other

• The physical, social and economic health and wellbeing of women with dependent children, following relationship breakdown. Loxton D & Bryson L. Abbreviated Report prepared for the Office for Women, Department of Family and Community Services, July 2005.


• The physical social and economic health and wellbeing of women with dependent children, following relationship breakdown. Loxton D, Warner-Smith P & Young A. Technical report prepared for Health and Well-being Section, Office of the Status of Women, Department of Prime Minister and Cabinet, August 2004.