Australian Longitudinal Study on Women’s Health

1973-78 COHORT
SUMMARY 1996 – 2016

May 2017
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1 INTRODUCTION AND BACKGROUND

The Australian Longitudinal Study on Women’s Health (ALSWH) is a longitudinal population-based survey examining the health of over 50,000 Australian women. The Study follows women in four age cohorts, and a summary of the cohort born 1973-78 (now aged 39-44) who were first surveyed aged 18-23 in 1996 is presented here.

The 1973-78 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 seven times since 1996 and details of survey dates and response rates are shown in Table 1-1. Surveys 1 – 5 were offered as paper surveys only, and were mailed to participants. From Survey 6 onwards, participants have been offered the option of completing the survey online.

Table 1-1 ALSWH 1973-78 cohort - schedule of surveys and response rates 1996 - 2015

<table>
<thead>
<tr>
<th>Survey No.</th>
<th>Year of Survey</th>
<th>Age</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1996</td>
<td>18-23</td>
<td>14,247</td>
</tr>
<tr>
<td>2</td>
<td>2000</td>
<td>22-27</td>
<td>9,688</td>
</tr>
<tr>
<td>3</td>
<td>2003</td>
<td>25-30</td>
<td>9,081</td>
</tr>
<tr>
<td>4</td>
<td>2006</td>
<td>28-33</td>
<td>9,145</td>
</tr>
<tr>
<td>5</td>
<td>2009</td>
<td>31-36</td>
<td>8,200</td>
</tr>
<tr>
<td>6</td>
<td>2012</td>
<td>34-39</td>
<td>8,010</td>
</tr>
<tr>
<td>7</td>
<td>2015</td>
<td>37-42</td>
<td>7,186</td>
</tr>
</tbody>
</table>

At recruitment in 1996, the 1973-78 cohort were aged 18 to 23 and were in the early stages of transition from adolescence to adulthood. Since then, the cohort have moved into the workforce, entered adult relationships, and many have become mothers. Surveys have covered the main issues affecting the health of young women during this stage of the life-span. Topics have included:

- Socio-demographic factors (including education, employment, household composition)
- Health behaviours and risk factors (such as nutrition, physical activity, smoking, alcohol, and other drugs)
- Mental health (including depression and anxiety)
- Physical health (including health related quality of life, diseases, conditions, symptoms)
- Use of health services (GPs, specialists, hospitals)
- Ease of access to health services and satisfaction with services
- Reproductive health (including contraception, childbirth, fertility problems)
- Time use (including paid and unpaid work, family roles, leisure)
- Interpersonal violence

As the 1973-78 cohort approach middle age, surveys will increasingly cover issues (such as the menopause transition) affecting women’s health during this stage of life.

Standard validated questions from both Australian and overseas sources have been used in the surveys, to allow findings to be compared directly with information from other studies. The research team have also at times had to develop specific survey items, such as the Perceived Stress Questionnaire for Young Women (Bell & Lee, 2002), when there have been no suitable existing questions, thus contributing further to the international research literature.
2 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 employment (Figure 2-3), only participants who answered the relevant employment questions at Survey 3, Survey 4, Survey 5, Survey 6 and Survey 7 have been included. Participants who answered the questions at one, two or three of these surveys, but not all of them, have been excluded.

Complete data for every survey, including questions and responses, are available in the ALSWH databooks, available at: http://www.alswh.org.au/for-researchers/data/data-books

2.1 Socio-demographics

2.1.1 Area of residence

QUESTION: What is your (current) postcode?

Figure 2-1 Participant area of residence at time of survey from Survey 1 to Survey 7 (N = 4,254). Over time, the percentage of women living in outer regional and remote areas remained fairly stable, although from Survey 3, the percentage of women living in major cities increased slightly.
2.1.2 Education

QUESTION: What is the highest qualification you have completed?

- No formal qualifications
- School Certificate (Year 10)
- Higher School Certificate (Year 12 equivalent)
- Trade apprenticeship
- Certificate/diploma
- University degree
- Higher university degree

Figure 2-2 Highest educational qualification from Survey 1 to Survey 7 (N = 4,151).

When first surveyed in 1996, many of the women were commencing higher education. At Survey 1, about 30% of the women reported having a certificate/diploma or university degree; by Survey 7 in 2015, this percentage had increased to 85%. The proportion of women with less than Year 12 qualifications decreased slightly over time, although at Survey 7 about 5% of the women still reported that they had completed less than Year 12.
2.1.3 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 2-3 Participation in labour force (LF) from Survey 3 to Survey 7 (N = 4,875).

Note: Due to differences in question format, data from Survey 1 and Survey 2 have not been included. Data from all surveys are available in the survey databooks, available at: http://www.alswh.org.au/for-researchers/data/data-books

The number of women who were working full time decreased from about two-thirds at Survey 3 to about 40% of the women at Survey 6, increasing again at Survey 7 to 45%. However between 2003 and 2015, the number of women in part time employment increased, probably reflecting a life stage in which the women were having children and adjusting their working hours accordingly.
QUESTION: What is your main occupation?

Figure 2-4 Occupation category from Survey 2 to Survey 7 (N = 4,089).

Consistent with the previous figure, Figure 2-4 depicts an increase in the percentage of women who were not in the labour force up to Survey 5, then slightly decreasing, again possibly reflective of the women’s life stages.
2.1.4 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

Figure 2-5 Marital Status from Survey 1 to Survey 7 (N = 4,344).

Most of the women (approximately 80%) at Survey 1 had never been married and by Survey 7 in 2015 most were married (approximately 70%), or in a de facto relationship (12%). The percentage of women who were either married or in a de facto relationship increased over sixteen years, although at each survey marriage was the more common relationship response. The proportion of women who reported that they were separated, divorced or widowed increased over time, and by Survey 7 only about 11% of women had never been married.
2.1.5 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 2-6 Ability to manage on income from Survey 1 to Survey 7 (N = 4,743).

Note: Question was not asked at Survey 2

Most of the women found it easy or not too bad managing on their income at Survey 1, and this remained consistent across Surveys 3, 4 and 5 (Item was not included at Survey 2). By Surveys 6 and 7, when the women were aged 34-42, more of them were reporting difficulties always or sometimes, and fewer responded ‘It is easy’. This change may reflect an increase in the percentage of women in part time work and decrease of those in full time work.
2.2 Lifestyle

2.2.1 Weight and Body Mass Index (BMI)

QUESTION: How much do you weigh without clothes or shoes? (Surveys 4-7 have included instructions for pregnant women to supply pre-pregnancy weight, estimating if they were unsure).

![Graph showing participant weight from Survey 1 to Survey 7 (N = 3,591).](image)

Figure 2-7 Participant weight from Survey 1 to Survey 7 (N = 3,591).
QUESTION: How tall are you without shoes? + QUESTION: How much do you weigh without clothes or shoes? (Surveys 4-7 have included instructions for pregnant women to supply pre-pregnancy weight, estimating if they were unsure). BMI \( \frac{\text{weight (kg)}}{\text{height (m)}^2} \) is calculated from responses to both questions.

Figure 2-8 Body Mass Index (BMI) from Survey 1 to Survey 7 (N=3,589).

There is a marked increase in weight over time and a concomitant increase in the percentage of women whose BMI was within the overweight or obese categories, from 20% at Survey 1 to around 50% by Survey 7. A small percentage of women reported being underweight at Survey 1 and this has fallen steadily over the six subsequent surveys.
2.2.2 Satisfaction with weight

QUESTION: In the past month, how dissatisfied have you felt about your weight? (Responses 1, 3, and 5 allowed participants to respond in between categories.)

- 0. Not at all
- 1.
- 2. Slightly
- 3.
- 4. Moderately
- 5.
- 6. Markedly

Figure 2-9 Satisfaction with weight from Survey 1 to Survey 7 (categories 1, 3, and 5 lie between their adjacent named levels) (N = 4,394).

Across all seven surveys, most women were dissatisfied with their weight, with more than 40% of women reporting that they were at least moderately dissatisfied. Additional detail about this question can be found in Table 5-1 in Appendix A.
2.2.3 Physical Activity

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?

Figure 2-10 Physical Activity from Survey 2 to Survey 7 (N = 4,158).

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

A decreasing percentage of women report moderate or high levels of physical activity from Surveys 2 to 5, when levels stabilise. This trend is reversing by Survey 7. Over time an increasing percentage of women reported that they were sedentary or did either none or low levels of physical activity, with almost half of the women in these categories by Survey 5. Details of how levels of physical activity are calculated, and further breakdown of physical activity by BMI category can be found in Table 5-2 in Appendix A.
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?

Figure 2-11 Percentage of women sitting more than 6 hours/day from Survey 2 to Survey 7 (N = 3,918).
While an increasing percentage of women were classified as inactive (Figure 2-10), Figure 2-11 indicates that from Survey 3 until Survey 6 the women have reported progressively less sitting time. This trend has now reversed.
2.2.4 Diet and Nutrition

New dietary guidelines were released in 2013 [https://www.eatforhealth.gov.au/guidelines](https://www.eatforhealth.gov.au/guidelines). They are less prescriptive than previous guidelines, but still recommend 5 serves of vegetables and 2 serves of fruit per day for women (including pregnant women). The following graphs are based on questions in Survey 7.

**QUESTION:** How many pieces of fresh fruit do you usually eat per day?

![Graph showing the percentage of women eating fruit at Survey 7 (age 37 to 42), by number of pieces per day (N=6,814).](image)

**Figure 2-12** Percentage of women eating fruit at Survey 7 (age 37 to 42), by number of pieces per day (N=6,814).
QUESTION: How many serves of vegetables do you usually eat each day?

Figure 2-13 Percentage of women eating vegetables at Survey 7 (age 37-42), by number of serves per day (N=6,817).
2.2.5 Smoking, alcohol and illicit drug use

Smoking

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 in calculations of smoking prevalence.

Figure 2-14 Smoking prevalence from Survey 1 to Survey 7 (N = 4,260).

About a quarter of the women were current smokers at Survey 1, but by Survey 6 the percentage of women who reported they were current smokers had declined to about 10%, and this remained the same at Survey 7. The percentage of women who had never smoked decreased slightly from Survey 1 to Survey 3 and then levelled off, while those who regarded themselves as ex-smokers increased until Survey 6 and remained the same at Survey 7.
**Alcohol use**

**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.

![Graph showing alcohol consumption from Survey 1 to Survey 7 (N = 4,371).](image)

**Note:** Low risk drinker includes up to 2 drinks per day and rarely drinks; Risky drinker includes 3 or more drinks on one occasion. Categories are based on 2002 NHMRC guidelines.
Most of this cohort drank alcohol at low risk levels across all surveys. Levels of risky alcohol consumption were relatively low at Survey 1 and showed a small decline from Survey 1 to Survey 4, when levels of risky drinking increased, reaching 6% at Survey 7. During the Study period, the percentage of women who were categorised as non-drinkers increased, possibly as a result of the women starting families and eliminating alcohol while they were pregnant.

**Illicit drugs**

(Women are asked to provide information about use of drugs for NON-MEDICINAL purposes).

QUESTION: Have you ever used/ tried Marijuana (cannabis, hash, grass, dope, pot, yandi)?

- In the last 12 months
- More than 12 months ago
- Never.

QUESTION: Have you used/ tried other illicit drugs (e.g., amphetamines, LSD, natural hallucinogens, tranquillisers, cocaine, ecstasy, inhalants, heroin, barbituates)?

In the last 12 months, more than 12 months ago, never.

- In the last 12 months
- More than 12 months ago
- Never.

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**Figure 2-16 Illicit drug use from Survey 2 to Survey 7 (N = 4,278).**
2.3 Mental Health

QUESTION: In the last 3 years, have you been diagnosed or treated for depression?

Figure 2-17 Percentage of women who reported having diagnosis or treatment for depression from Survey 2 to Survey 7 (N = 3,865).

Between Survey 2 in 2000 and Survey 6 in 2012, the percentage of women reporting that they had been diagnosed with or treated for depression in the past three years increased from 13% to 18% at Survey 6. This dropped slightly to 17% at Survey 7.
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’

Figure 2-18 Percentage of women with a CESD10 score ≥10 from Survey 2 to Survey 7 (N=4,862).

The CESD10 measures symptoms of depression, with a score of 10 or more indicating that symptom severity is reaching clinically significant levels. While an increasing percentage of women reported a diagnosis or treatment of depression, self-reported symptoms of depression, as measured by the CESD10, fluctuated over time. This could be an indicator of treatment effects and/or a decrease in psychological distress associated with increasing age.
QUESTION: In the last 3 years, have you been diagnosed or treated for anxiety?

The percentage of women who reported that they had been diagnosed with, or treated for, anxiety increased over time. This suggests that more women who are experiencing mental health problems may be accessing appropriate treatment.
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

![Graph showing change in LOT-R scores over time]

Figure 2-20 Optimism as indicated by Mean Revised Life Orientation Test (LOT-R) Scores from Survey 2 to Survey 7 (N = 4,383).

An increase in optimism is indicated by the mean scores from the Revised Life Orientation Test (LOT-R). 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. The decrease in optimism at Survey 7 mirrors results for the CESD (Figure 2-18) that showed an increase in clinically significant levels of depressive symptoms.
QUESTION: In the past week, have you been feeling that life isn’t worth living?

Figure 2-21 Percentage of women with suicidal ideation in the past week from Survey 1 to Survey 7 (N = 4,351).

From Survey 2 to Survey 5, the number of women experiencing suicidal ideation decreased. However, Survey 6 and Survey 7 show a slight increase in the number of women reporting suicidal ideation.
QUESTION: In the past 6 months have you ever deliberately hurt yourself or done anything that you knew might have harmed or even killed you?

Figure 2-22 Percentage of women with self-harming behaviours from Survey 1 to Survey 7 (N=4,351).

The percentage of women reporting self-harming behaviours declines over time.
2.3.1 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 friends
- Motherhood/children

Figure 2-23 Mean stress score over the previous 12 months from Survey 1 to Survey 7 (N=4,479).

Consistent with improvements in self-reported mental health and optimism, the women’s stress decreased, as indicated by the mean scores from the Perceived Stress Scale, especially between Survey 5 and Survey 6.
2.3.2 Abuse

QUESTION: Have you ever been in a violent relationship with a partner/spouse?

Figure 2-24 Percentage with history of abuse from partner or spouse from Survey 1 to Survey 7 (N=4,061).

Around 9% of women reported having ever been in a violent relationship with a partner or spouse at Survey 1 and this figure rose to around 21% of women by Survey 7.
2.4 Physical health conditions

QUESTION: In general, would you say your health is excellent, very good, good, fair, poor?

Figure 2-25 Self-rated health from Survey 1 to Survey 7 (N = 4,541).

Across all seven surveys, more than 90% of women rated their health as good, very good, or excellent.
QUESTION: Compared to one year ago, how would you rate your health in general now?

Figure 2-26 Self-rated health compared to one year ago, from Survey 1 to Survey 7 (N = 4,546).

Compared to one year ago, the majority of the women felt that their health was much better, somewhat better, or about the same. About 10% of the women felt their health was somewhat worse than the previous year and this percentage remained fairly stable over the sixteen years between Survey 1 and Survey 7.
2.4.1 Anaemia/iron deficiency

QUESTION: In the last 3 years, have you been diagnosed or treated for low iron?

Figure 2-27 Percentage of women with low iron levels from Survey 1 to Survey 7 (N = 3,838).

Note: At Survey 1, women were asked if they had ‘ever’ had low iron levels, and at Survey 2, they were asked if they had had low iron levels ‘in the last four years’ (i.e., since Survey 1 in 1996).

At Survey 1, almost a quarter of the women reported a diagnosis of or treatment for low iron levels. This percentage decreased until Survey 4, at which time it increased and plateaued with a possible decline at Survey 6. The cause of these fluctuations is uncertain, but may be related to pregnancy and childbirth.
2.4.2 Asthma

QUESTION: In the last 3 years, have you been diagnosed or treated for asthma?

![Graph showing the percentage of women with asthma from Survey 1 to Survey 7 (N = 6,996).](image)

**Figure 2-28 Percentage of women with asthma from Survey 1 to Survey 7 (N = 6,996).**

*Note: At Survey 1, women were asked if they had ‘ever’ had asthma, and at Survey 2, they were asked if they had had asthma ‘in the last four years’ (i.e., since Survey 1 in 1996).*

At Survey 1, the women reported if they had ever been diagnosed with asthma and about a quarter responded positively. In subsequent surveys, the question asked whether asthma had been diagnosed since the previous survey, so increasing percentages of women report being diagnosed between Survey 2 and Survey 7.
2.4.3 Hypertension

QUESTION: In the last 3 years, have you been diagnosed or treated for hypertension?

![Graph showing percentage of women with hypertension from Survey 1 to Survey 7 (N = 6,995).]

**Figure 2-29 Percentage of women with hypertension from Survey 1 to Survey 7 (N = 6,995).**

*Note: At Survey 1, women were asked if they had ‘ever’ had hypertension, and at Survey 2, they were asked if they had had hypertension ‘in the last four years’ (i.e., since Survey 1 in 1996). Gestational hypertension has been asked as a separate question since Survey 2, and is not included in this figure.*

Hypertension was relatively uncommon at Survey 1 when the women were asked if they had ever been diagnosed with hypertension. However, the percentage of women being diagnosed with this condition increased at subsequent surveys, so that by Survey 7 in 2015, 12% of the women reported that they had been diagnosed or treated for hypertension in the past three years.
2.4.4 Diabetes

QUESTION: In the last 3 years, have you been diagnosed or treated for diabetes?

Figure 2-30 Percentage of women with diabetes from Survey 1 to Survey 7 (N = 7,042).

Note: At Survey 1, women were asked if they had ‘ever’ had diabetes, and at Survey 2, they were asked if they had had diabetes ‘in the last four years’ (i.e., since Survey 1 in 1996). Gestational diabetes has been asked as a separate question since Survey 2, and is not included in this figure.

An increasing percentage of women have reported being diagnosed with diabetes in the past three years since Survey 1 when the women were asked if they had ever been diagnosed or treated for diabetes. Obesity is an established risk factor for the development of type two diabetes and the increase in diagnosed diabetes is consistent with the increasing BMI of the cohort. A breakdown of diabetes by BMI category is available in Table 5-3 in Appendix A.
2.5 Health service use

2.5.1 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?

Figure 2-31 Number of visits to a GP in the last 12 months from Survey 4 to Survey 7 (N = 5,493).

*Note: Surveys 2 and 3 included two questions about number of GP visits and are not comparable with later surveys.*

Little variation was evident in the number of GP visits by the women from Survey 4 to Survey 7 - about 30% reported visiting their GP five or more times in the previous 12 months.
QUESTION: In general, do you prefer to see a female doctor?

- Yes, always
- Yes, but only for certain things
- No
- Don’t care

Figure 2-32 Preference for female GP from Survey 1 to Survey 7 (N = 4,448).

Between 1996 and 2012, preferences for seeing a female GP remained stable, with about 40% of the women indicating either they had no preference or they didn’t care. Over time however, an increasing percentage preferred to see a female GP ‘for certain things’.
QUESTION: Thinking about your own health, how would you rate access to a GP who bulk bills?

Figure 2-33 Ratings of access to a bulk-billing GP from Survey 2 to Survey 7 (N = 4,106).

*Note:* This question was not asked at Survey 1.

Women’s rating of their access to a bulk billing GP has improved since Survey 3, when it was rated as poor by about 40% of women. Ratings initially declined from 70% of women who rated access as good or better at Survey 2 to 40% at Survey 3, and thereafter increased to almost 60% of women by Survey 7. Additional details for ratings of access to a bulk billing GP can be found in Table 5-4 in Appendix A.
QUESTION: How would you rate the cost to you of your most recent visit to a GP?

Figure 2-34 Rating of cost of visit to GP from Survey 2 to Survey 7 (N=4,335).

Note: This question was not asked at Survey 1.

As with the previous figure, ratings of the cost of visiting a GP have improved since Survey 3. The percentage of women who rated the cost of a visit to a GP as good, or better than good, initially declined from almost 80% of women at Survey 2 to just over 60% at Survey 3. This change was accompanied by a decline in the percentage of women who reported that a visit to a GP was available at no cost to them. By Surveys 5, 6 and 7, the percentage of women who rated the cost of a visit to a GP as good or better increased to around 70%.
QUESTION: Thinking about your own health, how would you rate the hours when a GP is available?

![Graph showing ratings of GP hours availability from Survey 2 to Survey 7]

**Figure 2-35 Ratings of hours of availability of GP from Survey 2 to Survey 7 (N = 4,428).**

Note: This question was not asked at Survey 1.

Ratings of the hours when a GP is available have also seen an initial small decline to Survey 4, when about a third of women rated availability as fair or poor. This has since been followed by a similarly scaled improvement, such that by Survey 7 about 80% of women rated availability as good or better than that (i.e., around 20% rated it as fair or poor).
QUESTION: Thinking about your own health, how would you rate access to a female GP?

Figure 2-36 Ratings of access to a female GP from Survey 2 to Survey 7 (N = 4,281).

Note: This question was not asked at Survey 1.

In a similar pattern to related figures above, after an initial decline in ratings of access to a female GP from Survey 2 to Survey 3, there has been a progressive improvement over subsequent surveys. By Survey 7, more than 80% of women rated access to a female GP as good, very good, or excellent.
QUESTION: How many times have you consulted a *specialist doctor* for your own health in the last 12 months?

**Figure 2-37 Consultations with a specialist in the previous 12 months from Survey 4 to Survey 7 (N = 5,196).**

*Note:* Due to differences in question format, data from Surveys 1-3 has not been included in this comparison. Data from all surveys are available in the survey databooks, available at: [http://www.alswh.org.au/for-researchers/data/data-books](http://www.alswh.org.au/for-researchers/data/data-books)

Across all four surveys, the majority of women had not consulted a specialist doctor in the previous 12 months, but at least 20% reported three or more specialist consultations in the previous 12 months.
QUESTION: Thinking about your own health care, how would you rate access to medical specialists if you need it?

Figure 2-38 Access to specialist doctors from Survey 2 to Survey 7 (N = 4,301).

While the percentage of women who rated access to medical specialist as fair or poor has declined from just under 20% at Survey 2, the percentage who rated access as excellent or very good has progressively increased at each survey, from just less than half of the women at Survey 2 to over 60% at Survey 7. Additional details for satisfaction with access to specialist doctors can be found in Table 5-5 in Appendix A.
QUESTION: Thinking about your own health care, how would you rate ease of obtaining a Pap test?

Ratings on the ease of access to obtaining a Pap test have remained largely unchanged from Survey 2 to Survey 7, except for a slight dip at Survey 3. For the other surveys, about two out of three women regard access as either very good or excellent.
2.5.2 Hospitals

QUESTION: Have you been admitted to hospital in the last 12 months?
- For normal childbirth
- For problems with childbirth
- All other reasons

Figure 2-40 Percentage of Hospital admissions in past 12 months from Survey 2 to Survey 7 (N = 4,185).

Reflecting a life stage in which the women are starting their families, hospital admissions started to increase from Survey 2 when women were aged 22-27. Admissions for childbirth and pregnancy complications peaked at Survey 4, when women were aged 28-33, and have since declined. Hospital admissions for other reasons have steadily increased since Survey 3.
QUESTION: Thinking about your own health care, how would you rate access to a hospital if you need it?

![Figure 2-41 Rating of access to a hospital if needed from Survey 2 to Survey 7 (N = 4,411).](image)

Note: This question was not asked at Survey 1.

Between Survey 2 and Survey 7, women’s assessment of access to a hospital improved, so that by Survey 7 about 75% of the women rated access as good, very good, or excellent. Additional details for ratings of access to a hospital can be found in Table 5-6 in Appendix A.
2.5.3 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 2-42 Uptake of private hospital insurance, private ancillary insurance and possession of Health Care Card from Survey 1 to Survey 7 (N for private hospital insurance = 4,407, N for private ancillary insurance = 4,390, and N for health care card = 4,432).

Uptake of private insurance for hospital and ancillary services began to increase in 2000, reflecting both 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 a higher likelihood of planned hospital use due to pregnancy and childbirth. The percentage of women who had a Health Care Card declined by about a third from 18% at Survey 2 to 11% at Survey 4, and remained at around 11 - 12% of women for the remaining surveys.
2.6 Reproductive health
2.6.1 Contraceptive use

QUESTION: What sort/forms of contraception do you use now?

- Oral contraceptive pill
- Condoms
- Other (has differed across surveys - options have included: withdrawal, injection, IUD, vaginal ring, implant, safe period method, emergency contraceptive pill, and other)
- No contraceptive use

Figure 2-43 Percentages of women using the oral contraceptive pill, condoms, other forms of contraception, or no contraception from Survey 1 to Survey 7 (N = 4,206).

Note: Excludes women who reported they were trying to fall pregnant.

Over time the use of the contraceptive pill and condoms decreased as other forms of contraceptive (e.g., long acting reversible contraceptives) became available and more popular.

Table 2-1 Percentage of Women using Long-Acting Reversible Contraception (LARC) at Survey 5 and Survey 7

<table>
<thead>
<tr>
<th>Question stem: What forms of contraception do you use now?</th>
<th>Survey 5</th>
<th>Survey 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use an implant (e.g., Implanon)</td>
<td>2.6%</td>
<td>2.9%</td>
</tr>
<tr>
<td>I use a copper intrauterine device (IUD)</td>
<td>0.5 %</td>
<td>0.7 %</td>
</tr>
<tr>
<td>I use a progesterone intrauterine device (IUD; e.g., Mirena)</td>
<td>4.7 %</td>
<td>11.0 %</td>
</tr>
<tr>
<td>I use an injection (e.g., Depo provera)</td>
<td>1 %</td>
<td>1.0 %</td>
</tr>
<tr>
<td>I use a vaginal ring (e.g., Nuvaring)</td>
<td>0.4 %</td>
<td>0.2 %</td>
</tr>
</tbody>
</table>
2.6.2 Premenstrual syndrome (PMS) and dysmenorrhea

QUESTION: In the last 12 months have you had any of the following:

- Premenstrual tension.
- Severe period pain.

**Figure 2-44** Percentage of women with PMS and dysmenorrhea from Survey 2 to Survey 7 (N = 4355).

ALSWH data show premenstrual syndrome (PMS) and dysmenorrhea (painful periods) are common menstrual symptoms among Australian women. As seen in Figure 2-44, both have relatively stable prevalence over time. From Survey 2 (2000), when women were aged 22 to 27 years, to Survey 7 (2015) when they were aged 37 to 42 years, PMS varied between 33-42% and dysmenorrhea between 21-24%.
2.6.3 Hysterectomy

QUESTION: Have you ever had any of the following operations or procedures?

- Hysterectomy

Figure 2-45 Percentage of women with hysterectomy from Survey 5 to Survey 7 (N = 5,826).

The number of women who have undergone a hysterectomy is low, at less than 1% at Survey 5, and increasing slightly to about 3% by Survey 7, when women were aged 37-42.
2.6.4 Endometriosis

QUESTION: In the last 3 years have you been diagnosed with or treated for: Endometriosis

Figure 2-46 Percentage of women with endometriosis from Survey 3 to Survey 7 (N = 4,265).

Note: Starting at Survey 3 and in all subsequent surveys, women were asked if they had been diagnosed or treated for endometriosis in the last 3 years. The condition was treated as an enduring condition - however as they were never asked have you ‘ever’ been diagnosed or treated for the condition, the percentages may be an undercount.
2.6.5 Polycystic Ovary Syndrome (PCOS)

QUESTION: In the last 3 years have you been diagnosed with or treated for: Polycystic Ovary Syndrome.

![Graph showing percentage of women with PCOS from Survey 4 to Survey 7 (N = 4,751).](image)

Figure 2-47 Percentage of women with PCOS from Survey 4 to Survey 7 (N = 4,751).

Note: Starting at Survey 4 and in all subsequent surveys, women were asked if they had been diagnosed or treated for PCOS in the last 3 years. The condition was treated as an enduring condition - however as they were never asked have you ‘ever’ been diagnosed or treated for the condition, the percentages may be an undercount.
2.6.6 Menopause status (at Survey 7, cohort age 37-42)
Menopause status was determined based on the responses to survey questions about hysterectomy, oophorectomy, hormone therapy, and menstrual pattern. Classification was as follows:

- **Hysterectomy or surgical menopause**: women who reported having had a hysterectomy, oophorectomy, or both.
- **Premenopausal**: women who had menstruated in the last 3 months and reported no change in menstrual frequency in the last 12 months.
- **Postmenopausal**: women who reported amenorrhea for 12 consecutive months or more.

If women reported use of hormone supplements (HT or oral contraception) before reaching menopause, their menopause status was defined according to the hormone supplement used.

Table 2-2 Menopause status at Survey 7 (N=7,062).

<table>
<thead>
<tr>
<th>Menopause status</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysterectomy only</td>
<td>186</td>
<td>2.63</td>
</tr>
<tr>
<td>Oopherectomy only</td>
<td>11</td>
<td>0.16</td>
</tr>
<tr>
<td>Hysterectomy and oopherectomy</td>
<td>27</td>
<td>0.38</td>
</tr>
<tr>
<td>Oral contraception use</td>
<td>2227</td>
<td>31.53</td>
</tr>
<tr>
<td>Premenopausal</td>
<td>4396</td>
<td>62.25</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>207</td>
<td>2.93</td>
</tr>
<tr>
<td>Unclassifiable</td>
<td>8</td>
<td>0.11</td>
</tr>
</tbody>
</table>

2.7 Child data

2.7.1 Demographics – Number and spacing of children, age at first birth,

Number of children

7,186 women completed Survey 7 in 2015, when the cohort was aged 37 to 42 years. Of these, 25.3% did not have children, 12.9% had one child, 37.4% had two children and 24.5% had three or more children. Figure 2-48 shows the number of children reported by women who completed Survey 7.

![Figure 2-48 Number of children at Survey 7 in 2015 (N = 7,186).](chart)

Birth spacing

The mean birth interval was 36.3 months. Women with 2 children had a similar mean interval of 36.7 months, compared with women with 3 children (35.9 months).

Multiple births

In 2015, 2.8% (n = 232) of women had had a multiple birth. (Based on information on children from Surveys 3 to 7)

Age at birth of first child

Among the 8,349 women who responded to any survey from Survey 3 to Survey 7 and had children, the mean age at birth of first child was 28.3 years (IQR: 24.8 – 32.0 years). For mothers with one child (n = 1,828), the mean age at birth was 30.8 years, for those with two children (n = 3,942), mean age at first birth was 28.7 years, and for mothers with three or more children (n = 2,487), it was 25.9 years.
2.7.2 Fertility/Infertility

QUESTION: Have you and your partner (current or previous) ever had problems with fertility – that is, tried unsuccessfully for 12 months or more to get pregnant? (Mark one only)

- No have never tried to get pregnant
- No, Have had no problem with fertility
- Yes, but have not sought help/treatment
- Yes, and have sought help/treatment

At Survey 7 in 2015, when they were aged 37 to 42, 1,818 (25.3%) of the women had no children. Of these women, 65% had never tried to get pregnant, while 21% had tried unsuccessfully for at least 12 months to get pregnant (including due to fertility problems of the partner). Among the 5,368 women who responded to Survey 7 and had children, 77% had not experienced issues with fertility.

2.7.3 Birth outcomes

Women in this cohort have been asked about childbirth at every survey. A summary of the questions included on Surveys (1-7) is provided here:

QUESTION: Are you currently pregnant? Response options: Yes, No, Don’t know (Asked on Surveys 1, 2 and 3)

QUESTION: Are you currently pregnant? Response options: No, less than 3 months, 3 to 6 months, more than 6 months, don’t know. (Asked on Surveys 4, 5, 6 and 7).

QUESTION: Have you ever been pregnant? Response options: Yes/No. (Asked on Surveys 1, 5, 6 and 7)

QUESTION: How many times have you had each of the following:

<table>
<thead>
<tr>
<th></th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
<th>5 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live birth</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Stillbirth</td>
<td></td>
<td></td>
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<tr>
<td>Miscarriage</td>
<td></td>
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<tr>
<td>Termination (abortion) for medical reasons (e.g., fetal abnormalities)</td>
<td></td>
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<tr>
<td>Termination (abortion) for other reasons</td>
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<tr>
<td>Ectopic pregnancy (tubal pregnancy)</td>
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</table>

Note: This question was asked at Surveys 2, 3, 4, 5, 6 and 7, but not all items were included at each survey. Please see databooks for full details.

QUESTION: If you have ever given birth to a child, please write the date of each birth in the box. (If you had twins, please write the date twice).

This question was asked at Surveys 3, 4, 5 and 6. At Survey 7, if women had ever given birth, they were asked to write the number of live births and the number of stillbirths (at least 20 weeks gestation or at least 400 grams birth weight) in boxes provided on the survey. For each birth, they were also asked to provide the following:

- Date of birth (DD/MM/YYYY)
- Sex (F or M)
- Birth weight (kg or pounds)
- Length at birth (cm)
- Whether child lives with them now, at least part of the time
QUESTION: Did you experience any of the following:

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<thead>
<tr>
<th></th>
<th>Never</th>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
<th>4&lt;sup&gt;th&lt;/sup&gt;</th>
<th>5&lt;sup&gt;th&lt;/sup&gt;</th>
<th>6&lt;sup&gt;th&lt;/sup&gt;</th>
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<th>8&lt;sup&gt;th&lt;/sup&gt;</th>
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<tbody>
<tr>
<td>Premature birth*</td>
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<tr>
<td>Stillbirth**</td>
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<tr>
<td>Caesarean section before going into labour</td>
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<tr>
<td>Induction of labour (via gel or drip)**</td>
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<tr>
<td>Caesarean section after going into labour</td>
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<tr>
<td>Labour lasting more than 36 hours</td>
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<tr>
<td>Episiotomy (cutting of vagina)</td>
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<tr>
<td>A vaginal tear requiring stitches</td>
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<tr>
<td>Instrumental delivery (forceps/vacuum)</td>
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<tr>
<td>Emotional distress during labour**</td>
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<tr>
<td>Medical removal of placenta and/or blood clots by hand</td>
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<tr>
<td>Excessive blood loss requiring extra blood or fluid by drip (IV infusion)</td>
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<tr>
<td>A low birth weight baby (weighing less than 2500 grams or 5 ½ pounds)</td>
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<tr>
<td>A high birth weight baby (weighing more than 4000 grams or 8.5 pounds)**</td>
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<tr>
<td>Baby requiring admission to special care/Neonatal Intensive Care Unit**</td>
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<tr>
<td>Epidural or spinal block</td>
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<tr>
<td>Gas or injection for pain relief</td>
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<tr>
<td>Death of a live-born baby within the first month**</td>
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</table>

Note: This question was asked at Surveys 4, 5, 6, 7, but not all items were included at each survey. Please see databooks for full details.

QUESTION: were you diagnosed or treated for:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
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<th>7&lt;sup&gt;th&lt;/sup&gt;</th>
<th>8&lt;sup&gt;th&lt;/sup&gt;</th>
<th>9&lt;sup&gt;th&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Antenatal depression</td>
<td></td>
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<tr>
<td>Postnatal depression</td>
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<tr>
<td>Antenatal anxiety</td>
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<tr>
<td>Postnatal anxiety</td>
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<tr>
<td>Gestational diabetes</td>
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<td></td>
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<tr>
<td>Hypertension (high blood pressure) during pregnancy</td>
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</tbody>
</table>

Asked at Surveys 5, 6 and 7.
Births reported by participants across all surveys (N = 18,525) are shown in Table 2-3 and Figure 2-49. Births occur between surveys, so survey periods have been included – e.g., Survey 1-2 is the period between Surveys 1 and 2.

Table 2-3 Number of births reported by women in the 1973-78 cohort across the survey period.

<table>
<thead>
<tr>
<th>Survey period</th>
<th>Time period</th>
<th>Age of mother</th>
<th>Number of births</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Survey 1</td>
<td>Before 1996</td>
<td>Less than 23</td>
<td>1,102</td>
<td>5.95</td>
</tr>
<tr>
<td>Survey 2 - 3</td>
<td>2000 - 2003</td>
<td>22 - 30</td>
<td>2,823</td>
<td>15.24</td>
</tr>
<tr>
<td>Survey 3 - 4</td>
<td>2003 - 2006</td>
<td>25 - 33</td>
<td>3,932</td>
<td>21.23</td>
</tr>
<tr>
<td>Survey 4 - 5</td>
<td>2006 - 2009</td>
<td>28 - 36</td>
<td>4,122</td>
<td>22.25</td>
</tr>
<tr>
<td>Survey 5 - 6</td>
<td>2009 - 2012</td>
<td>31 - 39</td>
<td>3,116</td>
<td>16.82</td>
</tr>
<tr>
<td>Survey 6 - 7</td>
<td>2012 - 2015</td>
<td>34 - 42</td>
<td>1,369</td>
<td>7.39</td>
</tr>
</tbody>
</table>

Figure 2-49 Number of births reported by women in the 1973-78 cohort across the survey period.
2.7.3.1 Elective Caesarean (N=17,476)

Figure 2-50 Percentage of births to women who reported having an elective Caesarean from Survey 1 – Survey 7 (N=17,476).
2.7.3.2 Emergency Caesarean

Figure 2-51 Percentage of births to women who reported having an emergency Caesarean (N = 17,435).
2.7.3.3 Episiotomy

![Graph showing percentage of births to women who reported having an episiotomy (N=17,443).](image)

**Figure 2-52** Percentage of births to women who reported having an episiotomy (N=17,443).
2.7.3.4 Vaginal tear

Figure 2-53 Percentage of births to women who reported vaginal tear (N=17,542).
2.7.3.5 Instrumental (forceps/vacuum) delivery

Figure 2-54 Percentage of births to women who reported instruments (forceps/vacuum) used during delivery (N=17,467).
2.7.3.6 Low birthweight (<2.5kg)

Figure 2-55 Percentage of births to women who reported giving birth to a low birthweight baby (<2.5kg) (N=17,433).
2.7.3.7 High birthweight (more than 4kg)

Figure 2-56 Percentage of births to women who reported a high birthweight baby (>4kg) (N=14,584).
2.7.3.8 Epidural or spinal block

![Graph showing the percentage of births to women who reported receiving an epidural or spinal block during delivery (N=17,567).](image)

Figure 2-57 Percentage of births to women who reported receiving an epidural or spinal block during delivery (N=17,567).
Figure 2-58 Percentage of births to women who reported receiving gas or injection for pain relief during delivery (N=17,573).
2.7.3.10 Premature birth (less than 36 weeks)

Figure 2-59 Percentage of births to women who reported a premature birth (<36 weeks) (N=16,128).
2.7.3.11 Induction of labour

Figure 2-60 Percentage of births to women who reported induction of labour (N=14,680).
2.7.3.12 Admission to Neonatal Intensive Care Unit (NICU)

Figure 2-61 Percentage of births to women who reported that their baby required admission to special care/Neonatal Intensive Care Unit (NICU) (N=14,607).
2.7.3.13 Stillbirth

Figure 2-62 Percentage of births to women who reported a stillbirth (N=14,548).
2.7.3.14 Hypertension during pregnancy

Figure 2-63 Percentage of births to women who reported being diagnosed with or treated for hypertension during pregnancy (N=16,162).
Figure 2-64 Percentage of births to women who reported being diagnosed with or treated for gestational diabetes during pregnancy (N=16,163).
Figure 2-65 Percentage of births to women who reported being diagnosed with or treated for antenatal depression during pregnancy (N=16,149).
Figure 2-66 Percentage of births to women who reported being diagnosed with or treated for postnatal depression during pregnancy (N=16,177).
2.7.3.18 Antenatal anxiety.

Figure 2-67 Percentage of births to women who reported being diagnosed with or treated for antenatal anxiety during pregnancy (N=16,145).
Figure 2-68 Percentage of births to women who reported being diagnosed with or treated for postnatal anxiety during pregnancy (N=16,155).
Breastfeeding

The data below are from 5,368 women who responded to Survey 7 and who had children. The index child refers to the last child born, so for example the first bar refers to the percentage of mothers who breastfed their only child for at least six months, while for women with four children it shows the percentage of mothers who breastfed their youngest child for at least six months.

The percentage of mothers with three or four children who breastfed their youngest child for at least six months was over 70% and slightly higher than for mothers with one child. However, when considering the percentage of women who have breastfed all their children for at least six months, the percentage declined from 69% for those with one child to less than 60% of women with four children.

Figure 2-69 Breastfeeding at Survey 7 (2015) among women with children (N = 4,803).
2.7.4 Childcare

QUESTION: In a normal week, how often do you usually use formal childcare?

Figure 2-70 Use of formal childcare services from Survey 4 to Survey 7 (N = 4,008*).

* Includes only women who have children living with them, and who have answered this question at every survey.

Across Surveys 4 to 7, the majority of mothers in the cohort either did not use formal childcare or used it for less than 5 hours a week.
QUESTION: Is informal child care available to you?

Figure 2-71 Availability of informal childcare from Survey 4 to Survey 7 (N = 4,083*).

* Includes only women who have children living with them, and who have answered this question at every survey.

Most women (60 to 70%) reported that informal childcare was available to them, although the percentage reporting this availability declined to the lower end of this range by Survey 6.
QUESTION: In a normal week, how often do you usually use informal child care?

Figure 2-72: Use of informal childcare from Survey 4 to Survey 7 (N = 3,878*).

* Includes only women who have children living with them, and who have answered this question at every survey.

At Surveys 4 and 5 (ages 28-36) more than 20% of the women reported that they usually used informal childcare for more than 5 hours per week. However by Surveys 6 and 7 (ages 34-42) this figure had declined slightly, with almost 80% of women reporting using this type of care for less than 5 hours per week.
QUESTION: Is formal child care located in an area convenient to you?

![Graph showing convenience of childcare location from Survey 4 to Survey 7](image)

Figure 2-73 Convenience of the location of formal childcare from Survey 4 to Survey 7 (N = 4,100*).

* Includes only women who have children living with them, and who have answered this question at every survey.

Although the majority of the women did not use formal childcare or used it for less than 5 hours per week, this low uptake was not dictated by location, as the vast majority of women reported that a formal childcare facility was conveniently located to them.
QUESTION: Is the cost of formal child care a problem for you?

Figure 2-74 Problem with the cost of formal childcare from Survey 4 to Survey 7 (N=4,091*).

* Includes only women who have children living with them, and who have answered this question at every survey.

At Survey 4, almost 40% of women reported that the cost of formal childcare was a problem for them, with this figure declining to around 30% at Survey 5 and 6. Further information about women’s responses to this question (Is the cost of formal childcare a problem for you?) can be found in Table 5-7 and Table 5-8 in Appendix A.
QUESTION: Are formal child care places available to you?

Figure 2-75 Availability of places for formal childcare from Survey 4 to Survey 7 (N = 4,097*).

* Includes only women who have children living with them, and who have answered this question at every survey.

Over the four surveys, around 65 to 70% of the women who had children living with them indicated that formal childcare places were available for them, with this figure at the lower end of the range by Survey 7.
3 KEY RESEARCH ACHIEVEMENTS SINCE 1996

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

- Publications and reports using data from the 1973-78 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 Australian women as they approach middle age.

3.1 Publications and reports using data from the 1973-78 ALSWH cohort

3.1.1 Publications

Between 1996 and April 2017, ALSWH published 126 papers that used data from the 1973-78 cohort. These publications are listed in Appendix B. The major themes are:

- Reproductive health (41 papers)
- Mental health (36 papers)
- Weight, nutrition and physical activity (32 papers)
- Health service use and systems (25 papers)
- Chronic conditions (20 papers)
- Tobacco, alcohol and other drugs (20 papers)
- Social factors in health and well-being (15 papers)
- Work patterns and work family balance (14 papers)
- Abuse (11 papers)
- Methodology (9 papers)
- Roles and relationships (8 papers)
- Health in rural and remote areas (7 papers)
- Data linkage (5 papers)

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

The themes with four or more papers cited 20 times or more in the international peer reviewed literature were chronic conditions, mental health, reproductive health and weight, nutrition, and physical activity. Particularly highly cited papers included:

- Chiarelli P, Brown WJ & McElduff P. Leaking urine: Prevalence and associated factors in Australian women. 1999, Neurology and Urodynamics, 18(6); 567-577. Citations = 115. In this paper the authors commented that the prevalence of leaking urine in the younger cohort was surprisingly high (13%), and that the association between parity and leaking urine was strongest in the young women, thus lending support to the notion that leaking urine is not necessarily a condition of old age. They also found poorer quality of life in younger women who reported leaking urine.

- Adams J, Sibbritt D, Easthope G & Young A. The profile of women who consult alternative health practitioners in Australia. 2003, Medical Journal of Australia, 1779(6); 297-300. Citations = 107 This paper showed that 19% of young women had consulted a complementary or alternative medicine (CAM) practitioner in the previous 12 months and that CAM users were more likely than non-users to reside in non-urban areas, to report poorer health, have more symptoms and illness, and be higher users of conventional health services.
• Young AF, Powers JR & Bell SL. Attrition in longitudinal studies: Who do you lose? 2006, Australian and New Zealand Journal of Public Health, 30(4); 353-361. Citations = 101. This paper described the risk factors for various types of attrition in the 1973-78 cohort, as well as the older ALSWH cohorts. The 1973-78 cohort had the highest attrition between Surveys 1 and 2 at 32%. Attrition at Survey 2 was highest among younger women (32%), mainly because of participants not being contactable (21%), and lower among the older (16%) and mid-age women (10%). At Survey 1, the Survey 2 non-respondents in the younger cohort were more likely to report having less education, being born in a non-English speaking country and being a current smoker.

• Smith MD, Russell A & Hodges PW. Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. 2006, Australian Journal of Physiotherapy, 52(1); 11-16. Citations = 75. This paper identified that disorders of continence and respiration were strongly related to frequent back pain, unlike obesity and physical activity. The authors suggested that this relationship may be explained by physiological limitations of co-ordination of postural, respiratory and continence functions of trunk muscles.

3.1.2 Reports to the Department of Health

• Since 2001, ALSWH has published 27 reports for the Department of Health that have used data from the 1973-78 cohort. The Study’s major report for 2014, Health and wellbeing of women aged 18-23 in 2013 and 1996: Findings from the Australian Longitudinal Study on Women’s Health, compared the health of women in the 1973-78 cohort when they were aged 18-23 (1996) with the health of women in the 1989-95 cohort when they were the same age (18-23) in 2013.

Reports to the Department have included the following research areas:

• Weight and Physical Activity: Physical activity and the maintenance of health/body weight have significant effects on the prevention and management of chronic disease. ALSWH is well positioned to explore this relationship over time, and four major reports (in 2003, 2004, 2007 and 2012) have examined these issues for the 1973-78 cohort. The main findings of the reports were that women in this cohort have been gaining weight rapidly (an average increase of around 9 kilograms since 1996), show poor levels of adherence to nutritional guidelines, and have declining levels of physical activity. They also showed obese women and less physically active women made more use of health care services than other women.

• Reproductive Health: A major report in 2009 covered contraception use, fertility and infertility, and prenatal and maternal health behaviours - such as diet and physical activity, smoking and alcohol consumption, and prescription medication usage, as well aspirations for children, and motherhood and paid work.

• Alcohol and smoking: Five reports in 2001, 2002 and 2004, including ones prepared for the National Tobacco Strategy and National Alcohol Strategy.

• Violence: Three reports in 2003, 2004 and 2005, including two prepared for the Office of the Status of Women, Department of Prime Minister and Cabinet.

• Alcohol and smoking: Four reports in 2001, 2002 and 2004, including one prepared for the National Tobacco Strategy.

• Mental Health: Four reports including one major report in 2013, and others in 2003, 2007 and 2011 reflect the high prevalence (13-18%) of diagnosed or treated depression within this cohort. The 2013 report (Mental Health: Findings from the Australian Longitudinal Study on Women’s Health) showed that an increase in detection and management of mental health disorders has occurred. In particular, there has been a steady increase in the use of Better Access Scheme (BAS) Medicare items since their introduction in 2006, with data suggesting a substantial decrease in poor mental health for younger women.
• **Health Service Use**: Seven reports, including three major reports in 2011, 2015 and 2016. Some highlights of this research were that young women were more likely to have a Pap screening test if they were married, more highly educated, working full-time, had private health insurance and had up to 3 children. Regarding geographical location, obtaining access to a Pap test was easiest for young women living in major cities and poorest for those living in rural/remote areas. Despite access to a Pap test being slightly harder for women living in regional areas compared to major cities, these women were 10% more likely to have had a Pap test within the past 2 to 5 years, compared to women in major cities.

• **Transitions and trends**: Five reports in 2004, 2005, 2006, 2015 and 2016 have described changes in prevalence of health behaviours, risk factors and health conditions in young women over time, and methodological techniques for analysing change data.

• **Paid Work, Time use and Aspirations**: A report in 2004 highlighted how young women juggle their time by analysing the mix between paid work and other activities. It also presented data on the aspirations of young women (“when I am 35 I would like to....”) with regards to relationship status, motherhood and educational achievement.

In 2008, ALSWH produced a calendar that featured a particular women’s health theme each month. Of these, five featured data from the 1973-78 cohort: these were reproductive health, physical activity, violence, transitions in relationships and employment, and chronic disease.

ALSWH also produced reports between 1996 and 2001 but these primarily concerned cross-sectional analyses of baseline data from the earliest ALSWH surveys.

**Other reports**

ALSWH data have also been used by researchers to produce reports for other agencies. Two examples are the 2005 Social Policy Research Centre Discussion Paper “Impact of young motherhood on education, employment and marriage” (Bradbury, 2005), and the 2005 report by Access Economics “The cost of domestic violence to the economy, Part 1” (Access Economics, 2005).

### 3.2 Contributions to Government Policy

Findings from the 1973-78 ALSWH cohort have directly influenced Federal and State Government Policy in several areas. We briefly feature three recent notable contributions:

- **2013 New South Wales Government’s Health Framework for Women’s Health** (NSW Ministry of Health, 2013)

### 3.2.1 The 2010 Australian Government’s National Women’s Health Policy (Australian Government Department of Health, 2010).

Published research from the ALSWH 1973-78 cohort was cited 34 times in the policy. Evidence from the ALSWH contributed to recommendations concerning reproductive health (outcomes and risks); health behaviours (diet, smoking, alcohol consumption, physical activity) and pregnancy; weight gain after pregnancy; sexual identity and health outcomes; chronic conditions (such as asthma) in young women; risk factors for depression and anxiety; health outcomes associated with depression and anxiety; adherence to healthy behaviour guidelines; mental health and employment, education and occupational outcomes; the impact of interpersonal violence and abuse on young
women’s reproductive health, reproductive outcomes and mental and physical health; young women’s aspirations; transitional moments in young women’s lives when health promotion can be targeted; and the impact of social pressure on health issues such as body weight, self-image and risk taking behaviours.


Published research from the ALSWH 1973-78 cohort was cited 7 times 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.

### 3.2.3 The 2013 New South Wales Government’s Health Framework for Women’s Health (NSW Ministry of Health, 2013).

Published research from the ALSWH 1973-78 cohort contributed to recommendations concerning how socioeconomic inequalities are associated with health conditions and health behaviours in young women which can subsequently affect their risk of developing further health conditions.

### 3.3 Capacity building activities in women’s health research

Between 1996 and 2016, 29 researchers who based their research on the ALSWH 1973-78 cohort have graduated with a masters or PhD degree. The table below outlines these research topics, and highlights a few of the researchers.

<table>
<thead>
<tr>
<th>Student</th>
<th>Topic</th>
<th>Institution</th>
<th>Degree</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jananie Williams</td>
<td>Mental health system costs of adverse birth outcomes</td>
<td>Australian National University</td>
<td>PhD</td>
<td>2016</td>
</tr>
<tr>
<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>Tazeen Majeed</td>
<td>Workforce participation patterns over the life course and the association with chronic diseases – A gendered approach</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2016</td>
</tr>
<tr>
<td>Natalie Holowko</td>
<td>Social inequalities in body weight trajectory among young women: The role of reproductive events</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2016</td>
</tr>
</tbody>
</table>

**Dr Holowko is now a postdoctoral researcher working in breast cancer epidemiology at Karolinka Institute, Sweden.**

<table>
<thead>
<tr>
<th>Student</th>
<th>Topic</th>
<th>Institution</th>
<th>Degree</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Ju</td>
<td>The magnitude, long-term trend and lifestyle risk factors of dysmenorrhea and premenstrual syndrome.</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2016</td>
</tr>
</tbody>
</table>

**Dr Ju is now Assistant Director, Agency for Care Effectiveness, Ministry of Health, Singapore.**

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<thead>
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<th>Student</th>
<th>Topic</th>
<th>Institution</th>
<th>Degree</th>
<th>Completed</th>
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</thead>
<tbody>
<tr>
<td>Ellie Gresham</td>
<td>Women’s reproductive health and nutrition</td>
<td>University of Newcastle</td>
<td>PhD</td>
<td>2016</td>
</tr>
</tbody>
</table>

**Dr Gresham is now Lecturer in Nutrition and Dietetics at Griffith University.**

<table>
<thead>
<tr>
<th>Student</th>
<th>Topic</th>
<th>Institution</th>
<th>Degree</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<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>Student</td>
<td>Topic</td>
<td>Institution</td>
<td>Degree</td>
<td>Completed</td>
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<tr>
<td>Catherine Chojenta</td>
<td>Prevalence, antecedents and perceptions of efficacy of treatments of postnatal depression in Australia.</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2013</td>
</tr>
<tr>
<td>Nicole Au</td>
<td>Obesity in Australia: An economic perspective.</td>
<td>Monash University</td>
<td>PhD</td>
<td>2012</td>
</tr>
<tr>
<td>Dr Nicole Black (nee Au)</td>
<td>is now a Senior Research Fellow at the Centre for Health Economics, Monash University.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kees van Gool</td>
<td>The impact of out-of-pocket costs on the use and distribution of cervical screening services.</td>
<td>University Technology Sydney</td>
<td>PhD</td>
<td>2011</td>
</tr>
<tr>
<td>Melissa Johnstone</td>
<td>Careers or babies: What young Australian women want.</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2011</td>
</tr>
<tr>
<td>Danielle Herbert</td>
<td>Fertility and infertility: Studies in reproductive epidemiology in Australia.</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2011</td>
</tr>
<tr>
<td>Dr Danielle Herbert</td>
<td>is now Manager, Grants &amp; Research Development at the Cancer Institute NSW.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexis Hure</td>
<td>Nutritional influences in pregnancy and postpartum for women and their children.</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2009</td>
</tr>
<tr>
<td>Ingrid Rowlands</td>
<td>Coping with miscarriage: Australian women’s experiences.</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2009</td>
</tr>
<tr>
<td>Toni Lindsay</td>
<td>Changes in young women’s health behaviours in response to traumatic events.</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2009</td>
</tr>
<tr>
<td>Dr Toni Lindsay is now a practising clinical psychologist in Sydney, working with children, adolescents and adults living with chronic health conditions such as cancer, diabetes, cystic fibrosis and gastrointestinal conditions. She is on several professional advisory committees for young people living with cancer, and regularly blogs about issues related to cancer.</td>
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</tr>
<tr>
<td>Catherine France</td>
<td>Battling the Black Dog: An exploration of the strategies used by young Australian women coping with depressive symptoms.</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2008</td>
</tr>
<tr>
<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>
<td>PhD</td>
<td>2008</td>
</tr>
<tr>
<td>Dr Nadine Smith is now a senior researcher with the NSW Bureau of Crime Statistics and Research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liane McDermott</td>
<td>Cigarette smoking among young women</td>
<td>The University of Queensland</td>
<td>PhD</td>
<td>2007</td>
</tr>
<tr>
<td>Dr McDermott is now a Senior Research Officer at the Queensland Centre for Domestic and Family Violence Research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lauren Miller-Lewis</td>
<td>Psychosocial risk factors for pregnancy and pregnancy risk-taking in late adolescent females: A WHA longitudinal inquiry</td>
<td>Flinders University</td>
<td>PhD</td>
<td>2004</td>
</tr>
<tr>
<td>Dr Lauren Miller-Lewis is now an NHMRC Public Health (Australia) Postdoctoral Research Training Fellow at the Research and Evaluation Unit within the Discipline of Paediatrics in the School of Paediatrics and Reproductive Health at the University of Adelaide, and the Women's and Children's Hospital, Women's and Children's Health Network.</td>
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<tr>
<td>Sandra Bell</td>
<td>Stress, health behaviours and the transitions to adulthood among young women</td>
<td>The University of Newcastle</td>
<td>PhD</td>
<td>2003</td>
</tr>
</tbody>
</table>
There are 15 students currently (May 2017) enrolled in Masters or PhD research which is based on data from the ALSWH 1973-78 cohort.

### 3.4 The identification of gaps and priorities for research on the health of Australian women

ALSWH findings on the 1973-78 cohort have contributed to identifying national priorities for research on the health of young women, including:

- How to increase participation by women in healthy lifestyle behaviour (reduced sitting time, increased physical activity, less caloric consumption, maintenance of healthy body weight, and reduced smoking and risk taking behaviour concerning drugs and alcohol).
- How to optimally utilise the internet, in particular social media, to increase young women’s awareness of health issues and healthy behaviour practices.
- Identifying domestic violence and abuse before it becomes detrimental to young women’s health.
- Identification of factors to increase labour force participation.
- Identification of ways to reduce young women’s risk of sexually transmitted infections and risky health behaviours which, if not identified and treated early enough, can impact on future fertility.
- Early identification of mental health issues and ways to promote early treatment.
- How to assist young women manage and balance work and family commitments so as to minimise negative impacts on mental and physical health.

Data collected from the first seven surveys of the 1973-78 cohort, along with current and future data collected from the newest cohort of young women (born 1989-95), will continue to enable the study to provide unparalleled data on the early predictors of many health outcomes. Future surveys of the 1973-78 cohort will provide valuable information on women’s health as the cohort enter middle age and go through menopause.

ALSWH is ideally placed to address and inform health policy and priorities and this is principally due to:

- The longitudinal design of the ALSWH.
- Large number of participants in the ALSWH cohorts from across Australia, including rural and remote areas.
- Comprehensive assessment of socio-demographic, health, social, lifestyle and health service use factors.
- Linkage to administrative health and health service use records.
In summary, as data collection and analysis continues, ALSWH findings from the 1973-78 and other cohorts will increasingly contribute detailed evidence to support the development of health policy and inform the type, timing, and targeting of preventive health initiatives and health services.

4 REFERENCES


## 5 APPENDIX A – ADDITIONAL DETAIL FOR SELECTED TRAJECTORIES

Table 5-1 Dissatisfaction with weight, ALSWH 1973-78 cohort from Survey 2 to Survey 7, by BMI category.

<table>
<thead>
<tr>
<th>BMI Category</th>
<th>Dissatisfaction with weight in last month?</th>
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<tr>
<td></td>
<td>Survey 1</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Underweight</td>
<td>118</td>
</tr>
<tr>
<td>2 (Slightly)</td>
<td>61</td>
</tr>
<tr>
<td>3</td>
<td>66</td>
</tr>
<tr>
<td>4 (Moderately)</td>
<td>27</td>
</tr>
<tr>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>6 (Markedly)</td>
<td>24</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Healthy weight</td>
<td>461</td>
</tr>
<tr>
<td>2 (Slightly)</td>
<td>358</td>
</tr>
<tr>
<td>3</td>
<td>606</td>
</tr>
<tr>
<td>4 (Moderately)</td>
<td>318</td>
</tr>
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<td>5</td>
<td>518</td>
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<tr>
<td>6 (Markedly)</td>
<td>309</td>
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<tr>
<td>7</td>
<td>293</td>
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<tr>
<td></td>
<td>Survey 1</td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td></td>
<td>N</td>
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<tr>
<td>Overweight</td>
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<tr>
<td>1</td>
<td>12</td>
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<tr>
<td>2 (Slightly)</td>
<td>17</td>
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<td>4 (Moderately)</td>
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<td>6 (Markedly)</td>
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<td>Obese</td>
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<td>2 (Slightly)</td>
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Table 5-2 Levels of Physical Activity in the ALSWH 1973-78 cohort from Survey 2 to Survey 7, by BMI category.

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Measurement of physical activity is based on generic Metabolic Equivalent (MET) values of 3.33 for walking and moderate activity, and 6.66 for vigorous activity, and a cut point of 500 MET.mins/week (150 minutes x 3.33 METs, or 75 minutes x 6.66 METs or a combination of moderate and vigorous activities). Level of activity is calculated from responses to both questions and is categorised as inactive (<33.3 MET.mins/week); low (33.3 - <500 MET.mins/week), moderate (500 - <1000 MET.mins/week) or high (≥1000 MET.mins/week). This physical activity measure has been shown to have acceptable reliability and validity. 1. Brown WJ, Burton NW, Marshall AL, Miller YD. Reliability and validity of a modified self administered version of the Active Australia physical activity survey in a sample of mid-age women. *Australian and New Zealand Journal of Public Health* 2008; 32(6): 535-541.
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*Table 5-5 Ratings of access to a specialist if needed, ALSWH 1973-78 cohort from Survey 2 to Survey 6, by area of residence (ARIA+).*
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<td>Very good</td>
<td>28</td>
<td>23.9</td>
<td>31</td>
<td>24.4</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>35</td>
<td>29.9</td>
<td>41</td>
<td>32.3</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>21</td>
<td>17.9</td>
<td>20</td>
<td>15.7</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>9</td>
<td>7.7</td>
<td>13</td>
<td>10.2</td>
<td>11</td>
</tr>
</tbody>
</table>
### Table 5-7: Assessment of childcare costs, ALSWH 1973-78 cohort from Survey 4 to Survey 7, by ability to manage on income.

<table>
<thead>
<tr>
<th>Ability to manage on income</th>
<th>Is cost of childcare a problem?</th>
<th>Survey 4</th>
<th>Survey 5</th>
<th>Survey 6</th>
<th>Survey 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Impossible</td>
<td>Yes</td>
<td>17</td>
<td>56.7</td>
<td>14</td>
<td>53.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>10</td>
<td>33.3</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>3</td>
<td>10.0</td>
<td>5</td>
<td>19.2</td>
</tr>
<tr>
<td>Difficult always</td>
<td>Yes</td>
<td>186</td>
<td>65.0</td>
<td>194</td>
<td>58.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>69</td>
<td>24.1</td>
<td>79</td>
<td>23.9</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>31</td>
<td>10.8</td>
<td>57</td>
<td>17.3</td>
</tr>
<tr>
<td>Difficult sometimes</td>
<td>Yes</td>
<td>355</td>
<td>45.2</td>
<td>436</td>
<td>44.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>278</td>
<td>35.4</td>
<td>372</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>152</td>
<td>19.4</td>
<td>183</td>
<td>18.5</td>
</tr>
<tr>
<td>Not too bad</td>
<td>Yes</td>
<td>233</td>
<td>27.7</td>
<td>304</td>
<td>23.0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>416</td>
<td>49.4</td>
<td>748</td>
<td>56.7</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>193</td>
<td>22.9</td>
<td>268</td>
<td>20.3</td>
</tr>
<tr>
<td>It is easy</td>
<td>Yes</td>
<td>58</td>
<td>18.2</td>
<td>70</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>200</td>
<td>62.9</td>
<td>404</td>
<td>73.7</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>60</td>
<td>18.9</td>
<td>74</td>
<td>13.5</td>
</tr>
</tbody>
</table>
Table 5-8 Assessment of childcare costs, ALSWH 1973-78 cohort from Survey 4 to Survey 7, by area of residence (ARIA +).

<table>
<thead>
<tr>
<th>ARIA+ Group</th>
<th>Is cost of childcare a problem?</th>
<th>Survey 4</th>
<th>Survey 5</th>
<th>Survey 6</th>
<th>Survey 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>Major Cities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>435</td>
<td>39.4</td>
<td>524</td>
<td>31.5</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>457</td>
<td>41.4</td>
<td>849</td>
<td>51.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>211</td>
<td>19.1</td>
<td>292</td>
<td>17.5</td>
</tr>
<tr>
<td><strong>Inner Regional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>272</td>
<td>39.0</td>
<td>313</td>
<td>33.4</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>299</td>
<td>42.8</td>
<td>448</td>
<td>47.9</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>127</td>
<td>18.2</td>
<td>175</td>
<td>18.7</td>
</tr>
<tr>
<td><strong>Outer Regional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>114</td>
<td>31.9</td>
<td>142</td>
<td>30.4</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>165</td>
<td>46.2</td>
<td>226</td>
<td>48.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>78</td>
<td>21.8</td>
<td>99</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Remote/Very Remote</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>26</td>
<td>28.0</td>
<td>35</td>
<td>31.3</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>45</td>
<td>48.4</td>
<td>59</td>
<td>52.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>22</td>
<td>23.7</td>
<td>18</td>
<td>16.1</td>
</tr>
</tbody>
</table>
6 APPENDIX B – PUBLISHED PAPERS USING 1973-78 COHORT DATA
(Current for May 2017).

6.1 MENTAL HEALTH


### 6.2 REPRODUCTIVE HEALTH


6.3 WEIGHT, NUTRITION AND PHYSICAL ACTIVITY


Moran LJ, Ranasinha S, Zoungas S, McNaughton SA, Brown WJ & Teede HJ. (2013). The contribution of diet, physical activity and sedentary behaviour to body mass index in women with and without polycystic ovary syndrome. Human Reproduction, 28(8); 2276-2283.


Smith MD, Russell A & Hodges PW. (2006). Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. *Australian Journal of Physiotherapy, 52*(1); 11-16.


Ball K & Mishra GD. (2006). Whose socioeconomic status influences a woman’s obesity risk: Her mother’s, her father’s or her own? *International Journal of Epidemiology, 35*(1); 131-138.


6.4 HEALTH SERVICE USE AND SYSTEMS


Powers J, Loxton D, O'Mara A, Chojenta C & Ebert L. (2013). Regardless of where they give birth, women living in non-metropolitan areas are less likely to have an epidural than their metropolitan counterparts. *Women and Birth, 26*.


### 6.5 CHRONIC CONDITIONS


Moran LJ, Ranasinha S, Zoungas S, McNaughton SA, Brown WJ & Teede HJ. (2013). The contribution of diet, physical activity and sedentary behaviour to body mass index in women with and without polycystic ovary syndrome. Human Reproduction, 28(8); 2276-2283.


Smith MD, Russell A & Hodges PW. (2006). Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. Australian Journal of Physiotherapy, 52(1); 11-16.


6.6 WORK PATTERNS AND WORK-FAMILY BALANCE


6.7 TOBACCO, ALCOHOL AND OTHER DRUGS


McDermott L, Dobson A & Owen N. (2009). Determinants of continuity and change over 10 years in young women’s smoking. Addiction, 104(3); 478-487.


### 6.8 SOCIAL FACTORS IN HEALTH AND WELLBEING


6.9 ROLES AND RELATIONSHIPS


Ball K & Mishra GD. (2006). Whose socioeconomic status influences a woman’s obesity risk: Her mother’s, her father’s or her own? International Journal of Epidemiology, 35(1); 131-138.


6.10 METHODOLOGY


110


### 6.11 ABUSE


### 6.12 DATA LINKAGE


### 6.13 HEALTH IN RURAL AND REMOTE AREAS


Powers J, Loxton D, O’Mara A, Chojenta C & Ebert L. (2013). Regardless of where they give birth, women living in non-metropolitan areas are less likely to have an epidural than their metropolitan counterparts. *Women and Birth, 26*; e77-e81.


7 APPENDIX C – REPORTS PREPARED USING 1973-78 COHORT DATA

7.1 Major Reports (2006 – 2016)


113


### 7.2 Other reports

#### 7.2.1 Weight and Physical Activity


#### 7.2.2 Alcohol and smoking


#### 7.2.3 Violence


#### 7.2.4 Mental Health


#### 7.2.5 Health Service Use


• **Screening participant rates on non-English speaking backgrounds: Results from the Australian Longitudinal Study on Women’s Health.** (2001). ALSWH. Report prepared for Breastscreen Queensland and Queensland
Health. (Data for responses to questions concerning cancer screening behaviour from Survey 2 of the 1973-78 cohort (in 2000 when the cohort were aged 22-27 years) is presented in this report.)

7.2.6 Other

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