

# **Australian Longitudinal Study on Women's Health**

**1946-51 COHORT**

**SUMMARY 1996 – 2013**

April 2015

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# Table of Contents

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2</b>	<b>INTRODUCTION AND BACKGROUND .....</b>	<b>3</b>
<b>3</b>	<b>COHORT TRAJECTORIES 1996 – 2013 .....</b>	<b>4</b>
3.1	Sociodemographics .....	4
3.1.1	Area of residence .....	4
3.1.2	Employment /Occupation .....	5
3.1.3	Marital Status/Living arrangements .....	9
3.1.4	Ability to manage on income .....	10
3.1.5	Caring .....	11
3.2	Lifestyle .....	13
3.2.1	Weight and Body Mass Index (BMI).....	13
3.2.2	Physical Activity and Sitting Time.....	15
3.2.3	Alcohol use and smoking .....	18
3.3	Mental Health: Depression, anxiety, optimism, suicidal ideation and stress.....	20
3.3.1	Depression .....	20
3.3.2	Centre for Epidemiologic Studies Depression Scale - 10 item version (CESD10).....	21
3.3.3	Anxiety .....	22
3.3.4	Optimism: Revised Life Orientation Test (LOT-R) .....	23
3.3.5	Suicidal Ideation and Self-Harm .....	24
3.3.6	Stress.....	26
3.4	Physical health conditions .....	27
3.4.1	Self Rated Health.....	27
3.4.2	Hypertension.....	28
3.4.3	Diabetes .....	29
3.4.4	Heart disease.....	30
3.4.5	Stroke .....	31
3.4.6	Asthma .....	32
3.4.7	Arthritis .....	33
3.4.8	Breast cancer.....	34
3.5	Reproductive health.....	35
3.5.1	Menopause status.....	35
3.6	Health service use .....	36
3.6.1	Doctors (General Practitioners and specialists).....	36
3.6.2	Screening.....	43
3.6.3	Hospitals.....	45
3.6.4	Health insurance .....	47
<b>4</b>	<b>KEY RESEARCH ACHIEVEMENTS SINCE 1996.....</b>	<b>48</b>
4.1	Publications and reports using data from the 1946-51 ALSWH cohort.....	48
4.1.1	Publications.....	48
	Weight, nutrition and physical activity .....	48
	Menopause .....	49
	Complementary and Alternative Medicines .....	49
	Caring .....	49
	Abuse .....	49
	Other .....	49
4.1.2	Reports to the Department of Health.....	49
	MAJOR REPORTS.....	49
	OTHER REPORTS.....	50
4.2	Contributions to Government Policy .....	51
4.2.1	The 2010 Australian Government’s National Women’s Health Policy .....	51
4.2.2	The 2014 Australian Government’s Physical Activity Guidelines.....	51
4.3	Capacity building activities in women’s health research.....	52

4.4	The identification of gaps and priorities for research on the health of mid-aged Australian women .....	54
<b>5</b>	<b>APPENDIX A: PUBLICATIONS USING 1946-51 COHORT DATA .....</b>	<b>55</b>
<b>6</b>	<b>APPENDIX B: Reports prepared for the Department of Health and other agencies .....</b>	<b>67</b>
6.1	Major Reports (2006 – 2013) .....	67
6.2	Other reports .....	68
	Urinary incontinence.....	68
	Caring .....	68
	Employment and retirement .....	68
	Other .....	68

## 1 EXECUTIVE SUMMARY

The Australian Longitudinal Study on Women's Health (ALSWH) is a longitudinal population-based survey of over 60,000 Australian women in four cohorts. This report is a summary of data for 13,715 women in the cohort born 1946-51 who completed the baseline survey in 1996 (aged 45-50 years), and surviving women for each survey point up to Survey 7 in 2013 (aged 62-67).

**Sociodemographic characteristics:** Over the past 17 years of the study, the majority (about 80%) of women have resided in cities or inner regional areas, with around 20% living in outer regional or remote/very remote areas. At Survey 7, 75% of the women were married or living in a de facto relationship, 9% of the women had caring responsibility for someone living with them while 18% cared for a person not living with them.

At Survey 1 in 1996, almost 80% were employed in the labour force with almost 40% of them in part time work. By Survey 7 in 2013, 45% of the women were in labour force with 30% working part time and 15% full time, and 21% of the women were in managerial or professional occupation. At Survey 4 (aged 53-58) almost 60% of the women classified themselves as not retired. This declined over time so that by Survey 7, 20% reported that they were not retired and 53% were fully retired. Across the 17 years of the survey, most women found it easy or not too bad to manage on their income. However, by Survey 7, about 21% of the women reported it was sometimes difficult, with around 9% who consistently reported that it was always difficult or impossible.

**Lifestyle:** At Survey 1, most of the women were in the acceptable weight categories. The women's weight increased over time (by an average of 5kg over the 17 years) so that by the time the women were aged 62-67 the majority were overweight or obese (63%). Most women reported being moderately or highly physically active over the 17 years. However, at least 40% of the women recorded low levels of activity or were inactive at every 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-D) 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 17 years of the survey, while reporting of stress decreased from Survey 1 to Survey 6. Further the percentage of women reporting suicidal thoughts and self-harming behaviours declined between Survey 3 and Survey 7.

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 9% by Survey 7.

**Physical health:** At Survey 1, when the women were aged 45-50 years, 55% rated their own health as excellent or very good, and by Survey 7, aged 62-67 years, this had declined somewhat to 50%. However, the percentage of women who rated their health as fair or poor increased from 5% to 10% 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 7 almost half of the women reported that they had been diagnosed or treated for hypertension. Similarly the percentage of women diagnosed with diabetes rose progressively from under 2.5% at Survey 1 to almost 12% at Survey 7.

The study period also covers the time when most women experience the menopausal transition. At Survey 1, when most of the women were in their late forties, only a few percent were categorised as post-menopausal (though more than 20% had surgical menopause). By Survey 6 when the women were in their early sixties, over 60% were post-menopausal and 33% had surgical menopause. Hormone therapy use increased from Survey 1 to Survey 3 and then decreased over the following three surveys.

**Health services use:** At Survey 1, when the women were aged 45 to 50 years, almost 80% of the women reported consulting a 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 62-67, 15% of the women consulted their GP 7 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 7, almost 25% 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. By Survey 7, 75% reported access was good to excellent. Further, most women at Survey 2 (90%) 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 7, almost nine out of ten women rated access to a female GP as good to excellent. With increasing age, the women required more consultations with a specialist medical practitioner and by Survey 7, 20% of the women reported three or more consultations in the previous 12 months. Access to specialists was rated as good to excellent by 90% of women at Survey 7. 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 to 42% at Survey 7, 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 rise across a range of chronic conditions, such as hypertension and diabetes, highlights a rising demand for health services. This is likely 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. In contrast, the demand for mental health services for this cohort appears likely to have stabilised and may decline with age.

Of specific concern, and distinct from older age groups of Australian women, is the high prevalence of overweight or obese women in this cohort, with established increased risks for a range of adverse health outcomes including Type 2 diabetes 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 and early diagnosis may be essential in reducing the likely additional health services demands.

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 with 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 60,000 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 seven 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 response rates from 1996 to 2013**

Survey 1 (1996)	Survey 2 (1998)	Survey 3 (2001)	Survey 4 (2004)	Survey 5 (2007)	Survey 6 (2010)	Survey 7 (2013)
Age 45-50	Age 47-52	Age 50-55	Age 53-58	Age 56-61	Age 59-64	Age = 62-67
N = 13,715	N = 12,338	N = 11,226	N = 10,905	N = 10,638	N = 10,011	N = 9,151

The seven 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:

- Socio-demographic 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 – 2013

Trajectories show the cohort’s responses to questions asked on surveys during the period 1996 to 2013. 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 3-4), only participants who answered the relevant occupation questions at Survey 3, Survey 4, Survey 5, Survey 6 and Survey 7 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, available at: [www.alswh.org.au](http://www.alswh.org.au)

#### 3.1 Sociodemographics

##### 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?

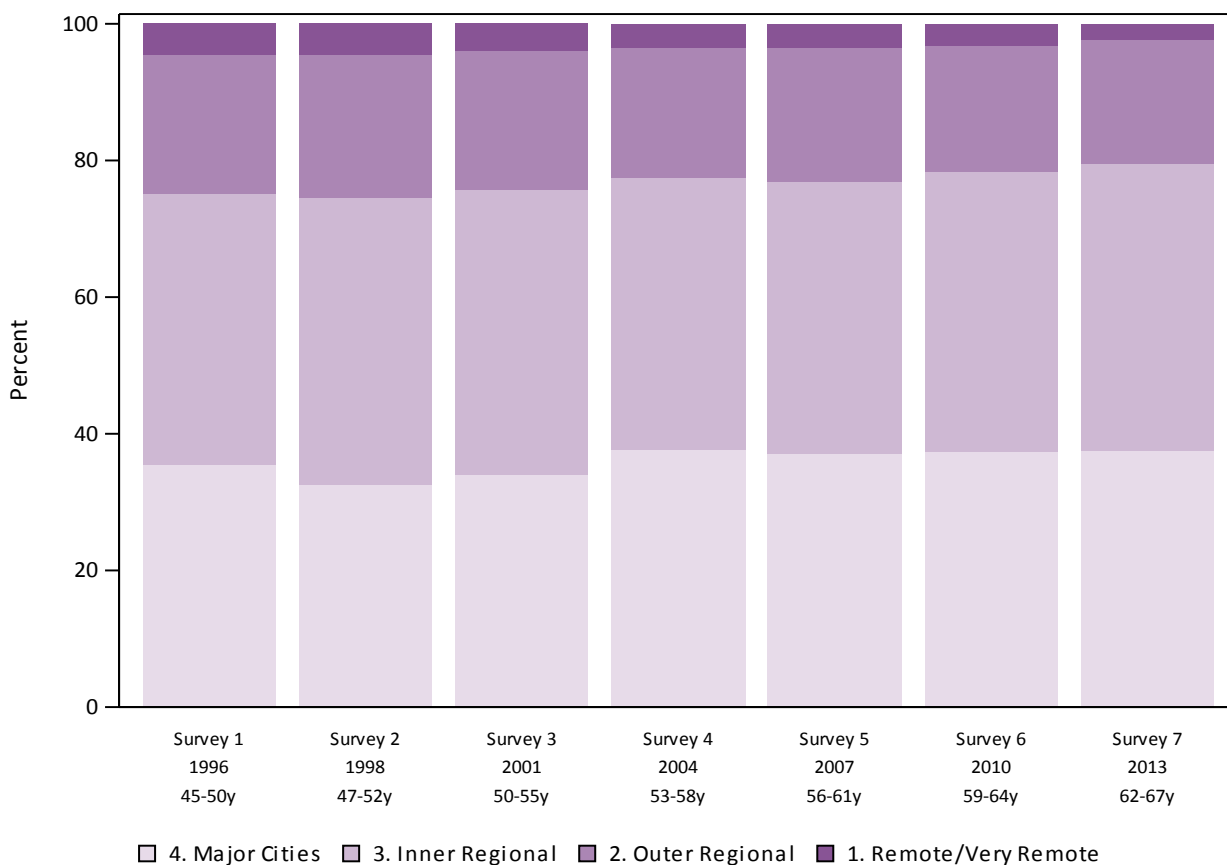


Figure 3-1 Participant area of residence at time of survey from Survey 1 to Survey 7 (N=7,429).

The percentages of women living in different area of residence categories remained stable from the baseline survey when the women aged 45 to 50 years through to 2013 (62 to 67 years), with slightly less than 80% of women living in major cities or inner regional areas and about 25% living in outer regional or remote/very remote areas.

### 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.

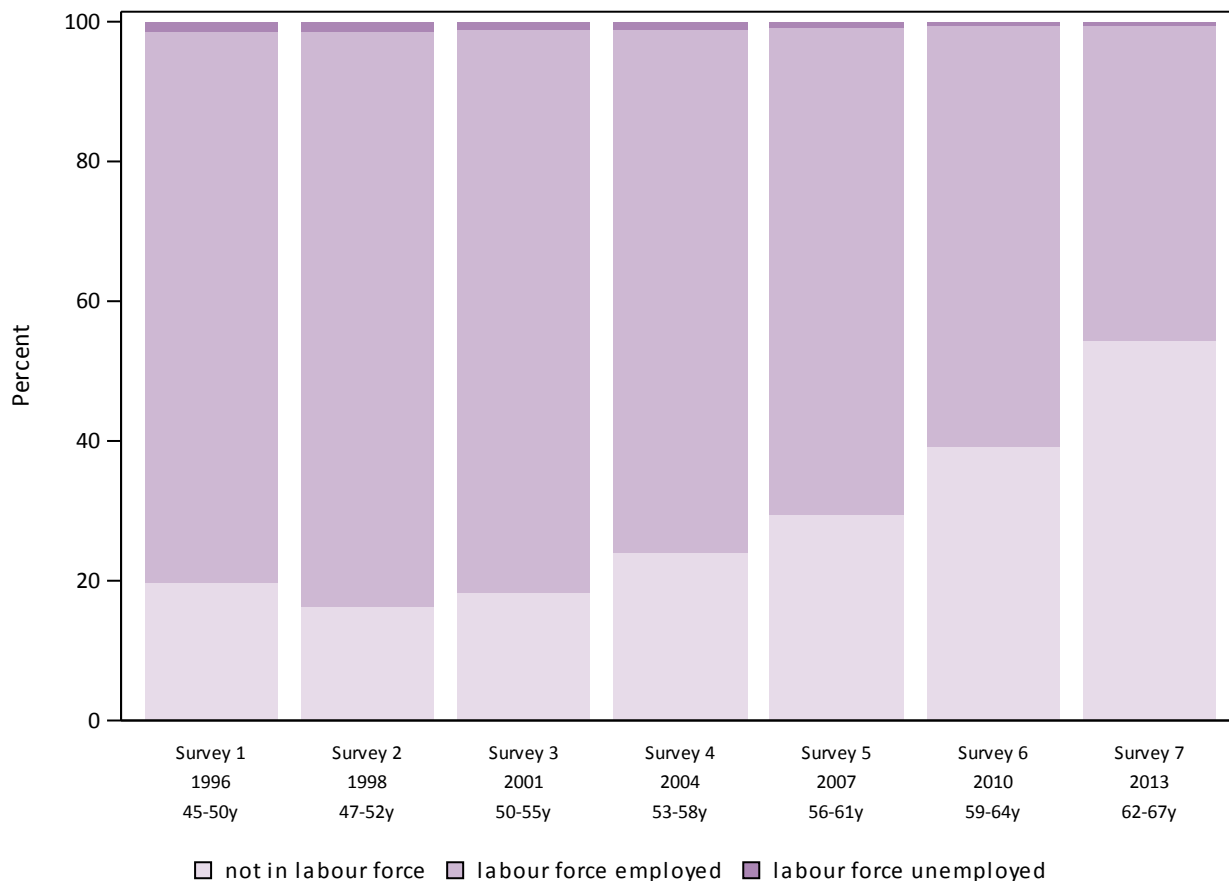
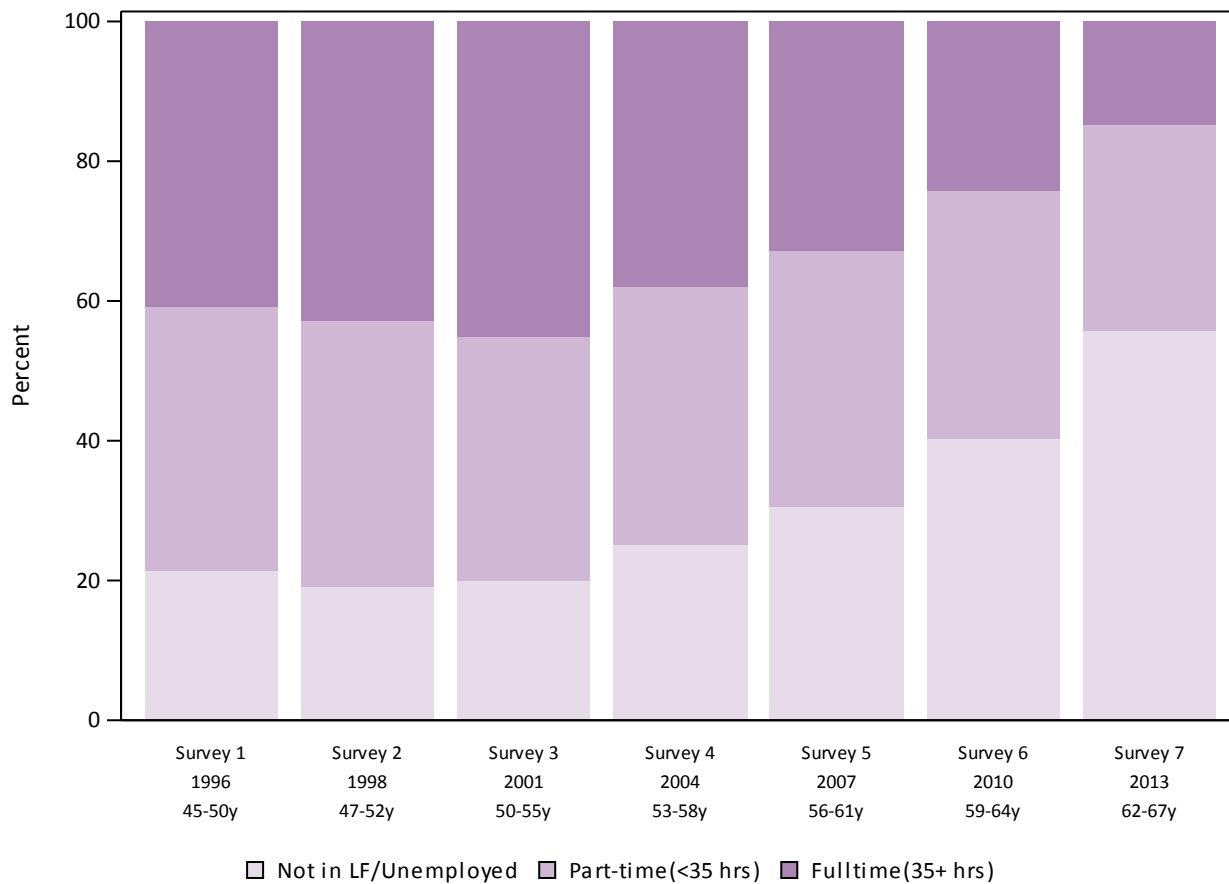


Figure 3-2 Participation in labour force (N= 7,629).



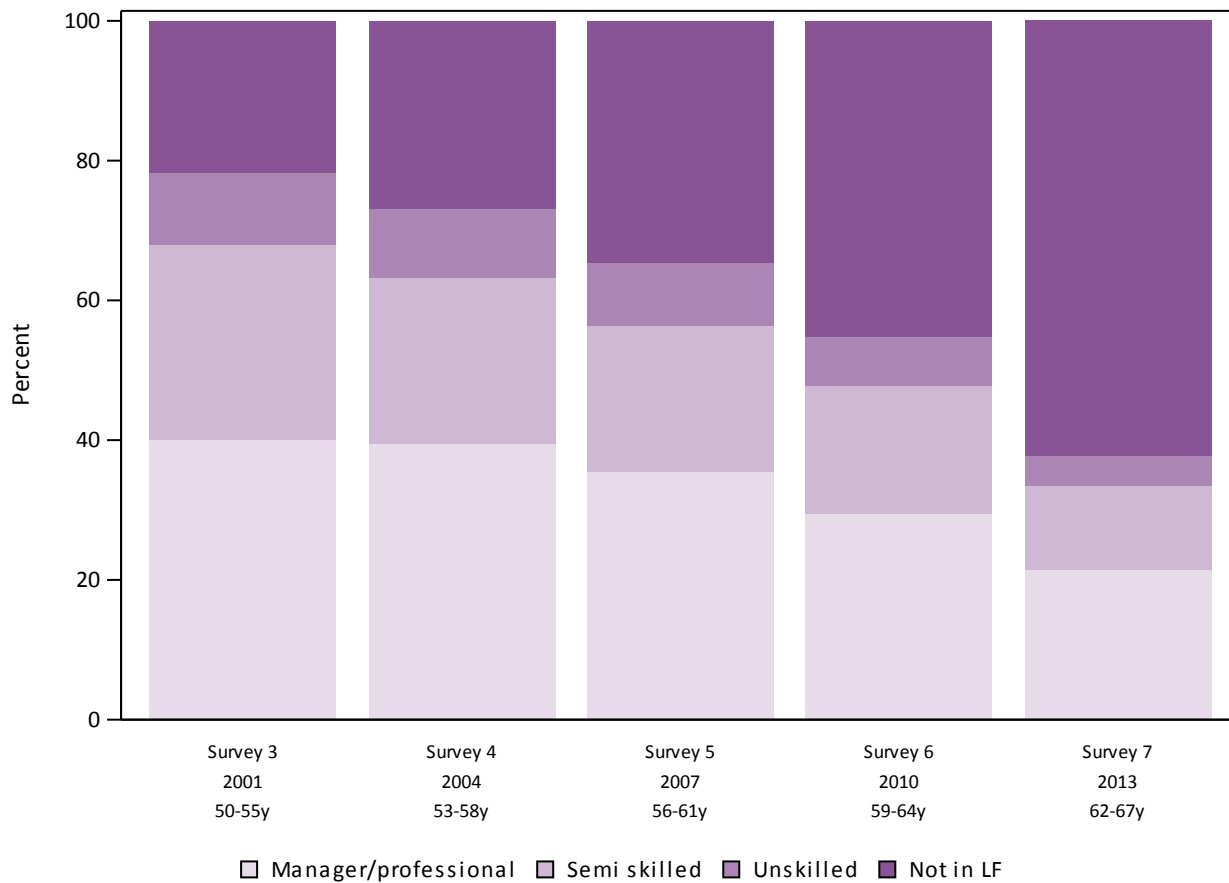
At Survey 1 when the women were aged 45 to 50, almost 80% were employed in the labour force. Over time, the number of women who continued to be in the labour force declined so that by Survey 7, when the women were aged 62 to 67, about half of the women remained outside their home. Across all of the surveys, very few women reported being unemployed (i.e. not employed and seeking paid work).



**Figure 3-3 Participation in labour force by hours worked per week (N= 6,925).**

Between Survey 1 and Survey 7, the number of women who continued full time participation in the labour force declined. By Survey 7, more than half of the women were either retired and not in the labour force or were unemployed. Nonetheless about 15% continued full time work and about 30% worked part time. The largest change in hours worked over time was in the full time category.

QUESTION: What is your main occupation?



**Figure 3-4 Occupation category from Survey 3 to Survey 7 (N=5,557).**

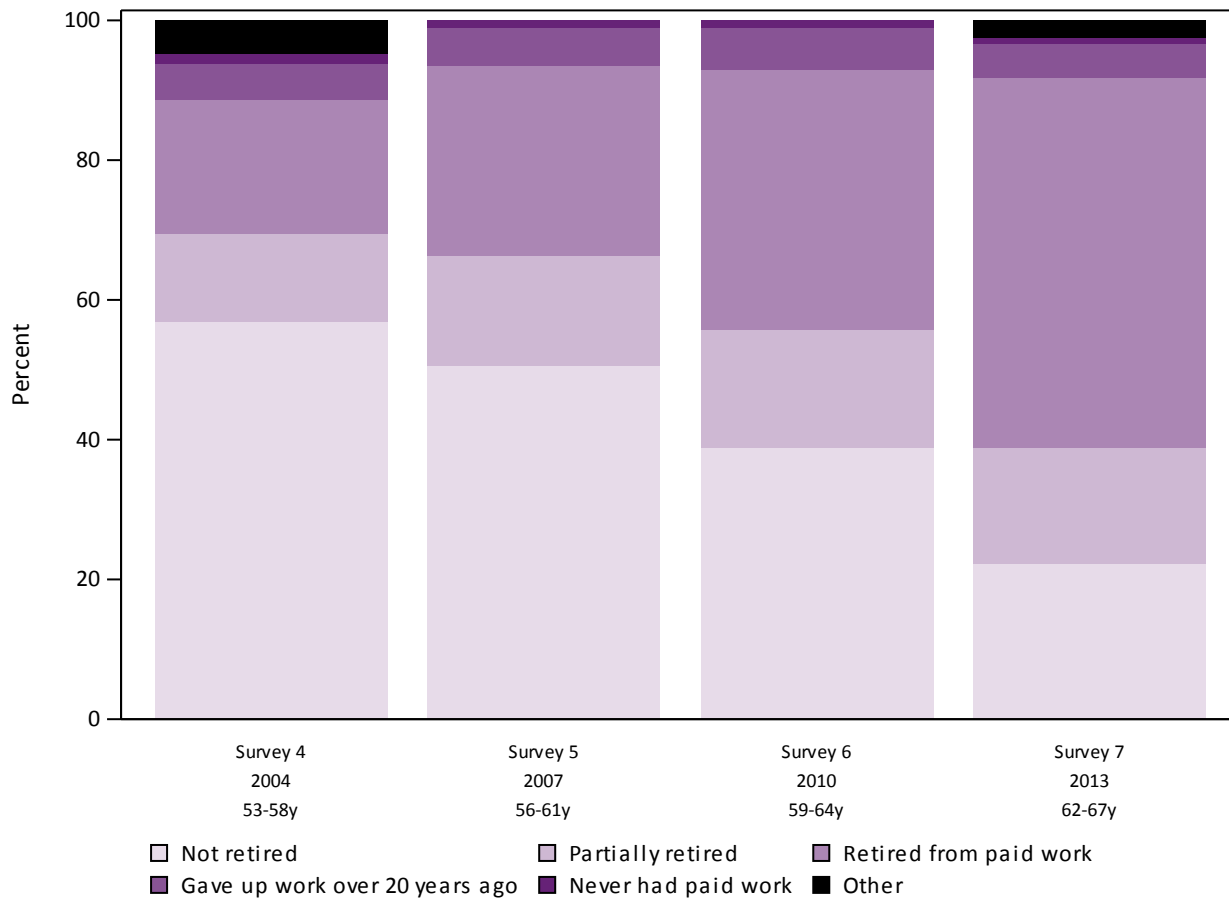
*Note: Occupation questions asked on Surveys 1 and 2 are not comparable with those asked on subsequent surveys, and have not been included.*

At Survey 3, managerial or professional roles were the most common occupations (40%), followed by semi-skilled occupations (25%), unskilled work (10%) and 25% 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 7.



**Figure 3-5 Retirement transitions from Survey 4 to Survey 7 (N= 7,760).**

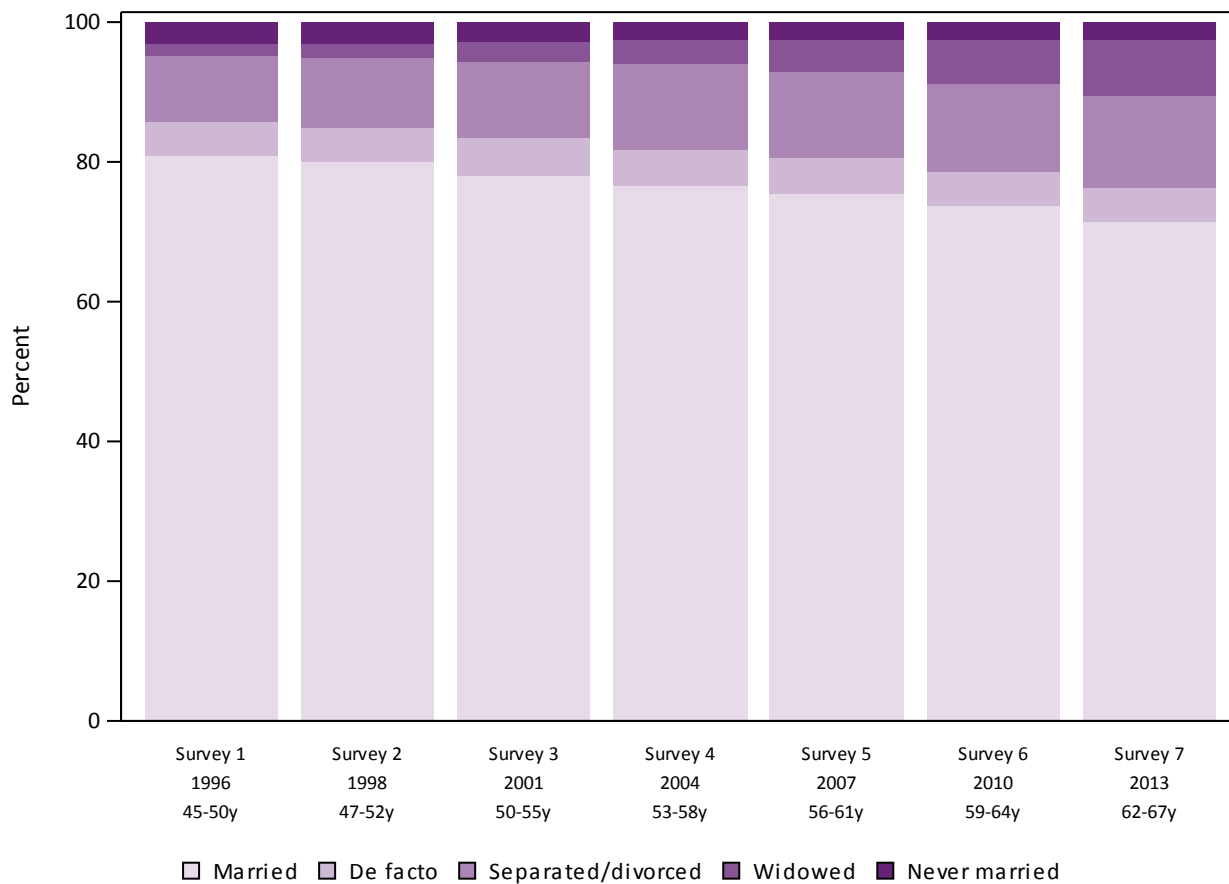
Almost 60% of the women classified themselves as “not-retired” at Survey 4, when they were aged 53 to 58 years and this proportion declined over subsequent surveys so that by Survey 7, when the women were aged 62 to 67 years, only 20% reported that they were not retired and 53% reported they were fully retired.

### 3.1.3 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.



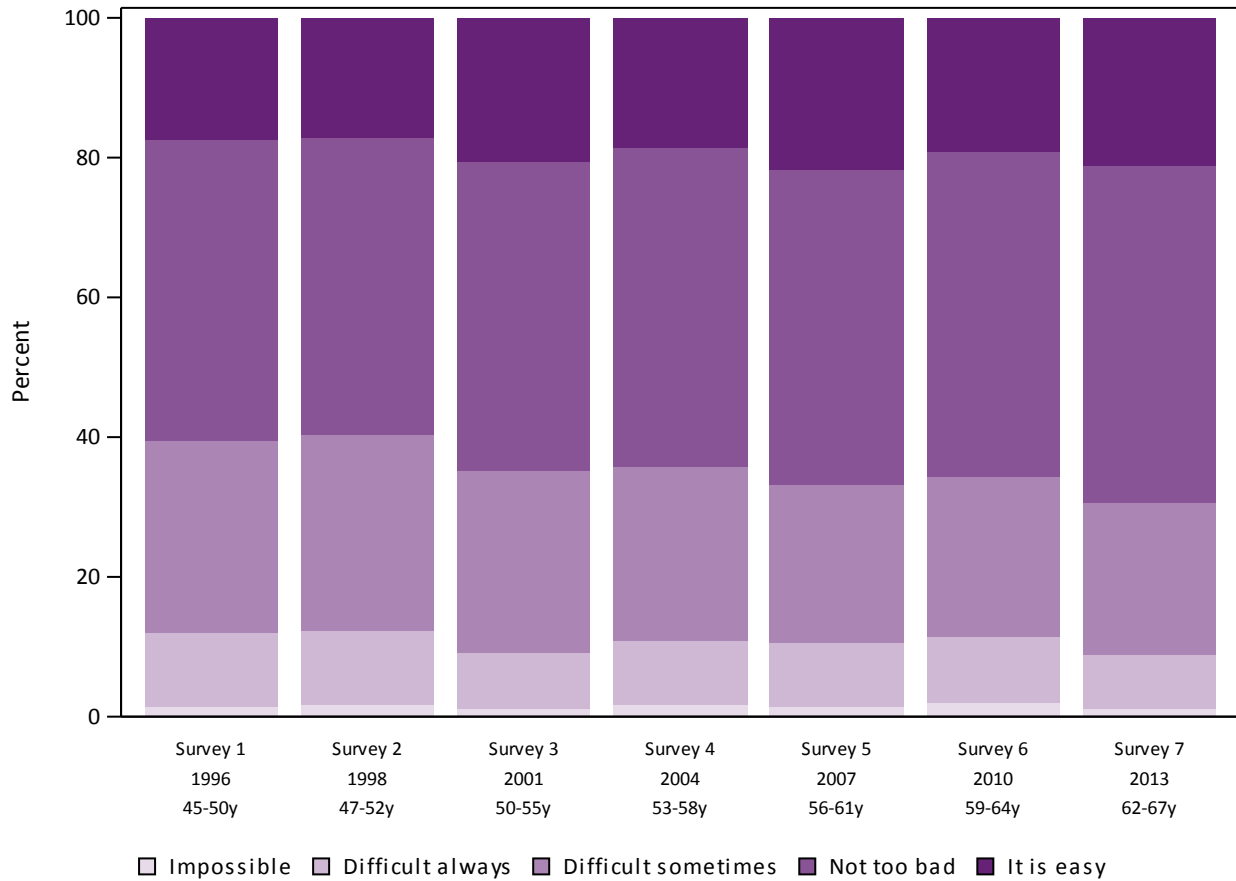
**Figure 3-6 Marital Status from Survey 1 to Survey 7 (N=7,318).**

At age 45 to 50 years, over 85% of the women were married or living in a de facto relationship. By the time they were aged 62 to 67 years, this figure had decreased to about 75%, with an increasing percentage from Survey 1 who were separated or divorced (13%) or widowed (8%).

### 3.1.4 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

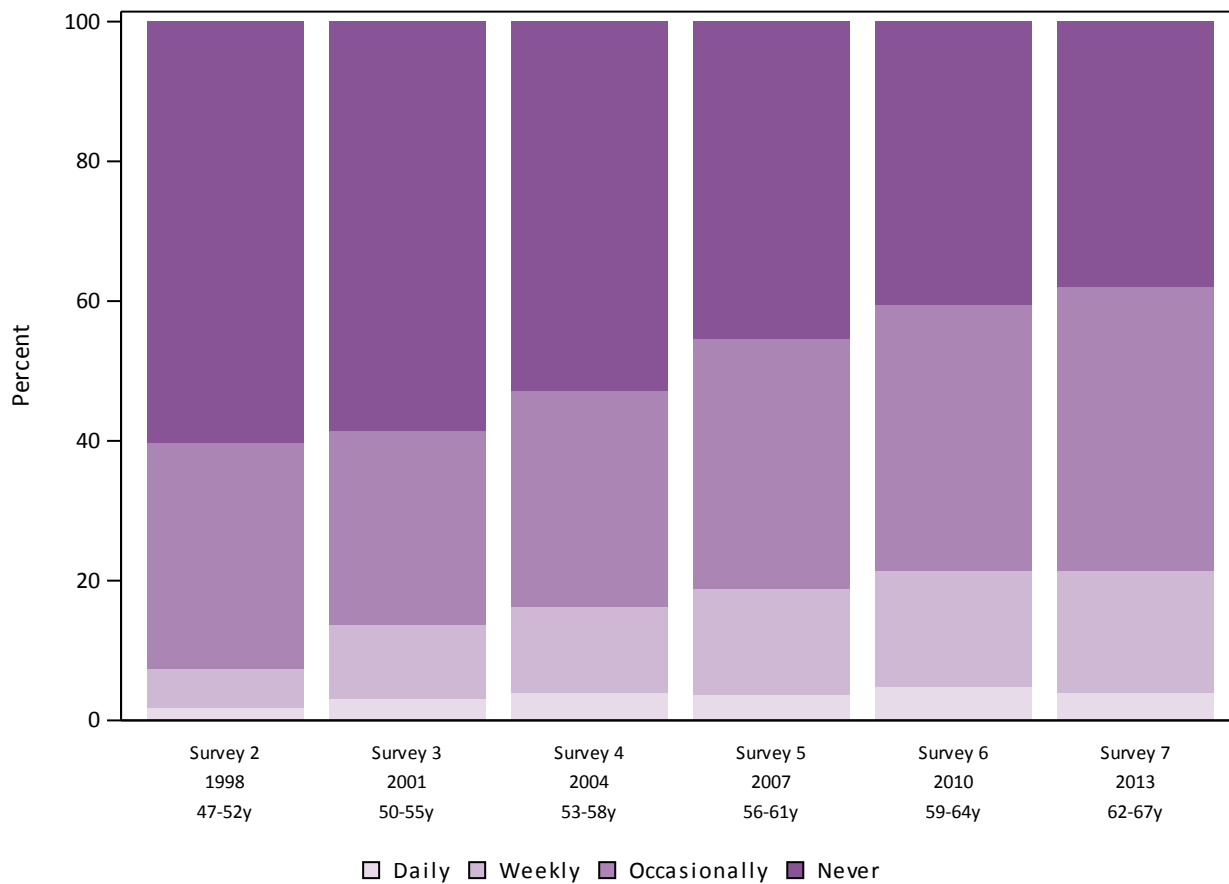


**Figure 3-7 Ability to manage on income from Survey 1 to Survey 7 (N=7,152).**

The majority of women found it ‘easy’ or ‘not too bad’ to manage on their income through the study period and this proportion increased so that by Survey 7 about 21% of the women reported that it was “difficult sometimes”, with around 9% consistently reporting that it was “difficult always” or “impossible” to manage on their income. As these latter two groups of women reach and pass the traditional retirement age of 65 years, it will be important to track their economic health and wellbeing and their ability to access health services.

### 3.1.5 Caring

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

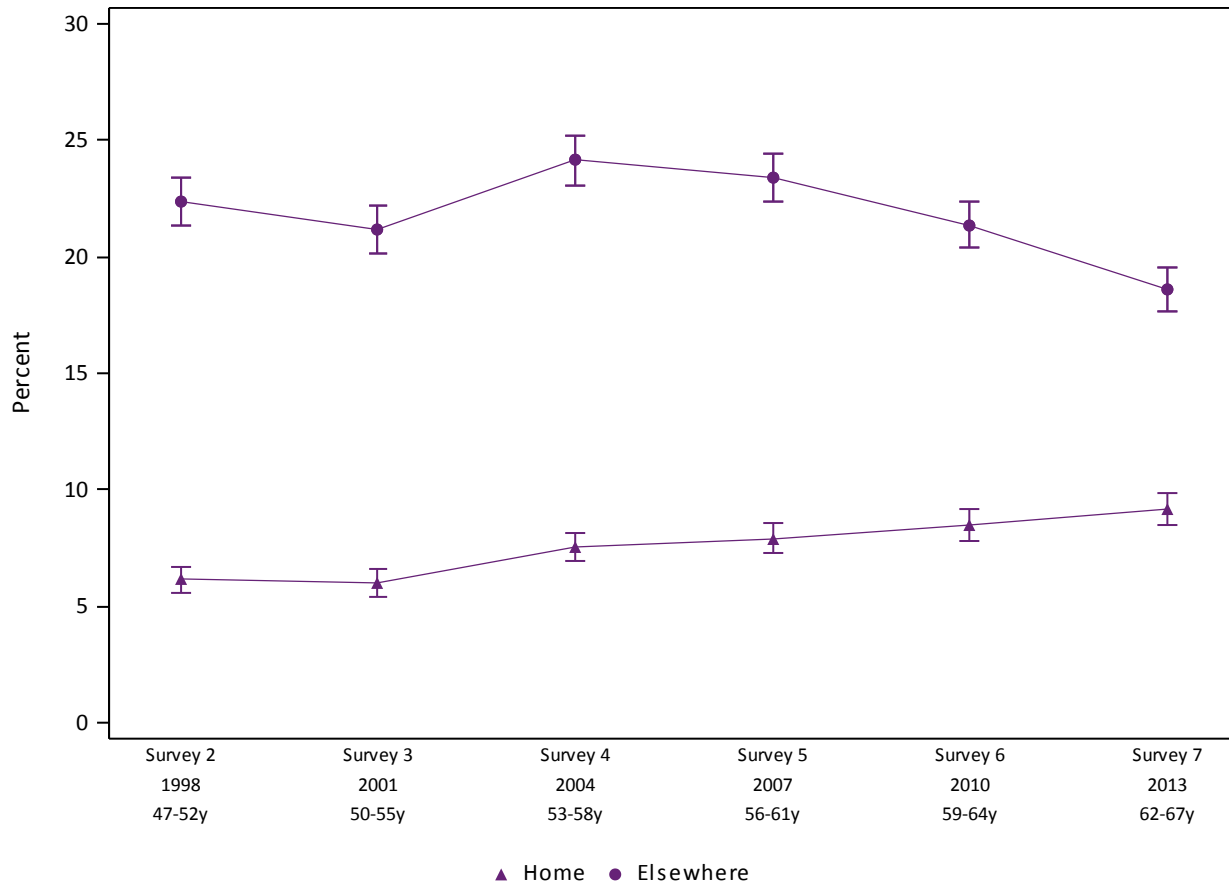


**Figure 3-8 Women providing unpaid care for grandchildren or other children (N= 7,202).**

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 40% at Survey 7. 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 7, 15% provided weekly care and 45% 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= 6,635) and for someone who does not live with them (N=6,179).**

*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 7, when the women were 62 to 67 years, 9% had caring responsibilities within their home – an increase of 3% from Survey 3, when women were aged 50-55. 22% of the women at Survey 2 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 18% at Survey 7. The decline in the proportion of women reporting this activity may reflect that fewer women were caring for parents (who had died).

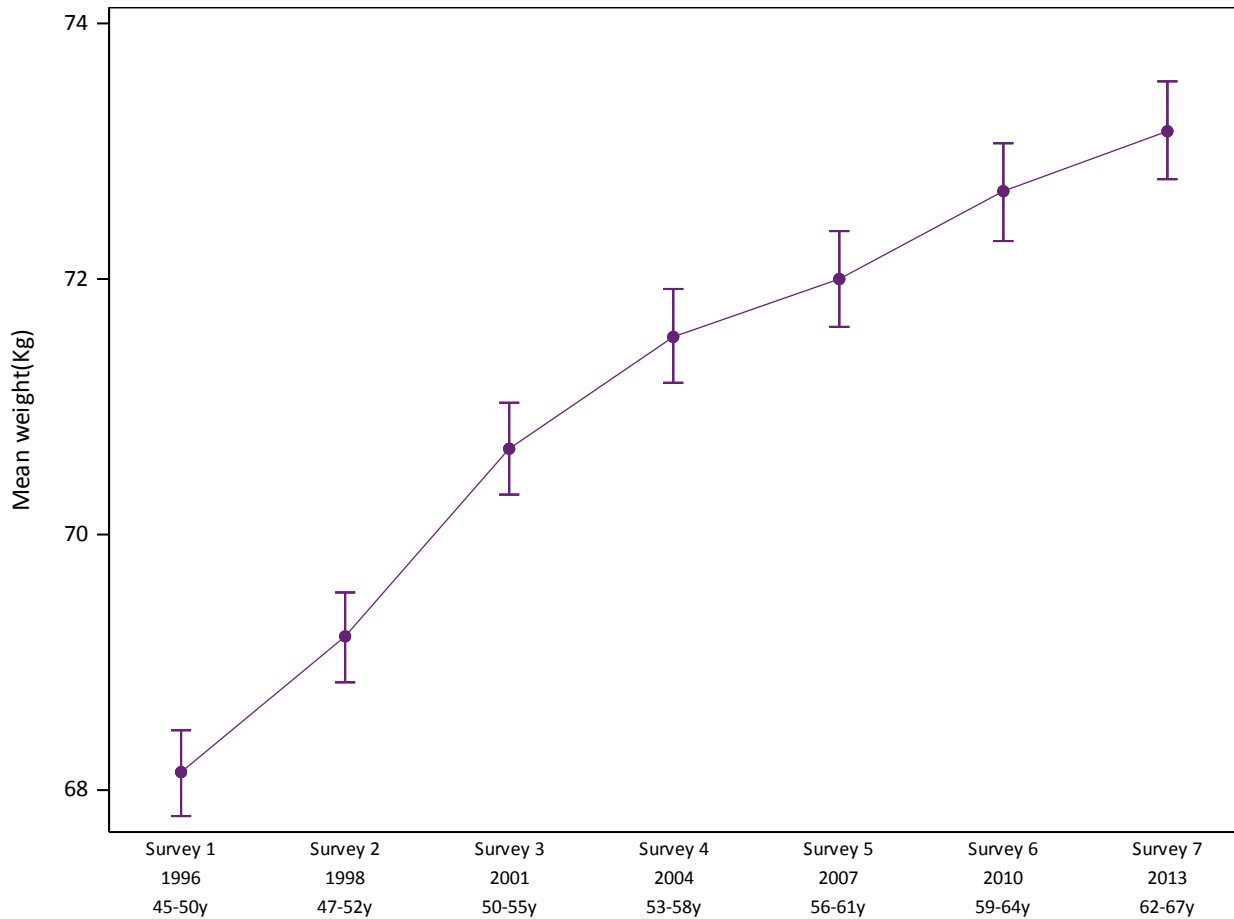
## 3.2 Lifestyle

### 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?

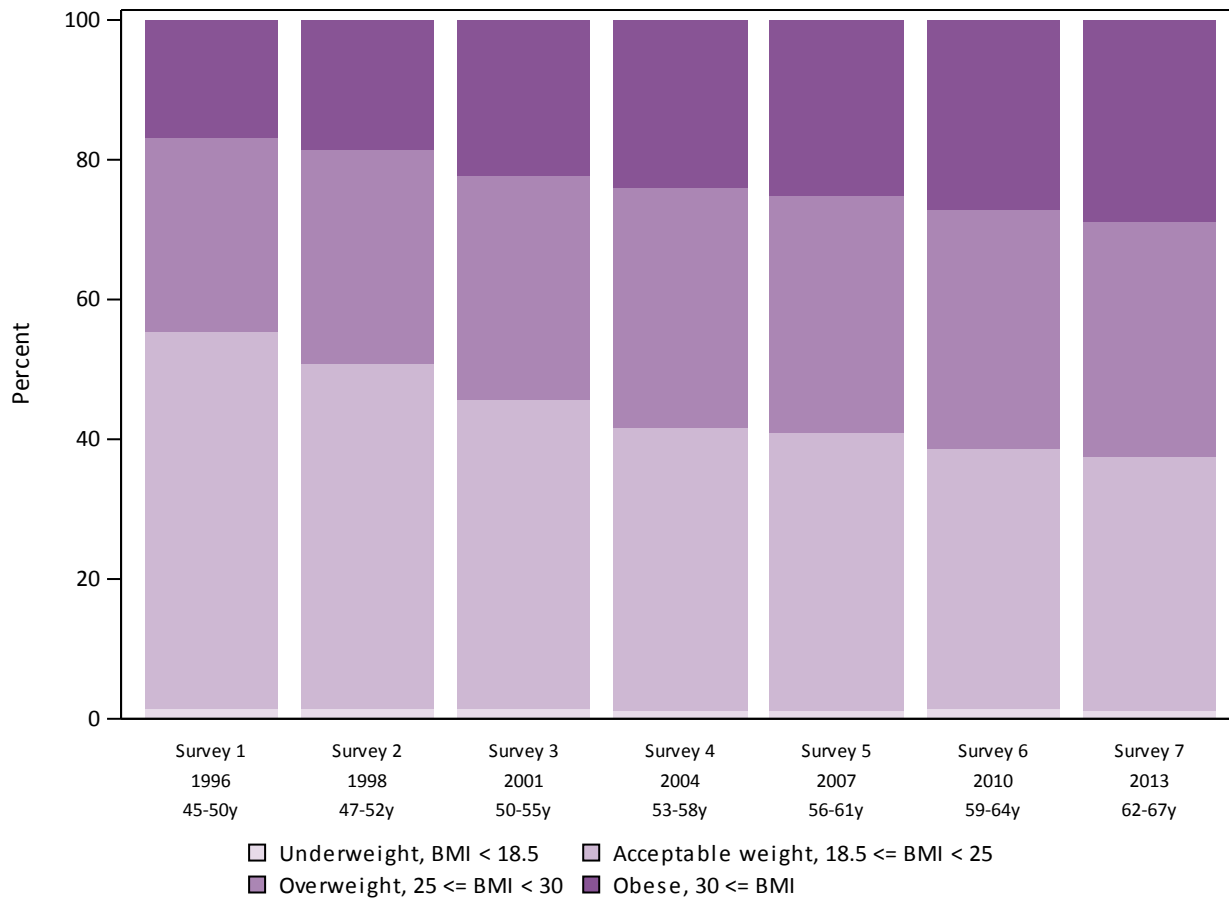
BMI [weight (kg)/height (m)<sup>2</sup>] is calculated from responses to both questions



**Figure 3-10 Participant weight in kilograms from Survey 1 to Survey 7 (N=6,113).**

The figure shows that on average the women experienced a weight gain of 5 kilograms between Survey 1 and Survey 7.





**Figure 3-11 Body Mass Index (BMI) from Survey 1 to Survey7 (N=6,113).**

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 62-67, the majority were overweight or obese (63%), reflecting a steady increase in average weight over the 17-year study period.

### 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)

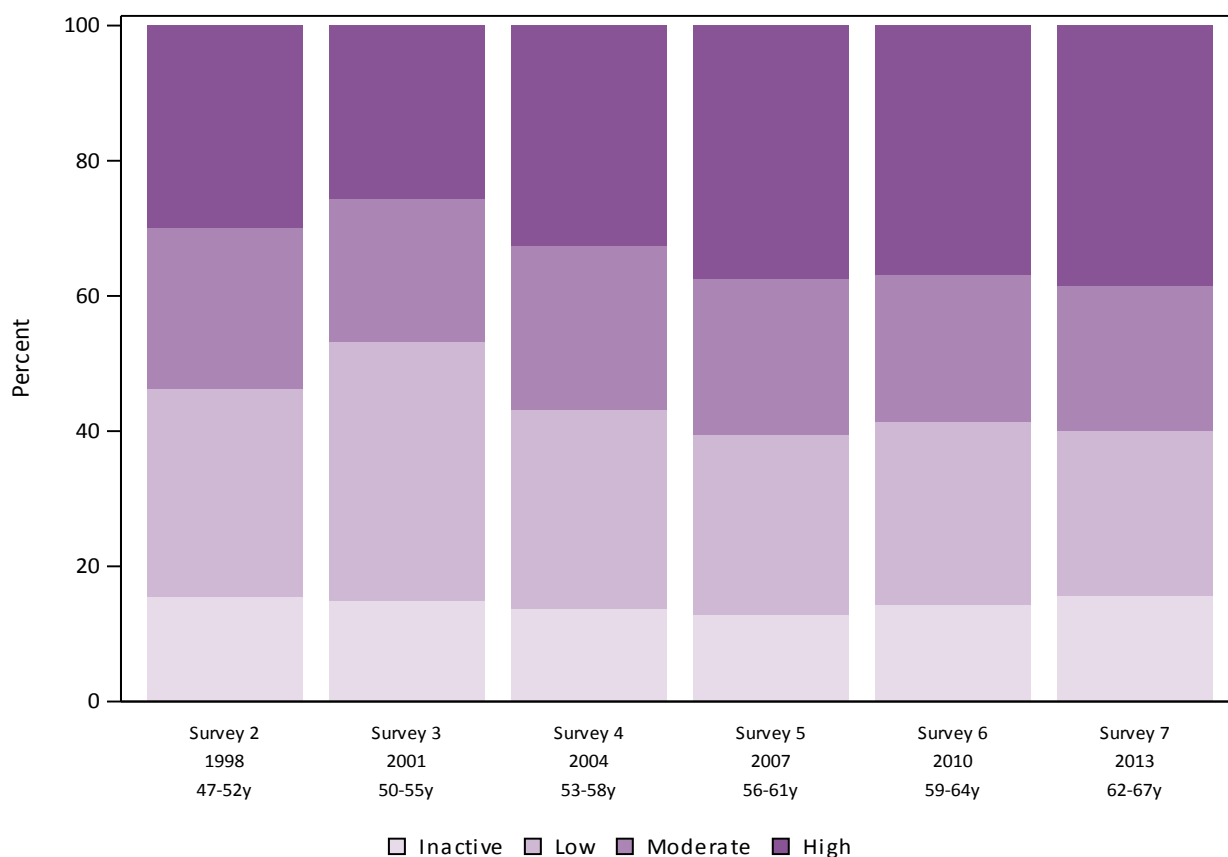
QUESTION: How much time did you spend altogether on each?

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

$\text{MET.min/week} = \text{time in walking} * 3 + \text{time in moderate activity} * 4 + \text{time in vigorous activity} * 7.5.$

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

Physical Activity Categories	MET minutes /week	Minutes of moderate activity/week
Nil/sedentary	0-<40	0-10
Low	40-<600	11-150
Moderate	600-<1200	151-300
High	>= 1200	>300

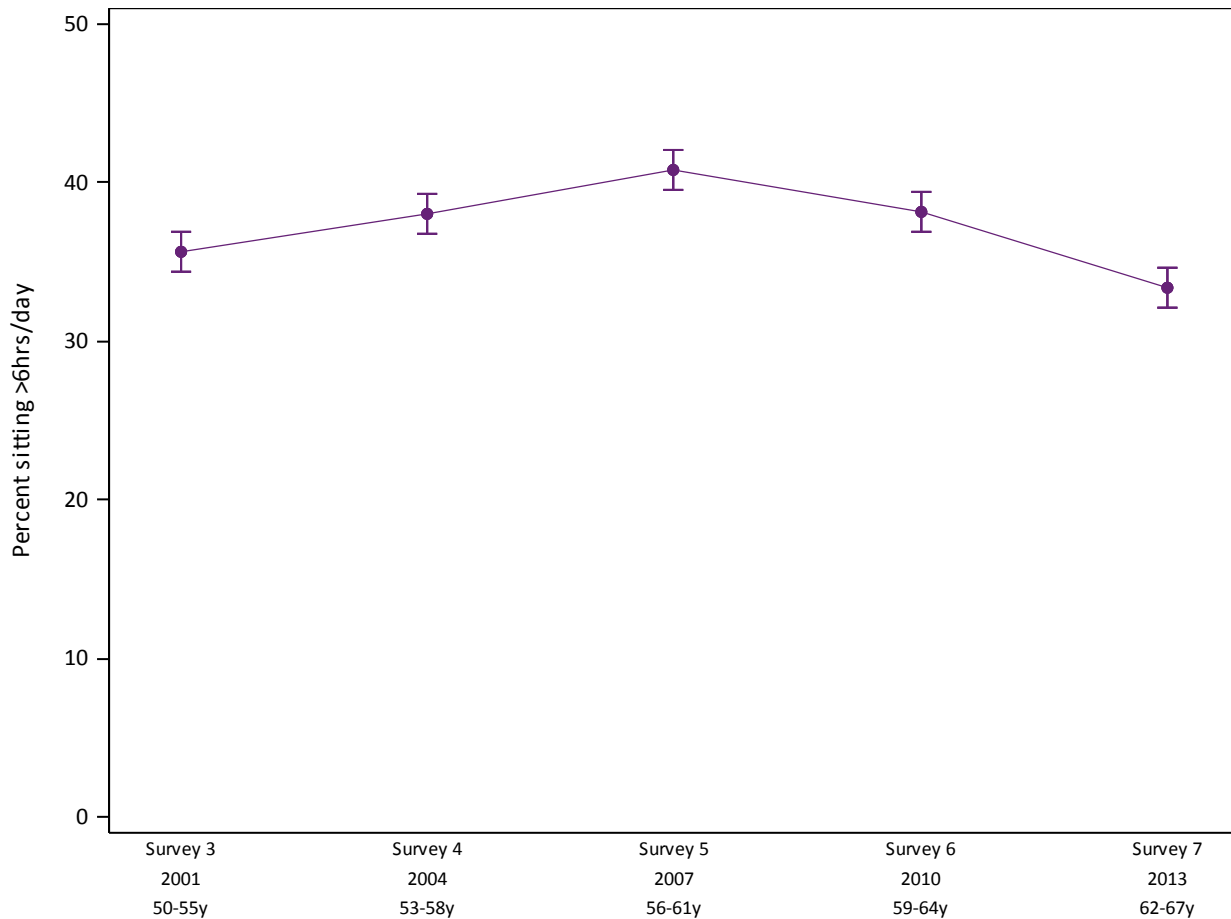


**Figure 3-12 Physical Activity from Survey 2 to Survey 7 (N = 6,006).**

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

The majority of the women were classified as moderately or highly physically active over all surveys. Between Survey 2 and Survey 7, the percentage of women whose physical activity levels were classified as high increased from 30% to almost 40%. However, at least 40% of women recorded low levels of activity or were inactive at every survey.

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).



**Figure 3-13 Percentage of women sitting more than 6 hours/day from Survey 3 to Survey 7 (N=5,728)**

The percentage of women who reported sitting more than 6 hours a day varied little between Survey 3 to Survey 7, ranging from 35% at Survey 3 and peaking at 40% at Survey 5, before declining to about 33% at Survey 7.

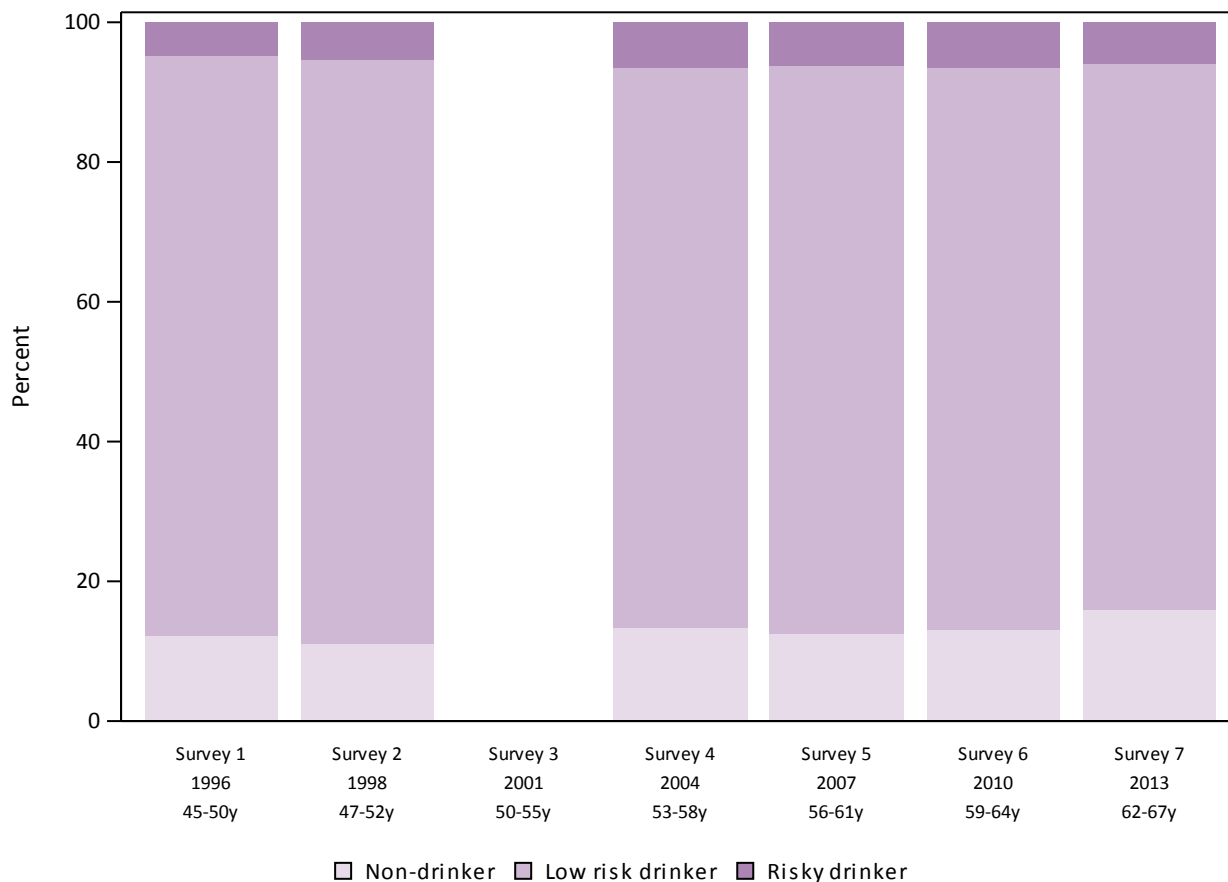
### 3.2.3 Alcohol use and smoking

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 7 (N=7,374).**

*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.*

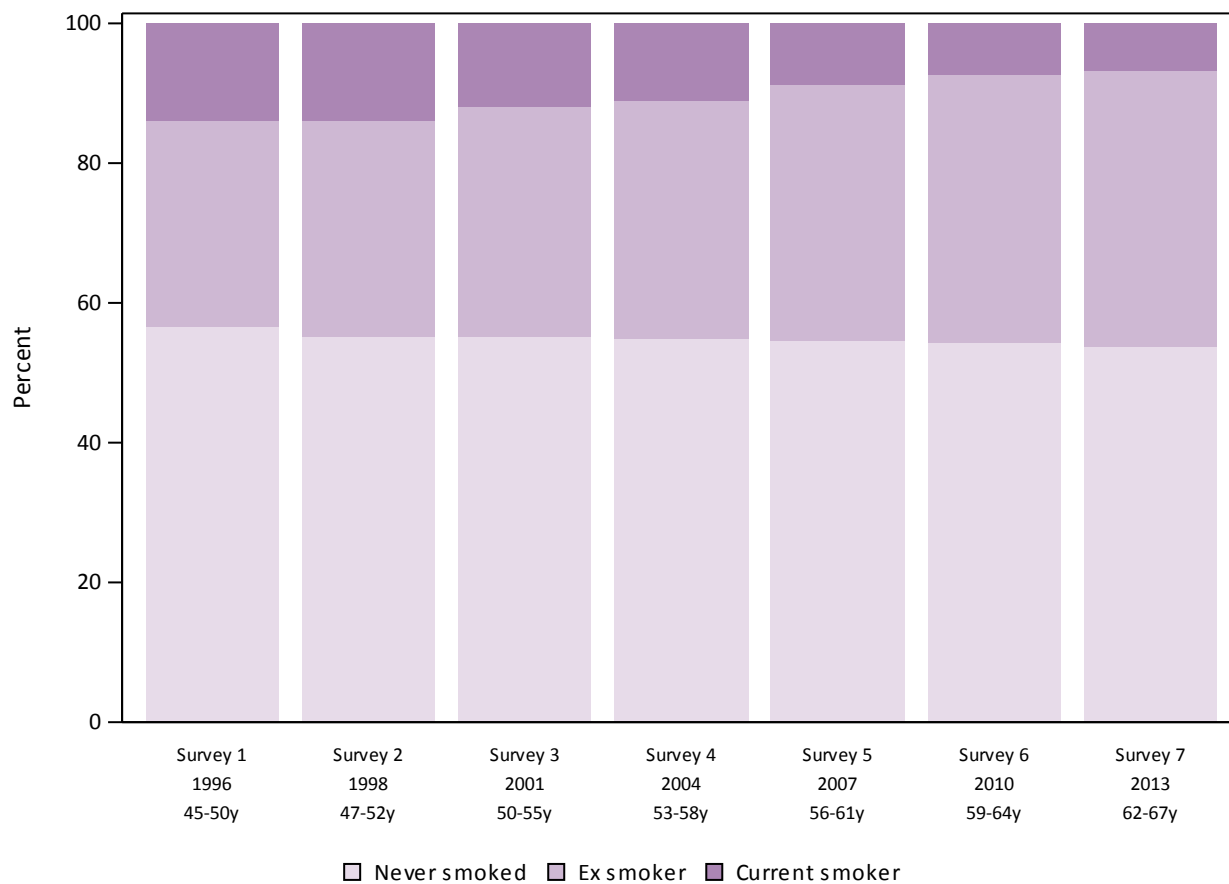
Across all surveys the majority of women were either non-drinkers or low risk drinkers, with around 5% drinking at risky levels.

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.



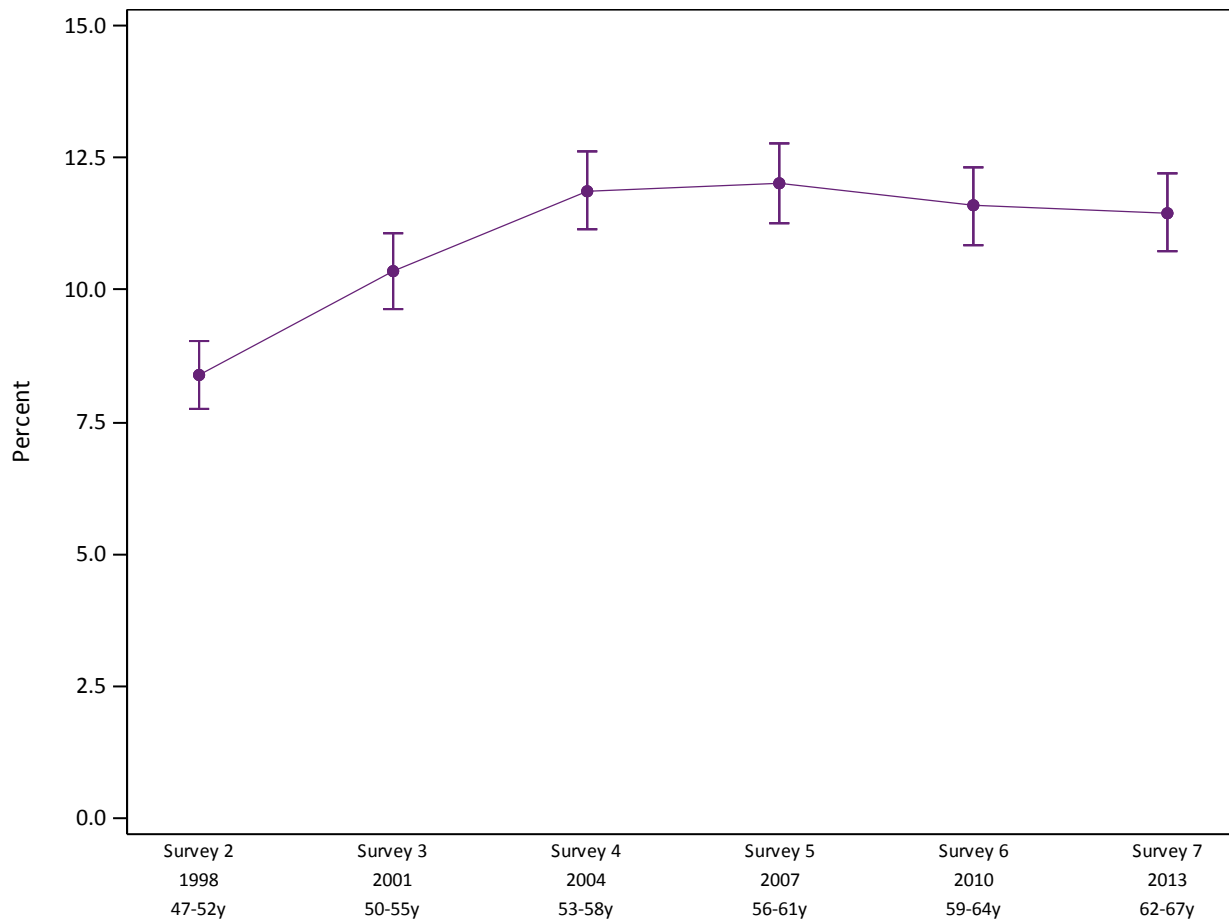
**Figure 3-15 Smoking prevalence from Survey 1 to Survey 7 (N=7,166).**

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 5% at Survey 7, 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 7 (N=7,163).**

*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).*

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 decrease at Survey 7 (11%).

### 3.3.2 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.)

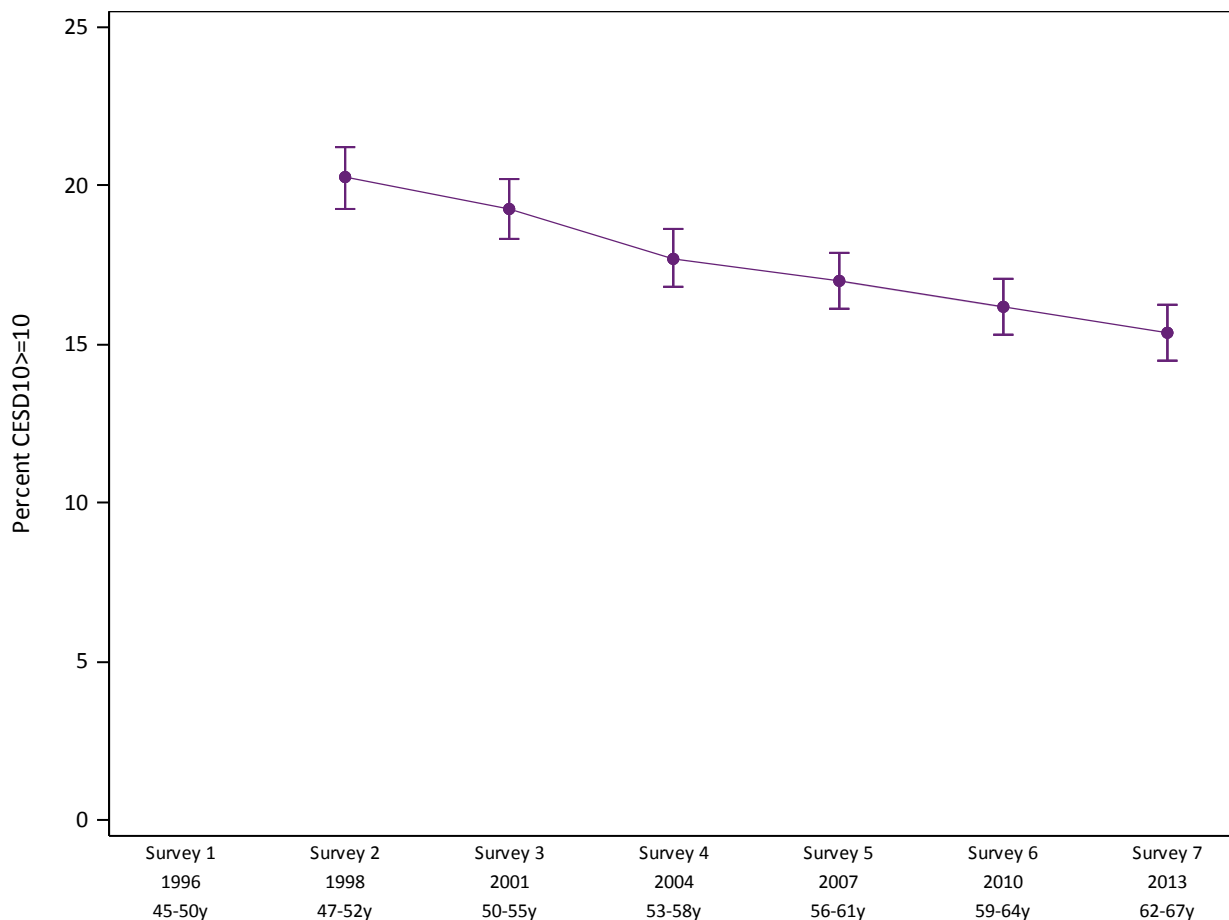


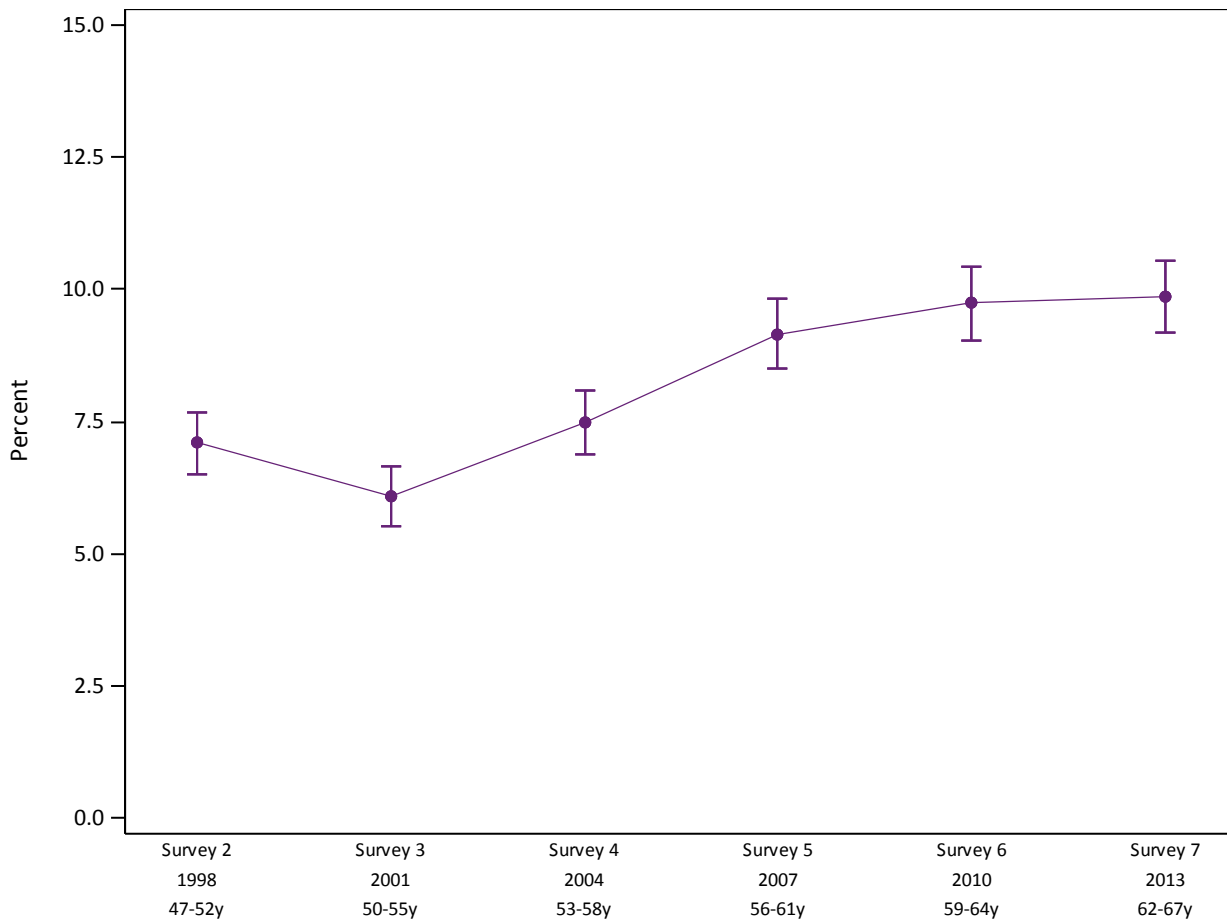
Figure 3-17 Percentage of women with a CESD10 score >=10 from Survey 2 to Survey 7 (N=6,609).



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 Survey 7. This could be an indicator of successful treatment and/or reflect a decrease in psychological distress associated with increasing age. This 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 7 (N=7,163).**

*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 over time.

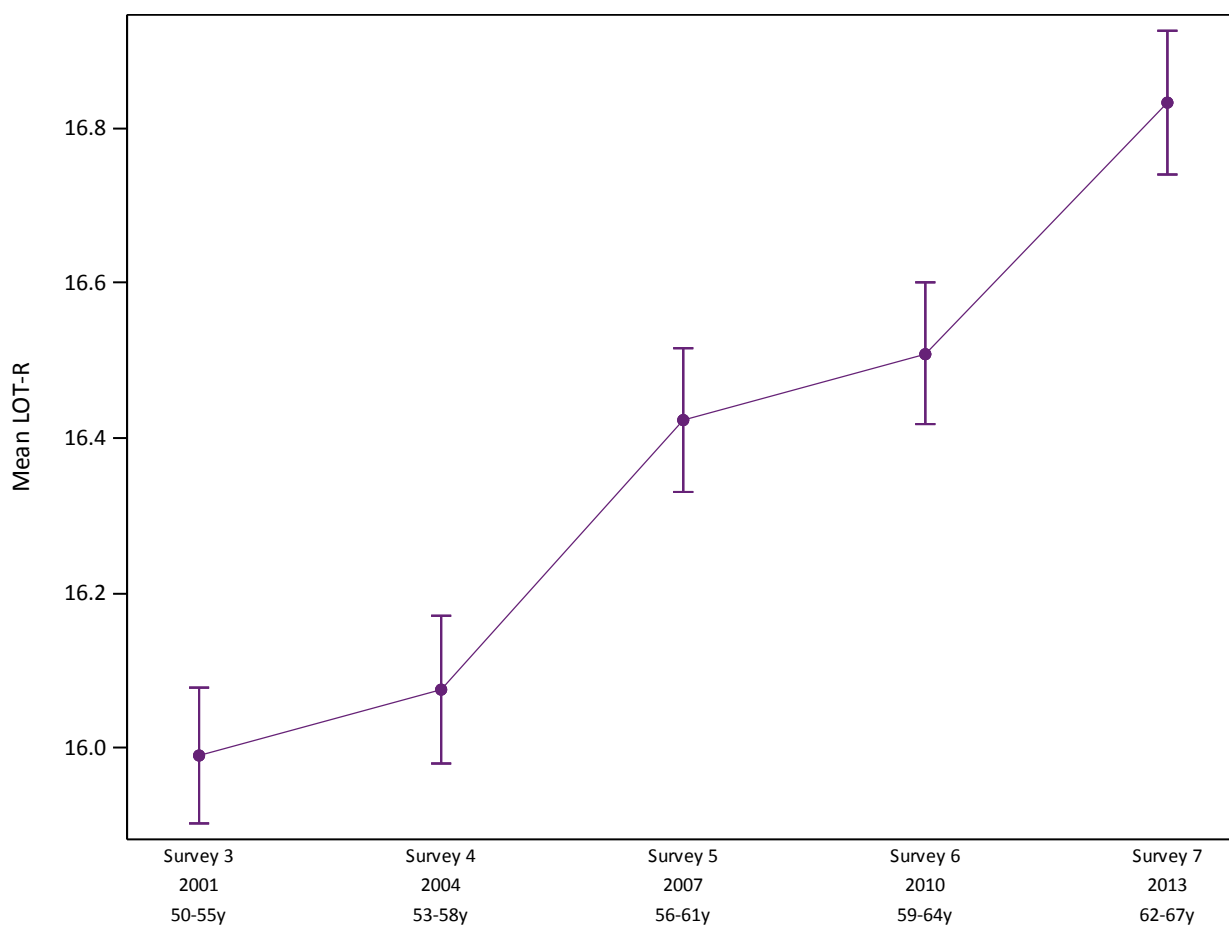
### 3.3.4 Optimism: Revised Life Orientation Test (LOT-R)

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 7 (N=7,448).**

The increase in optimism scores, as indicated by the mean scores from the Revised Life Orientation Test (LOT-R), is reflective of increasing psychological health among the cohort. 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.

### 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.)

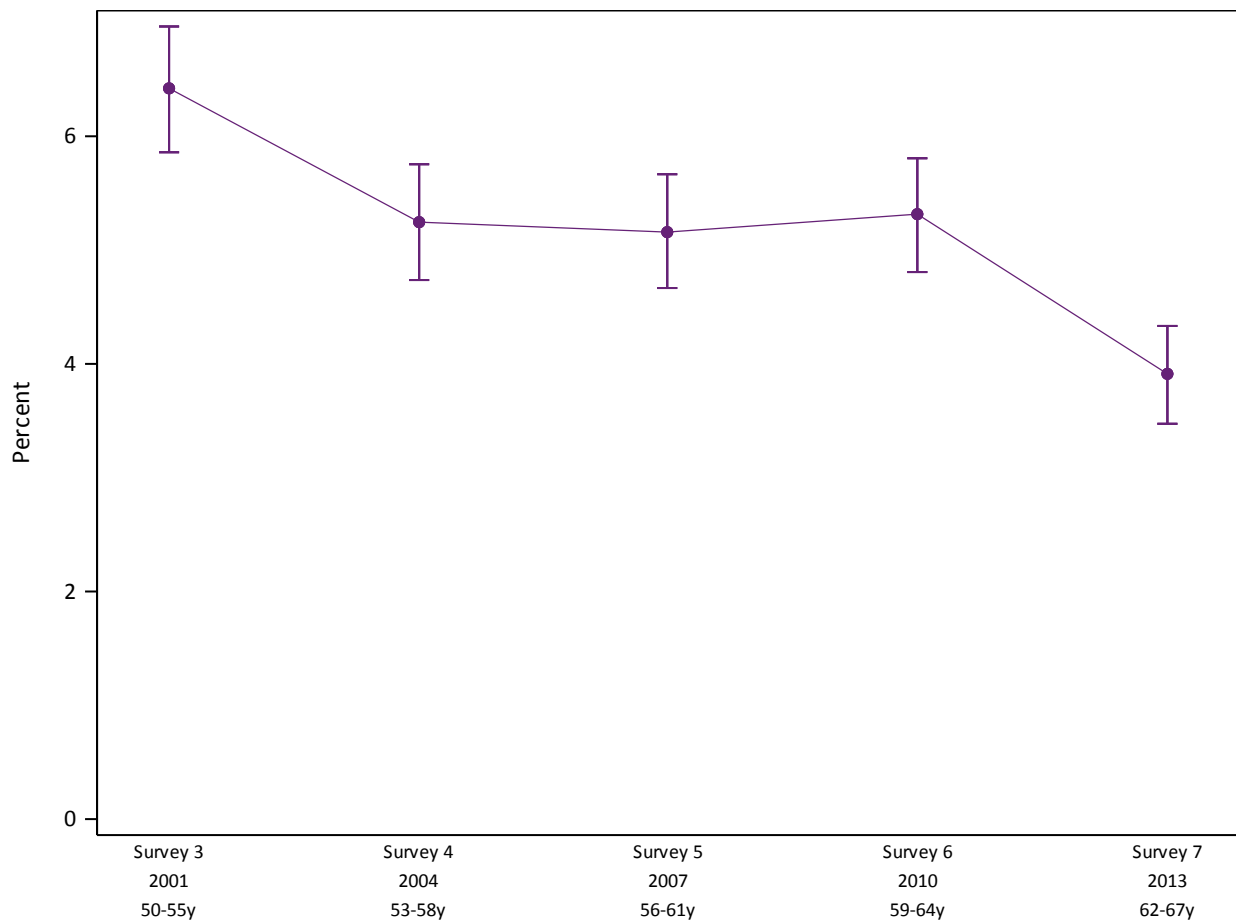
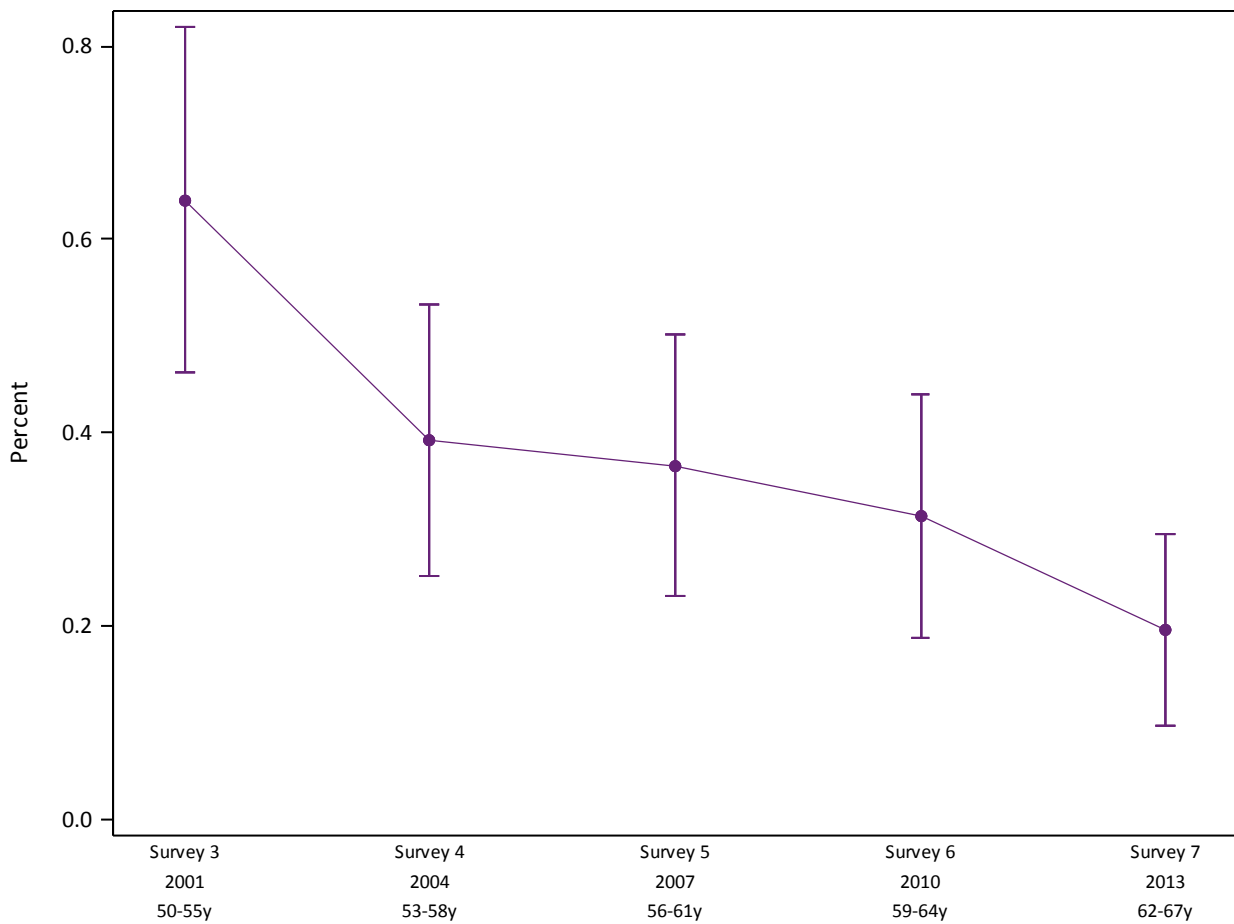


Figure 3-20 Percentage of women with suicidal ideation in the past week from Survey 1 to Survey 7 (N= 7,607).

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? (Not asked at Surveys 1 and 2.)



**Figure 3-21 Percentage of women with self-harming behaviours from Survey 3 to Survey 7 (N=7,644).**

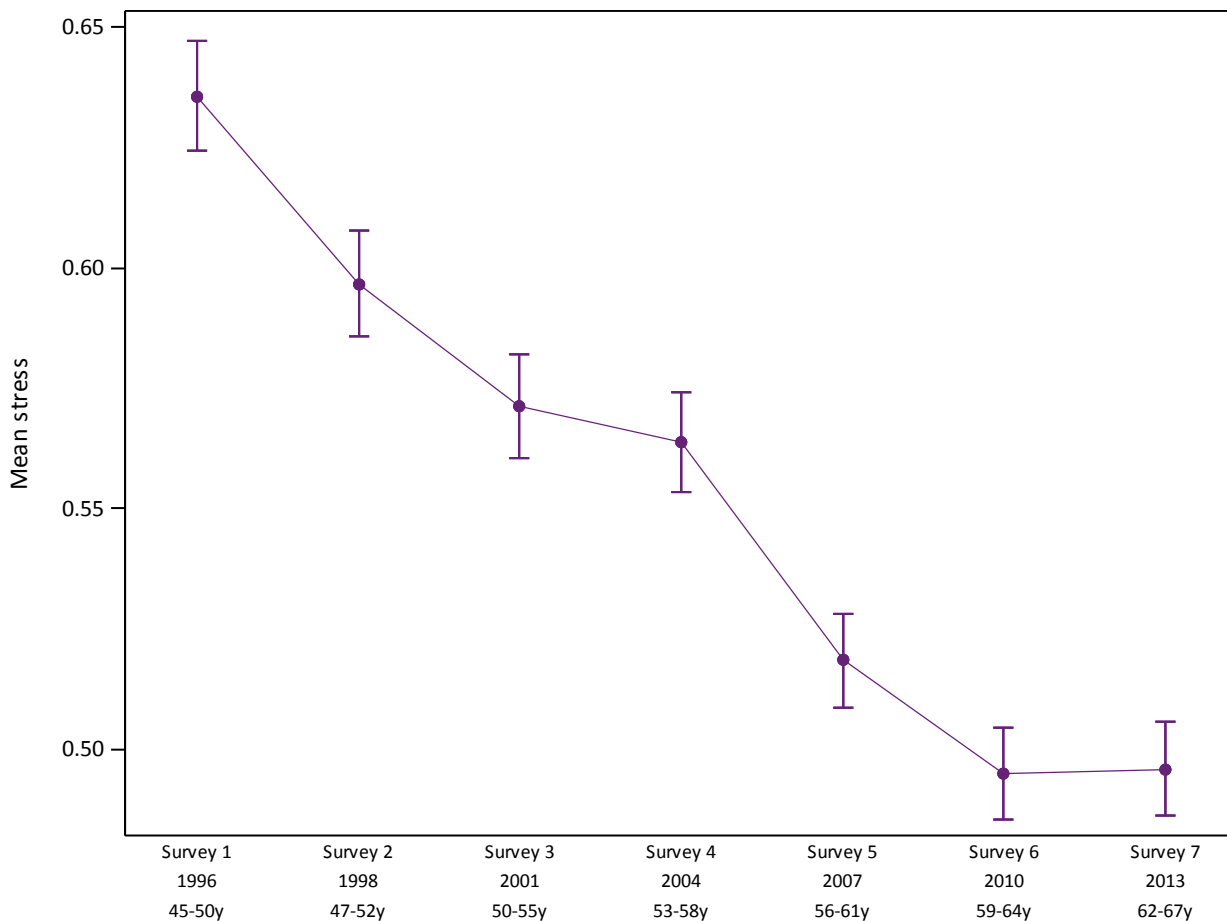
Figure 3-20 and Figure 3-21 reflect a decline in the percentage of women reporting suicidal thoughts and self-harming behaviours from Survey 3 to Survey 7. Again, this is consistent with the generally improving psychological health among this cohort over time. This improvement is congruent with the literature 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 3-22 Mean stress score over the previous 12 months from Survey 1 to Survey 7 (N=7,275).**

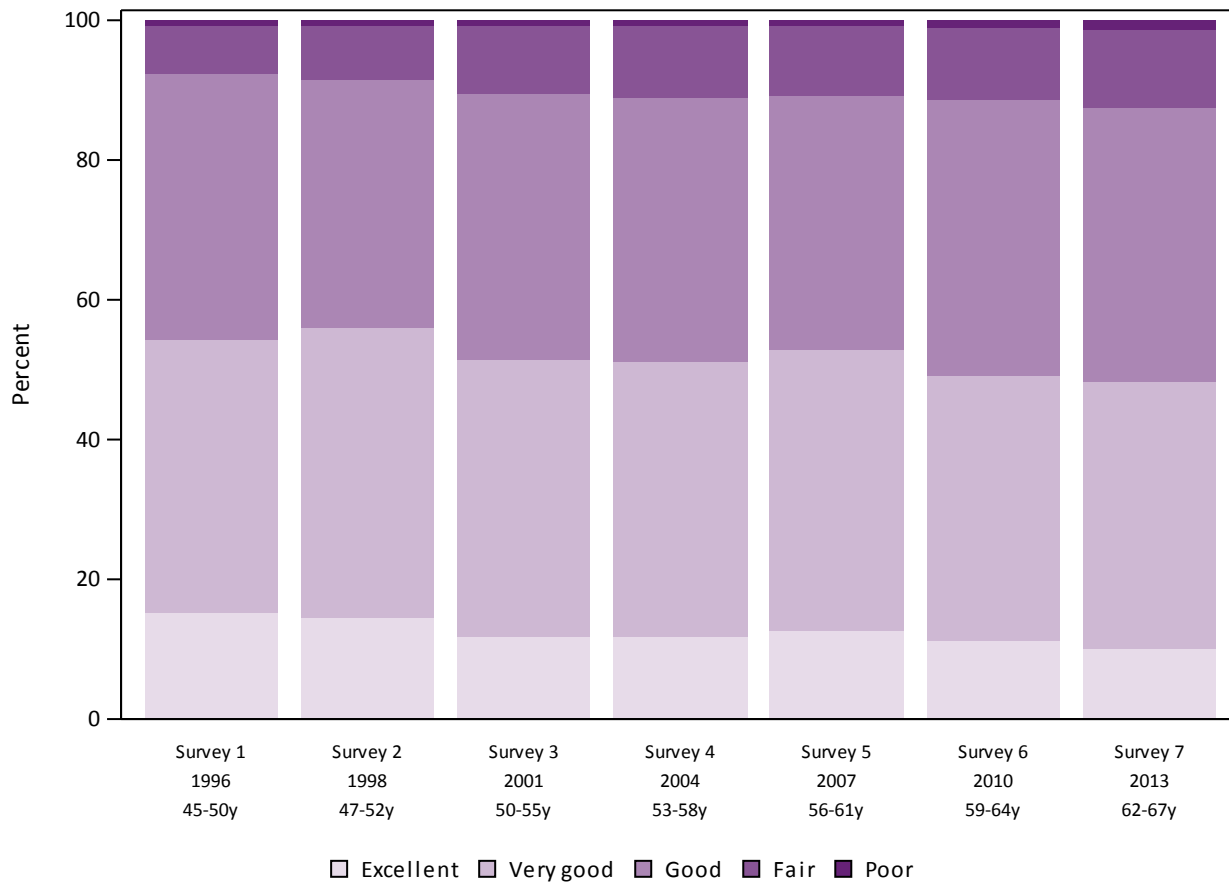
Consistent with improvements in self-reported mental health and optimism, the women's stress decreased from Survey 1 to Survey 6, as indicated by the mean scores from the Perceived Stress Scale, and then plateaued between Survey 6 and Survey 7.

### 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

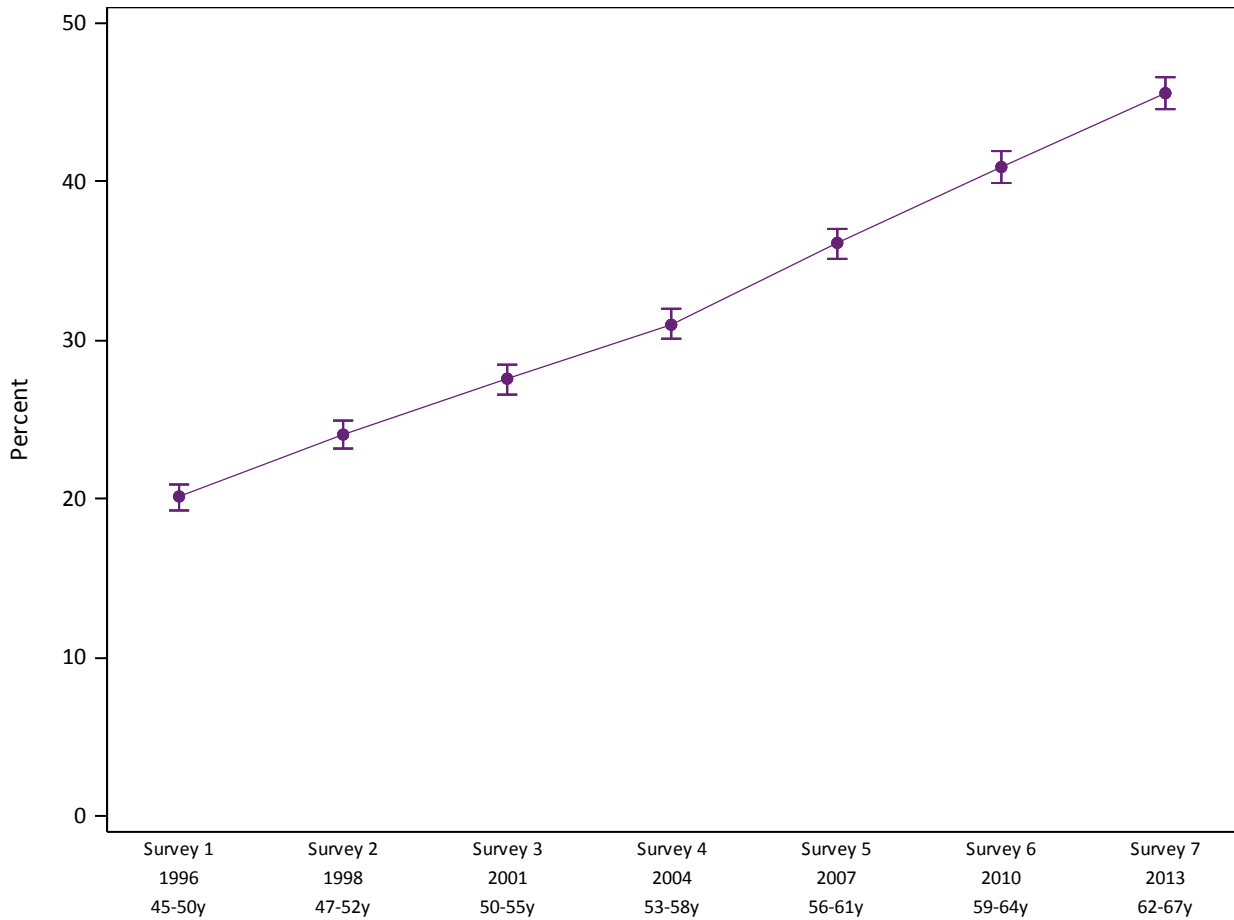


**Figure 3-23 Self-rated health from Survey 1 to Survey 7 (N= 7,341).**

At age 45 to 50 years, 55% of women rated their health as 'excellent' or 'very good', and by 62 to 67 years this proportion had declined to about 50%. Conversely, the percentage of women with fair or poor self-rated health increased from 5% to 10% 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)?



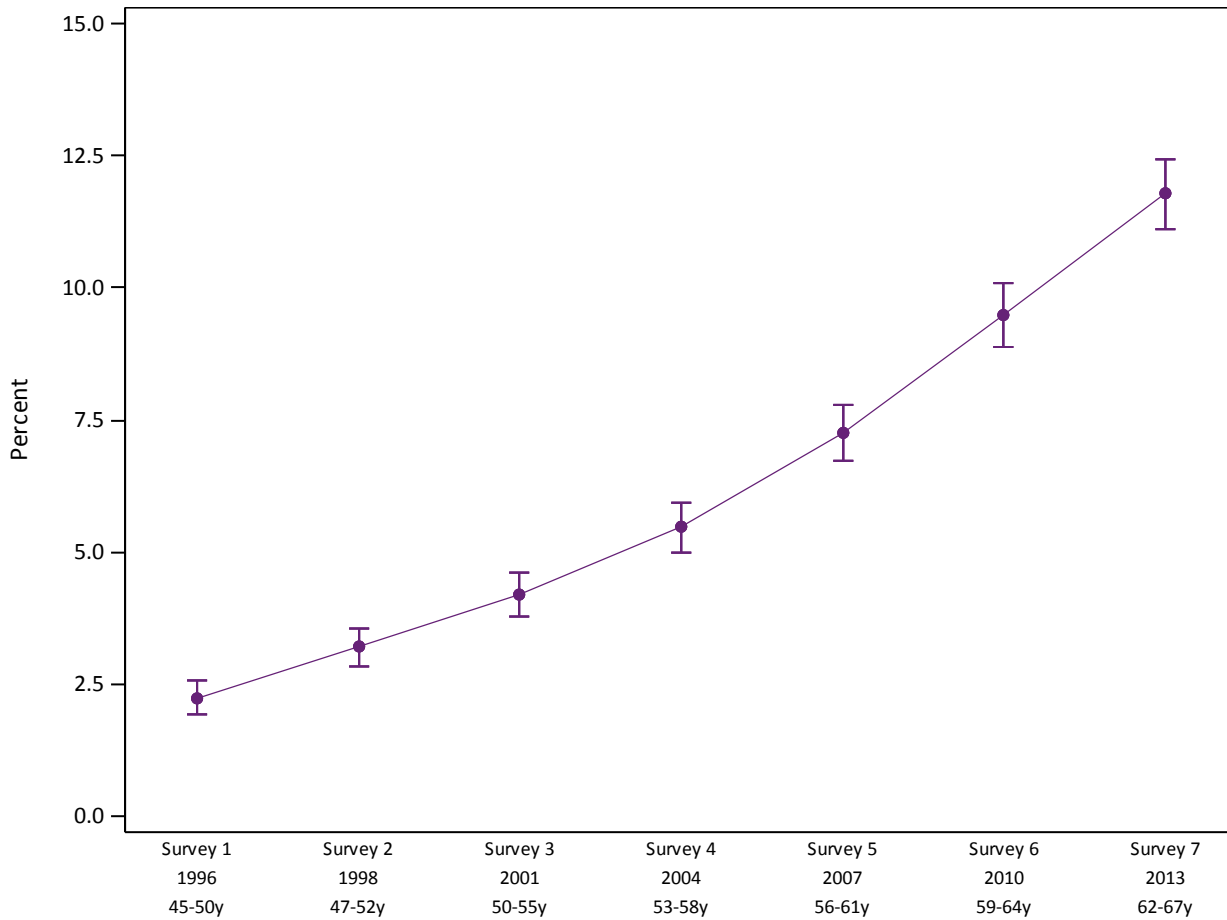
**Figure 3-24 Percentage of women with hypertension from Survey 1 to Survey 7 (N=8,940).**

*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 had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).*

20% of the women reported they had ever been diagnosed with hypertension at Survey 1. However, the percentage of women being diagnosed with or treated for this condition within the past three years increased at subsequent surveys, so that by Survey 7 in 2013, almost half of the women 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)?



**Figure 3-25 Percentage of women with diabetes from Survey 1 to Survey 7 (N=8,952).**

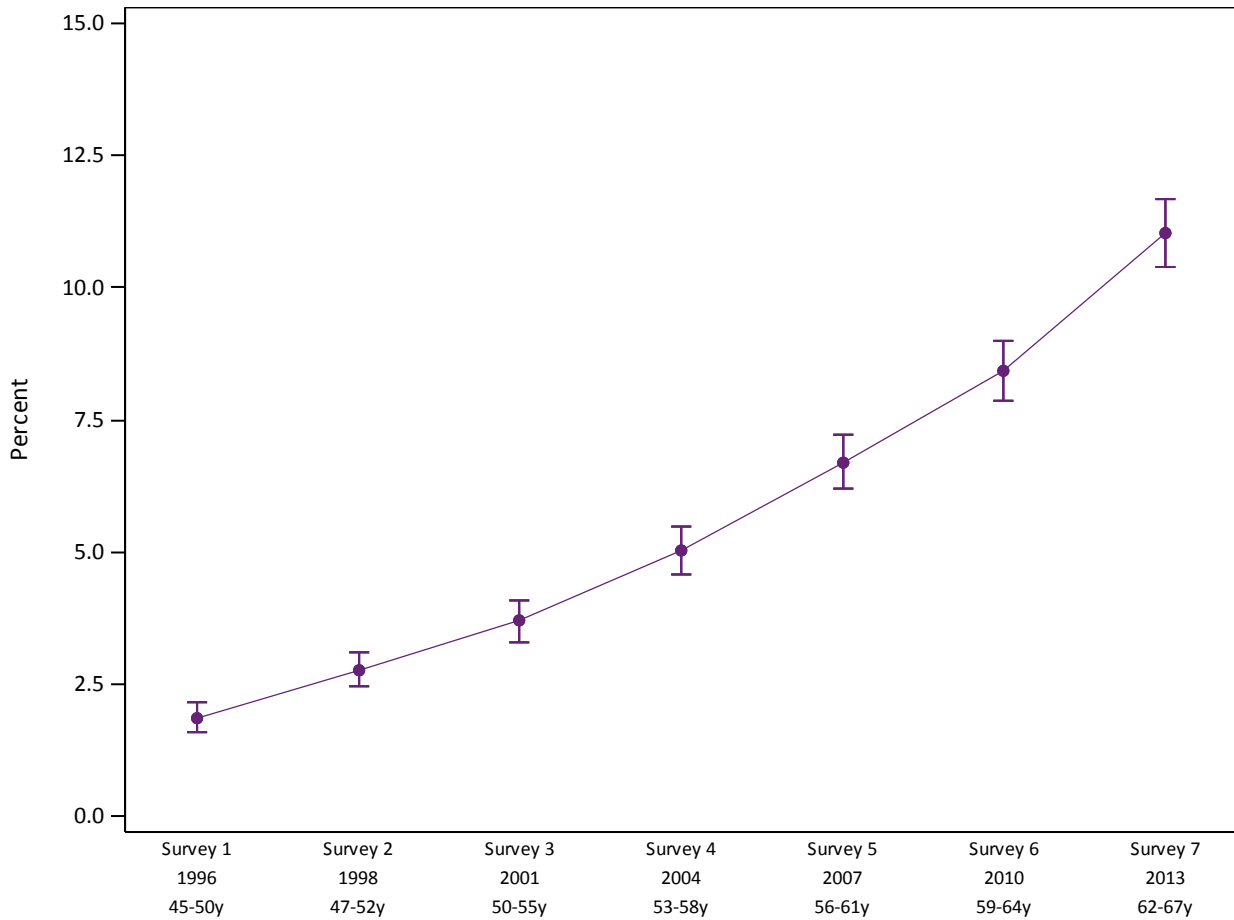
*Note: At Survey 1, women were asked if they had 'ever' been diagnosed or treated, and from Survey 2 onward they were asked if they had had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).*

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 7, 12.5% 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)?



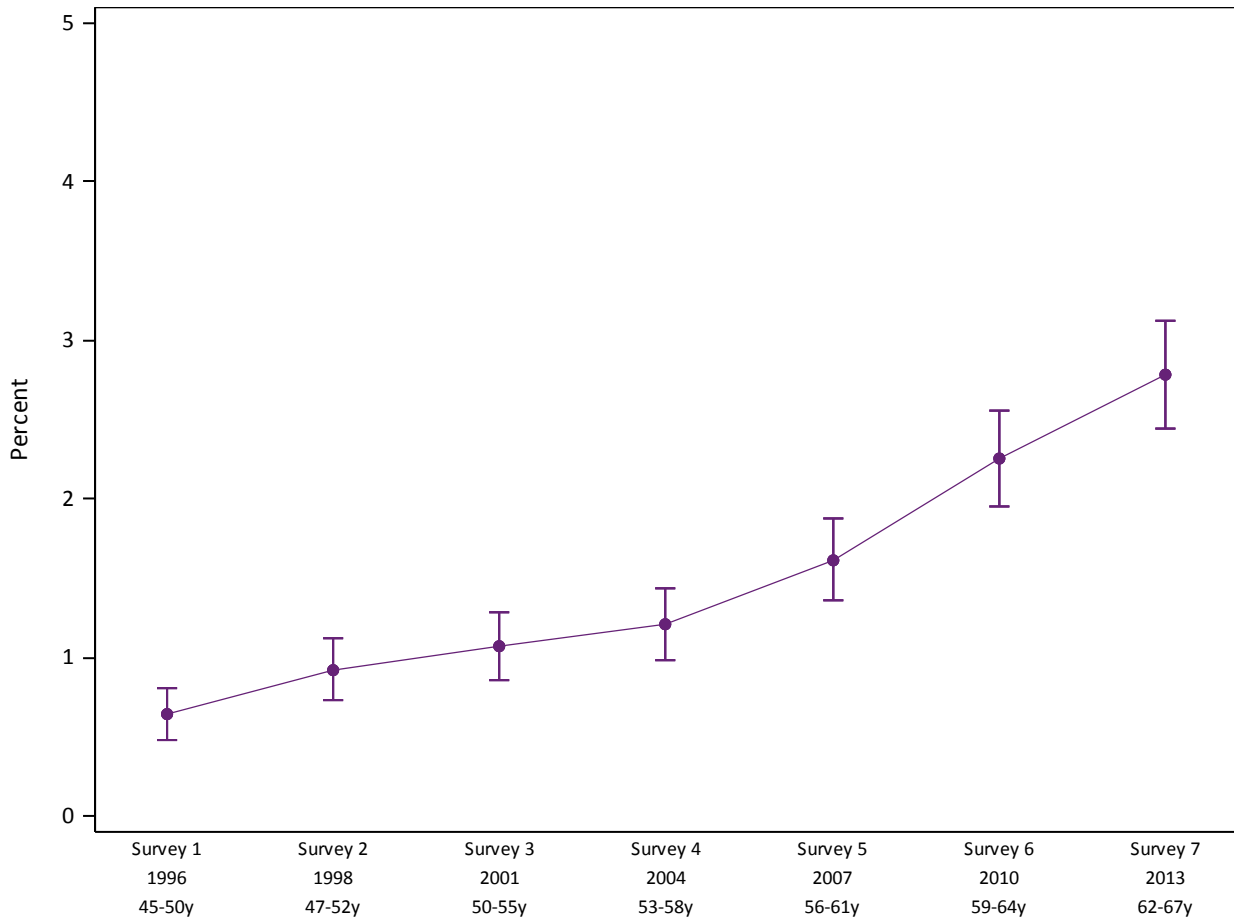
**Figure 3-26 Percentage of women with heart disease from Survey 1 to Survey 7 (N=9,037).**

*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 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 7, from just under 2.5% to almost 12.5%.

### 3.4.5 Stroke

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



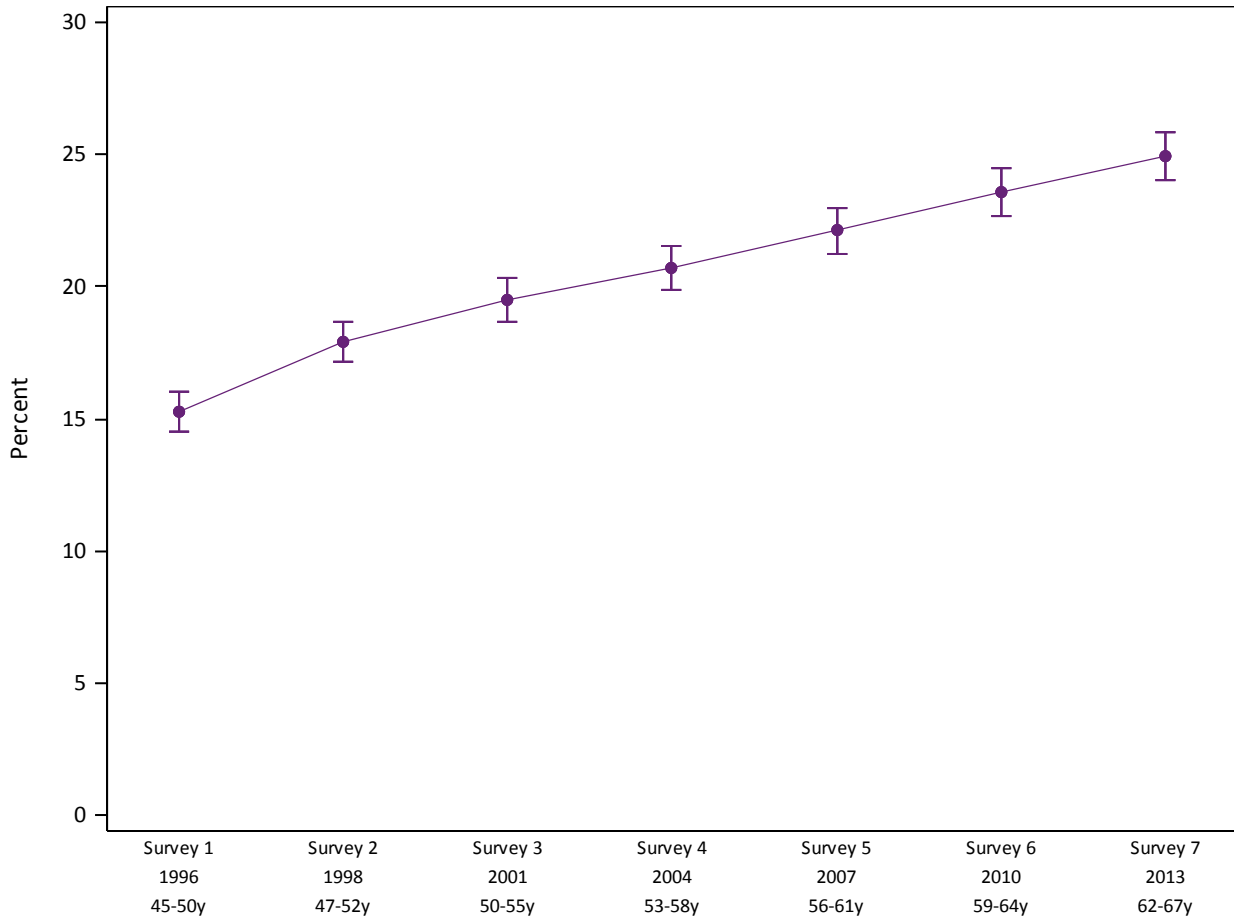
**Figure 3-27 Percentage of women with stroke from Survey 1 to Survey 7 (N=9,088).**

*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 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 increased from less than 1% at Survey 1 to 3% at Survey 7.

### 3.4.6 Asthma

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



**Figure 3-28 Percentage of women with asthma from Survey 1 to Survey 7 (N=9,047).**

*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 had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).*

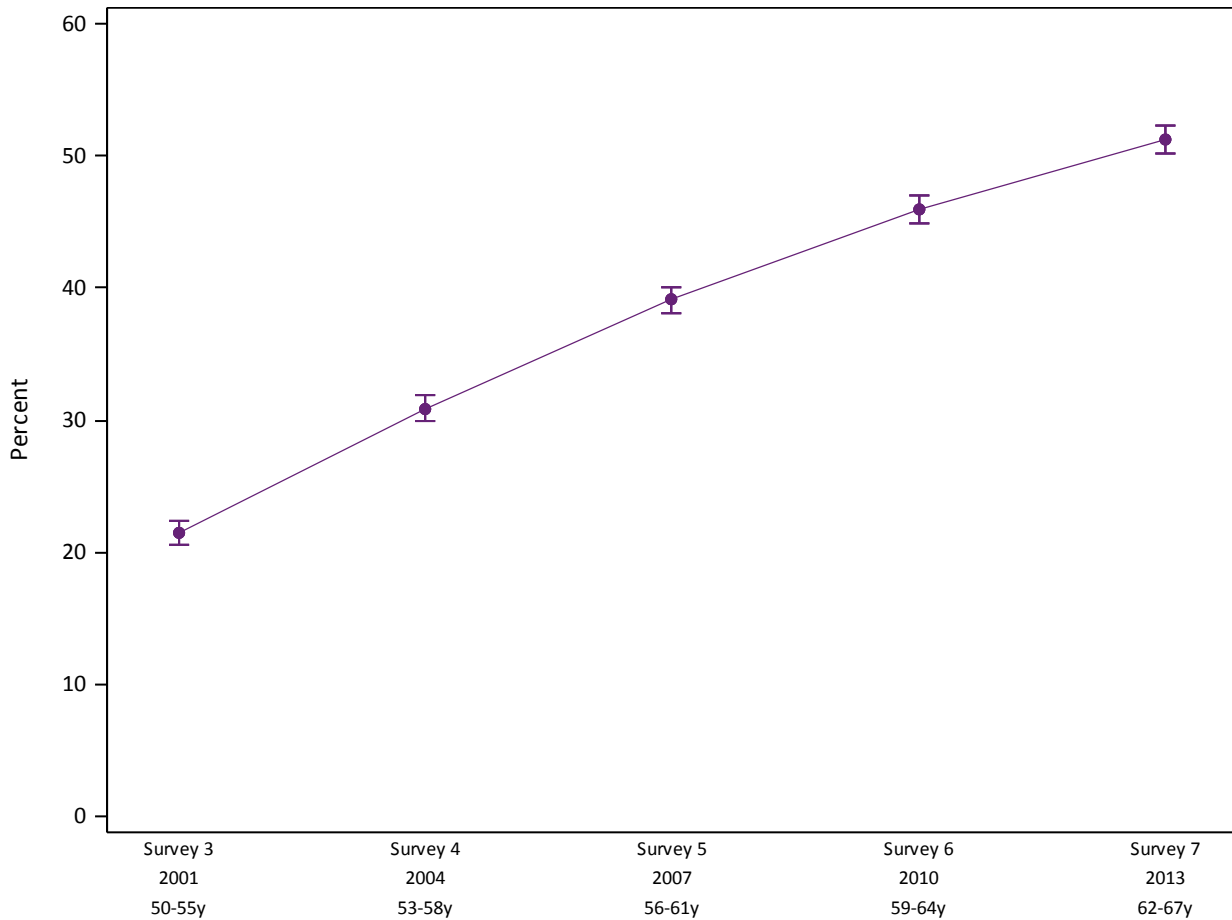
At Survey 1, around 15% of the women reported they had ever been diagnosed with asthma. On each subsequent survey, increasing percentages of women have reported diagnosis or treatment of asthma in the past three years. By survey 7, around 25% of women had reported asthma on at least one survey.

### 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).



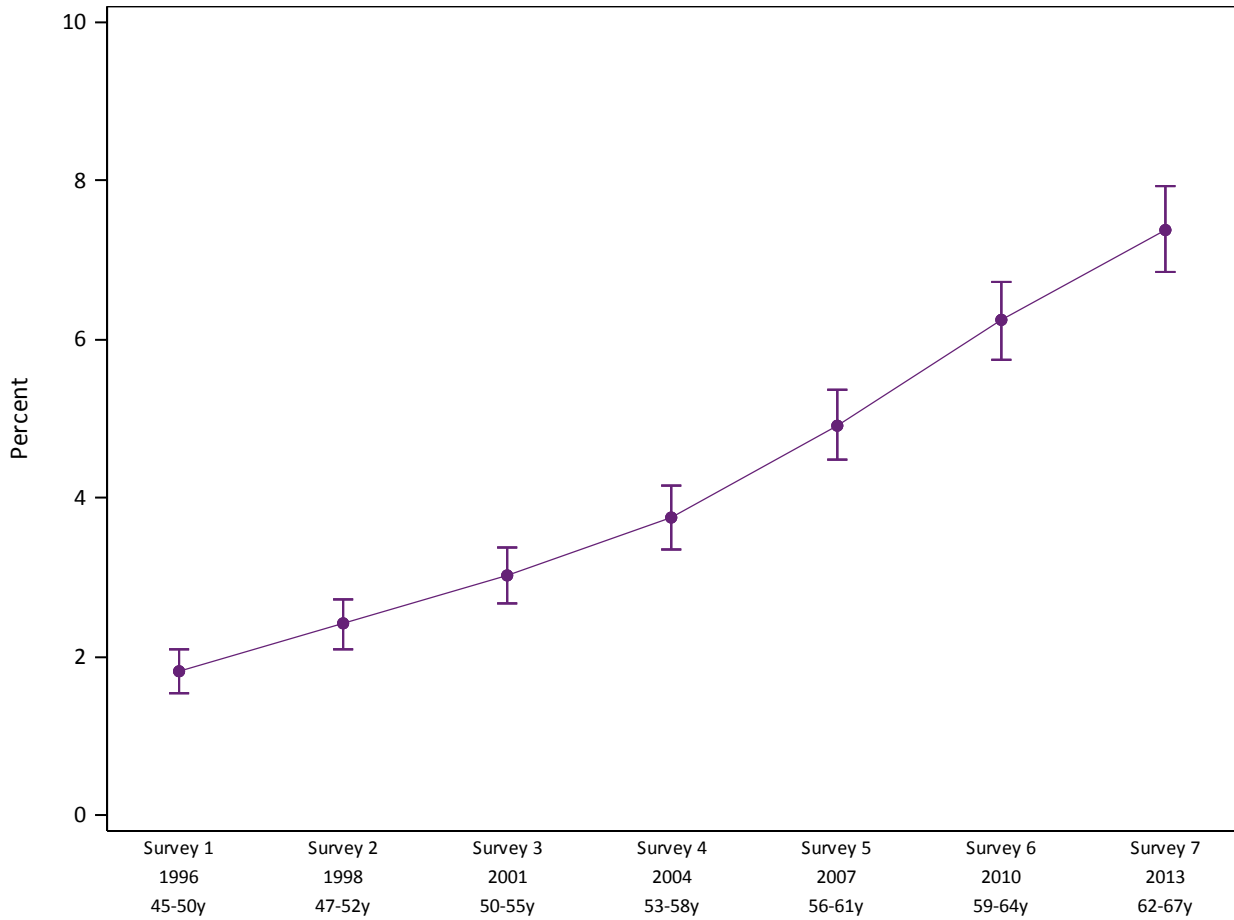
**Figure 3-29 Percentage of women with arthritis from Survey 3 to Survey 7 (N=8,748).**

*Note: This question has been included since Survey 3.*

Diagnosis or treatment of arthritis was reported by 21% of women at age 55 to 55 years, increasing to 50% when the women were aged 62 to 67 years.

### 3.4.8 Breast cancer

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



**Figure 3-30 Percentage of women with breast cancer from Survey 1 to Survey 7 (N=9,028).**

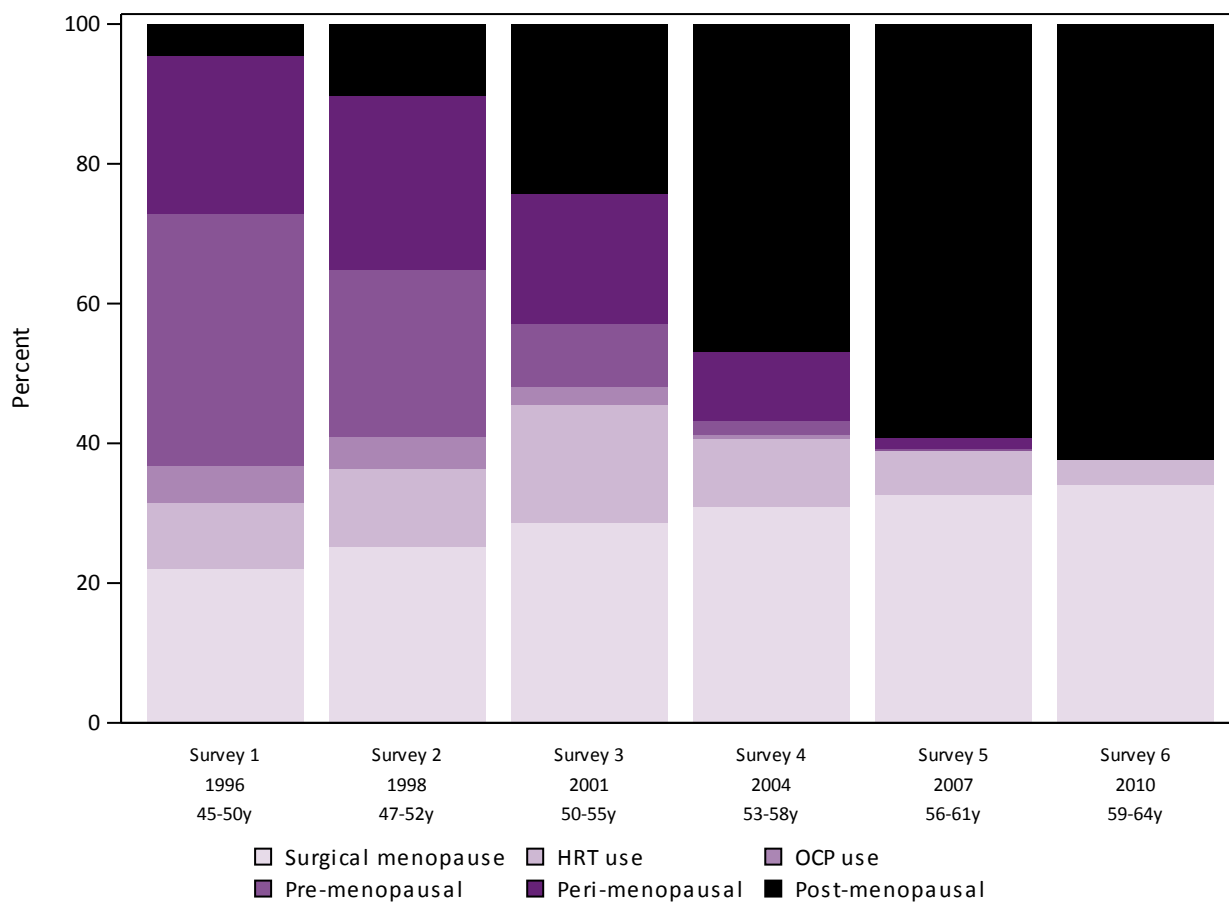
*Note: At Survey 1, women were asked if they had 'ever' been diagnosed or treated, and from Survey 2 onward they were asked if they had had been diagnosed or treated 'in the last three years' (i.e., since the previous survey).*

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 7, almost 8% of the women reported a diagnosis of breast cancer.

### 3.5 Reproductive health

#### 3.5.1 Menopause status

Menopause status was determined based on the responses to survey questions about hysterectomy, oophorectomy, hormone therapy, and menstrual pattern. Women who reported hysterectomy, oophorectomy, or both were classified as having had hysterectomy or surgical menopause. For all other women, menopause status was classified as premenopausal if they had menstruated in the last 3 months and reported no change in menstrual frequency in the last 12 months, perimenopausal if they reported changes in menstrual frequency or 3 to 11 months of amenorrhea, and naturally postmenopausal if they 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.



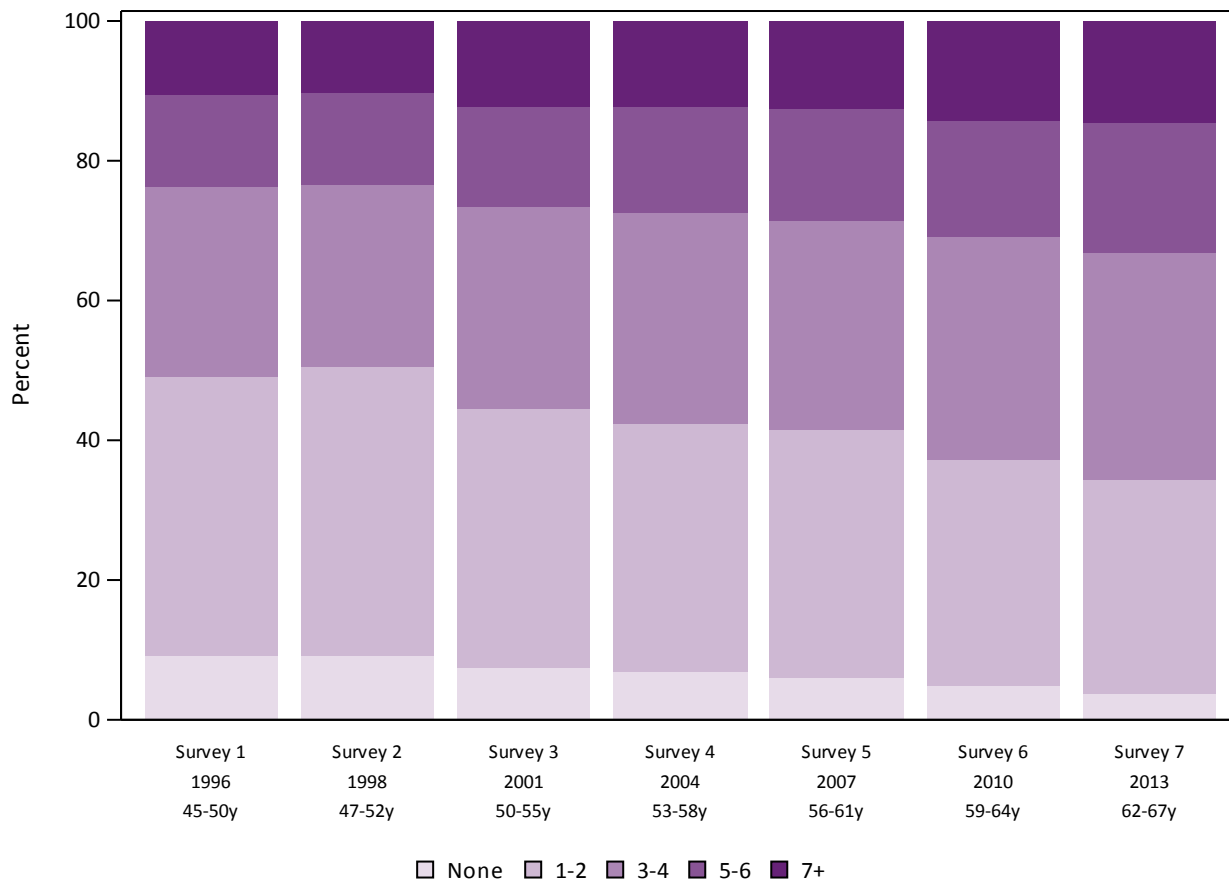
**Figure 3-31 Menopause status from Survey 1 to Survey 6 (N=8,193).**

At Survey 1 women were least likely to be post menopausal, as women moved from their late forties to their mid to late sixties, the post menopause category steadily increased to be the most common category, as would be expected. HRT use increased from Survey 1 to 3, and then decreased over the following three surveys. By Survey 6 when the women were aged 59 to 64 years, more than 60% were post-menopausal, 5% were using HRT and 30% had experienced a surgical menopause.

### 3.6 Health service use

#### 3.6.1 Doctors (General Practitioners and specialists)

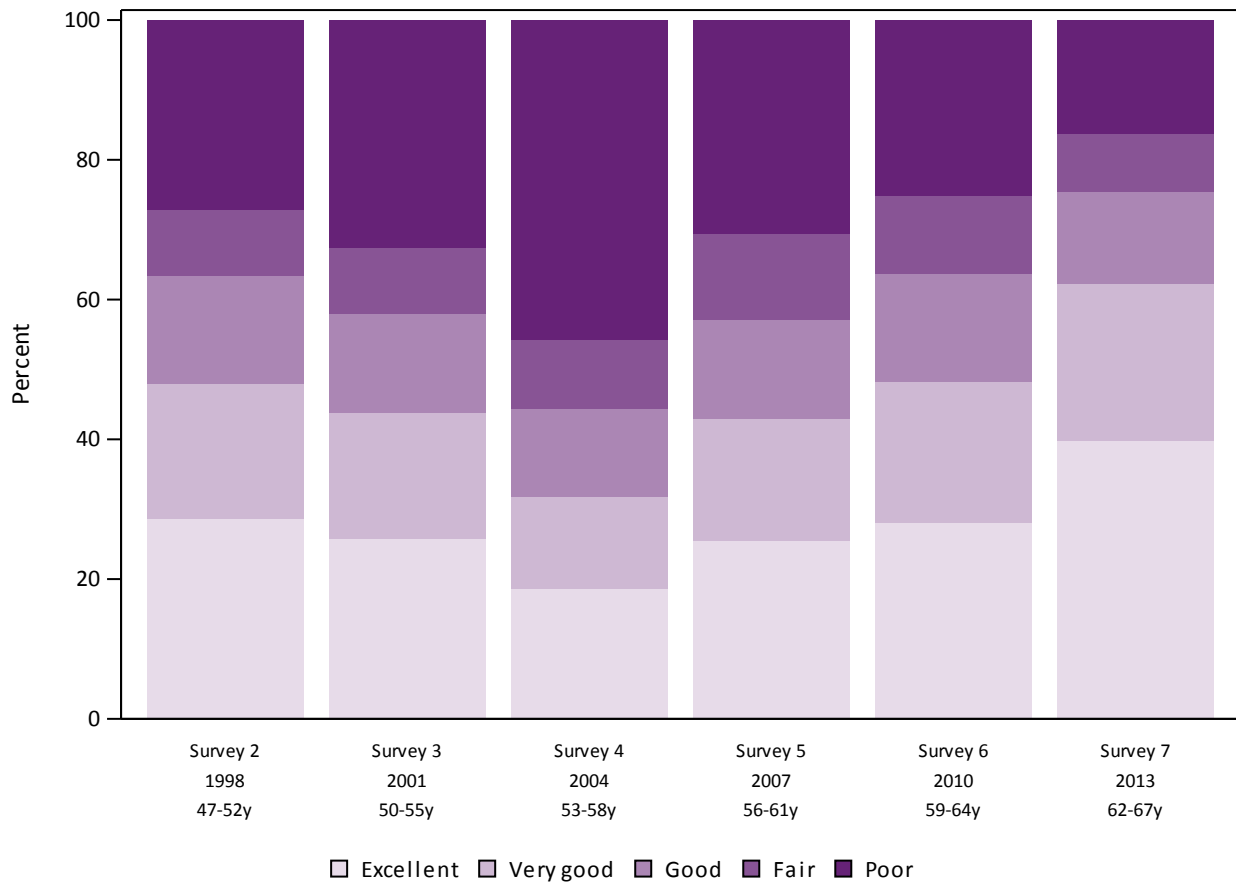
QUESTION: How many times have you consulted a family doctor or another general practitioner for your own health in the last 12 months?



**Figure 3-32 Number of visits to a GP in the last 12 months from Survey 1 to Survey 7 (N=7,283).**

At Survey 1, when the women 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 70% by age 62 to 67 years. Conversely, the percentage of women who consulted their GP 7 or more times increased over the same period from 10% to 15%.

QUESTION: Thinking about your own health, how would you rate access to a GP who bulk bills? (Not asked at Survey 1).

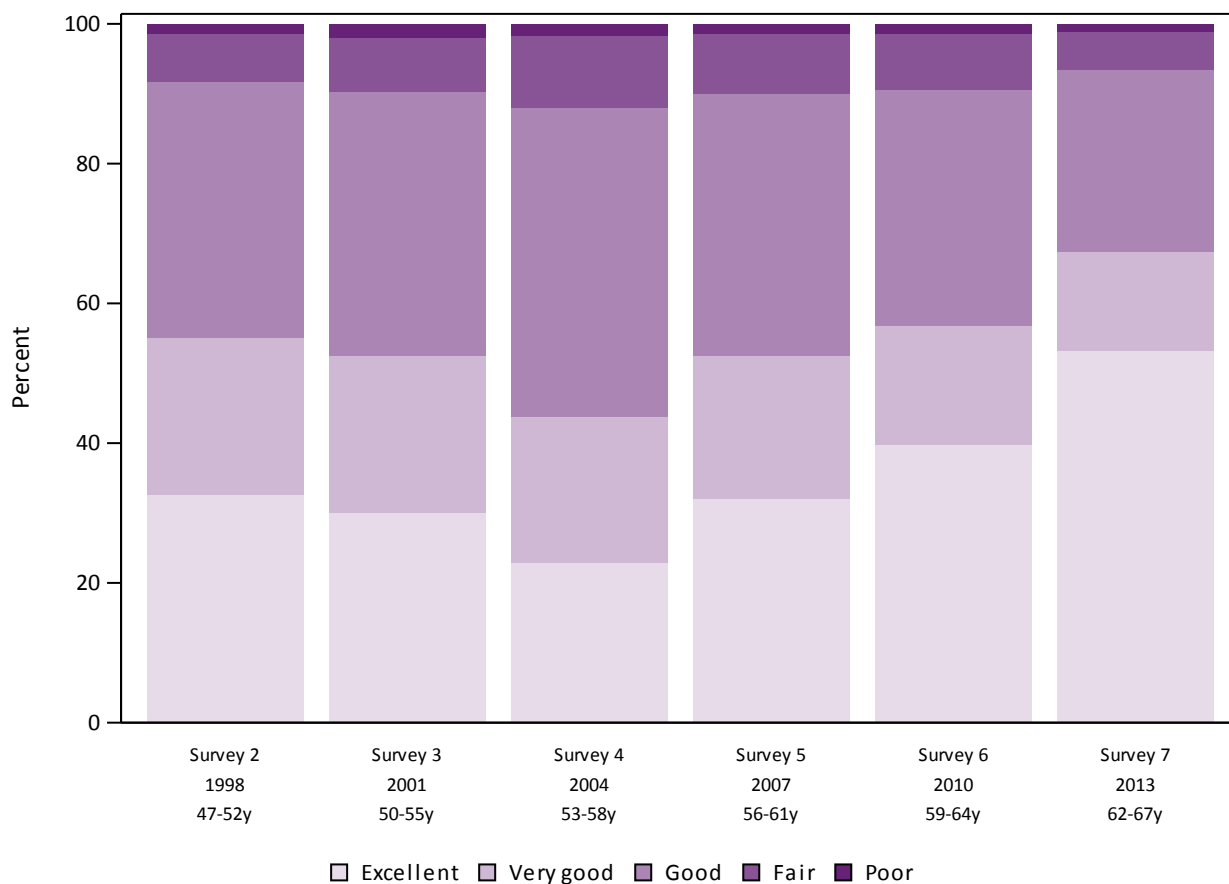


**Figure 3-33 Ratings of access to a bulk-billing GP from Survey 2 to Survey 7 (N=7,034).**

At Survey 2, 65% 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 45 % of the women reported that access was “excellent”, “very good” or “good”. In Surveys 5, 6 and 7, this percentage increased so that by Survey 7, 75% of the women responded that their access was “excellent”, “very good” or “good”.



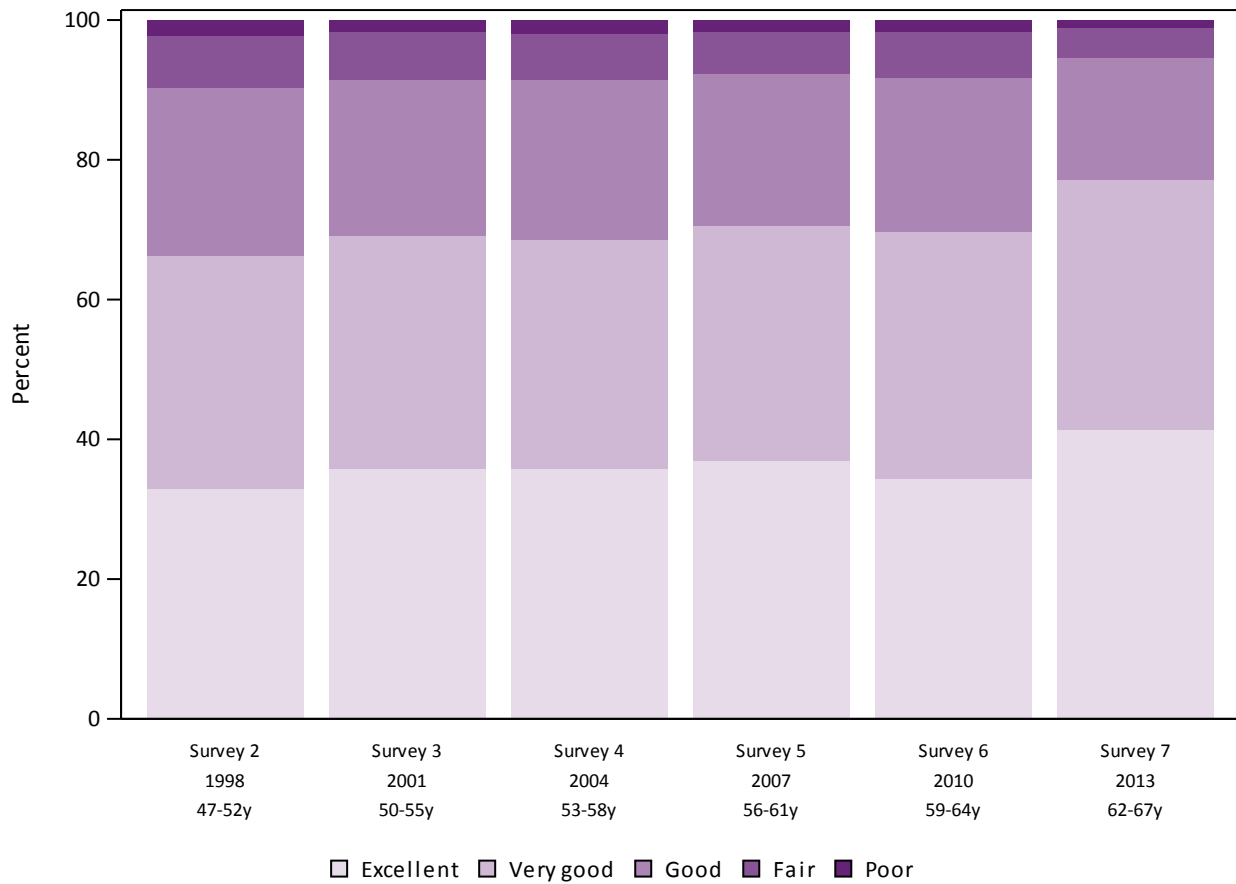
QUESTION: How would you rate the cost to you of your most recent visit to a GP? (Not asked at Survey 1).



**Figure 3-34 Rating of cost of visit to GP from Survey 2 to Survey 7 (N= 7,260).**

Figure 3-34 mirrors the trends evident in the previous figure: at Survey 2 most women (90%) rated the costs of a visit to a GP as “excellent”, “very good” or “good”, but this percentage declined from Survey 2 to Survey 4 and then increased, so that by Survey 7, the overwhelming majority of women rated the cost of a GP visit as “excellent”, “very good” or “good”.

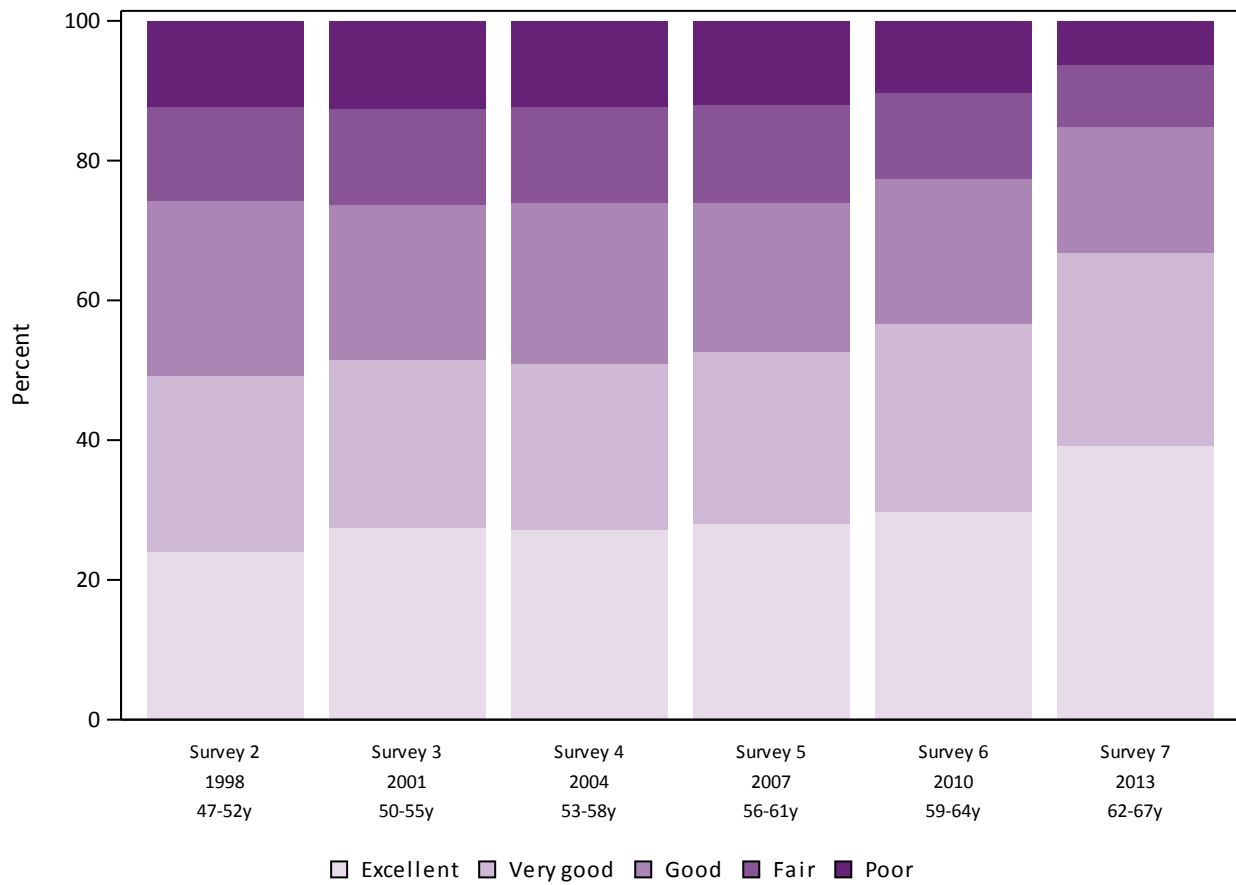
QUESTION: Thinking about your own health, how would you rate the hours when a GP is available? (Not asked at Survey 1).



**Figure 3-35 Ratings of hours of availability of GP from Survey 2 to Survey 7 (N=7,218).**

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.

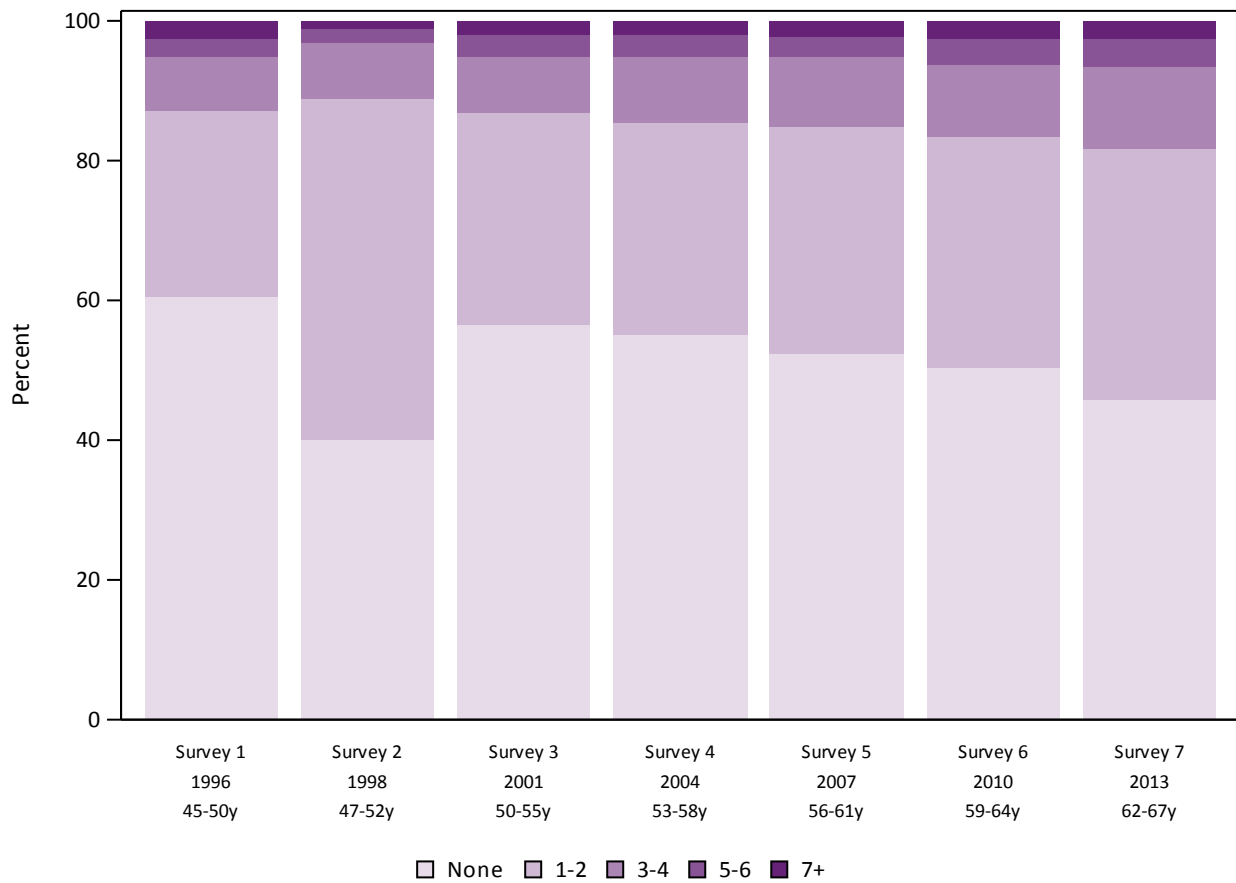
QUESTION: Thinking about your own health, how would you rate access to a female GP? (Not asked at Survey 1).



**Figure 3-36 Ratings of access to a female GP from Survey 2 to Survey 7 (N=7,048).**

There has been a progressive improvement in women’s ratings of access to a female GP over the study period. By Survey 7, almost nine out of ten women rated access to a female GP as “excellent”, “very good” or “good”.

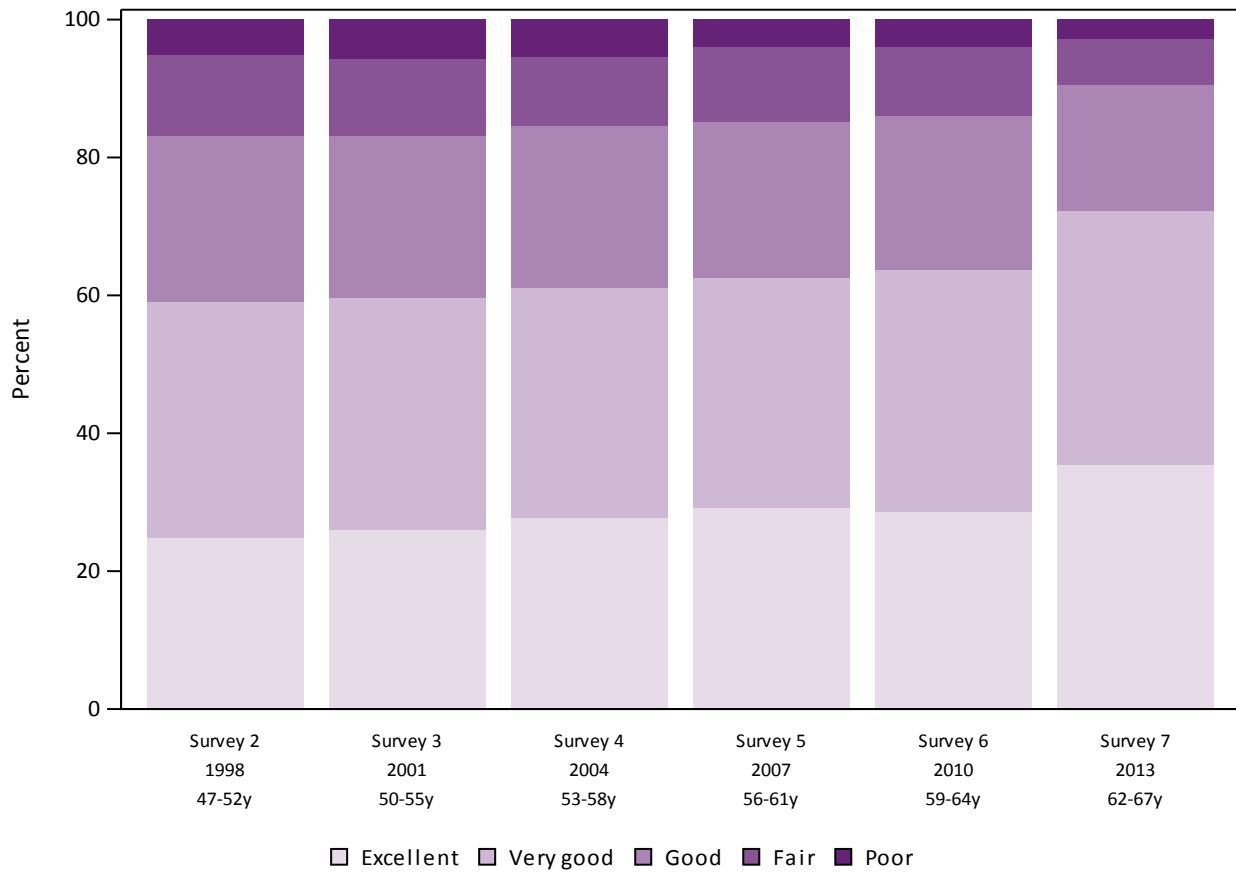
QUESTION: How many times have you consulted a *specialist doctor* for your own health in the last 12 months?



**Figure 3-37 Consultations with a specialist in the previous 12 months from Survey 4 to Survey 7 (N=7,060).**

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 7, 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).

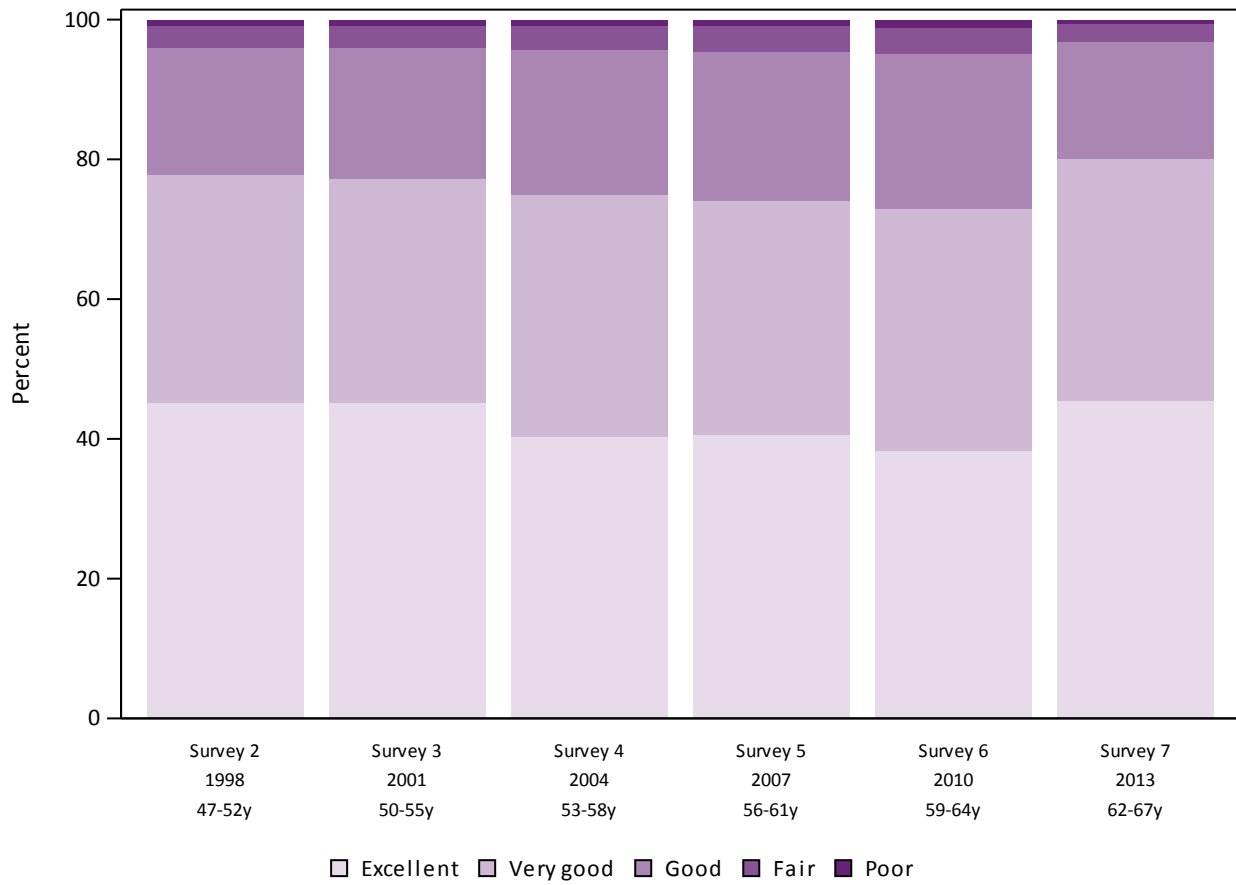


**Figure 3-38 Access to specialist doctors from Survey 2 to Survey 7 (N=7,263).**

Access to specialist doctors was rated as “excellent”, “very good” or “good” by 85% of women at Survey 2 and this increased to 90% by Survey 7.

### 3.6.2 Screening

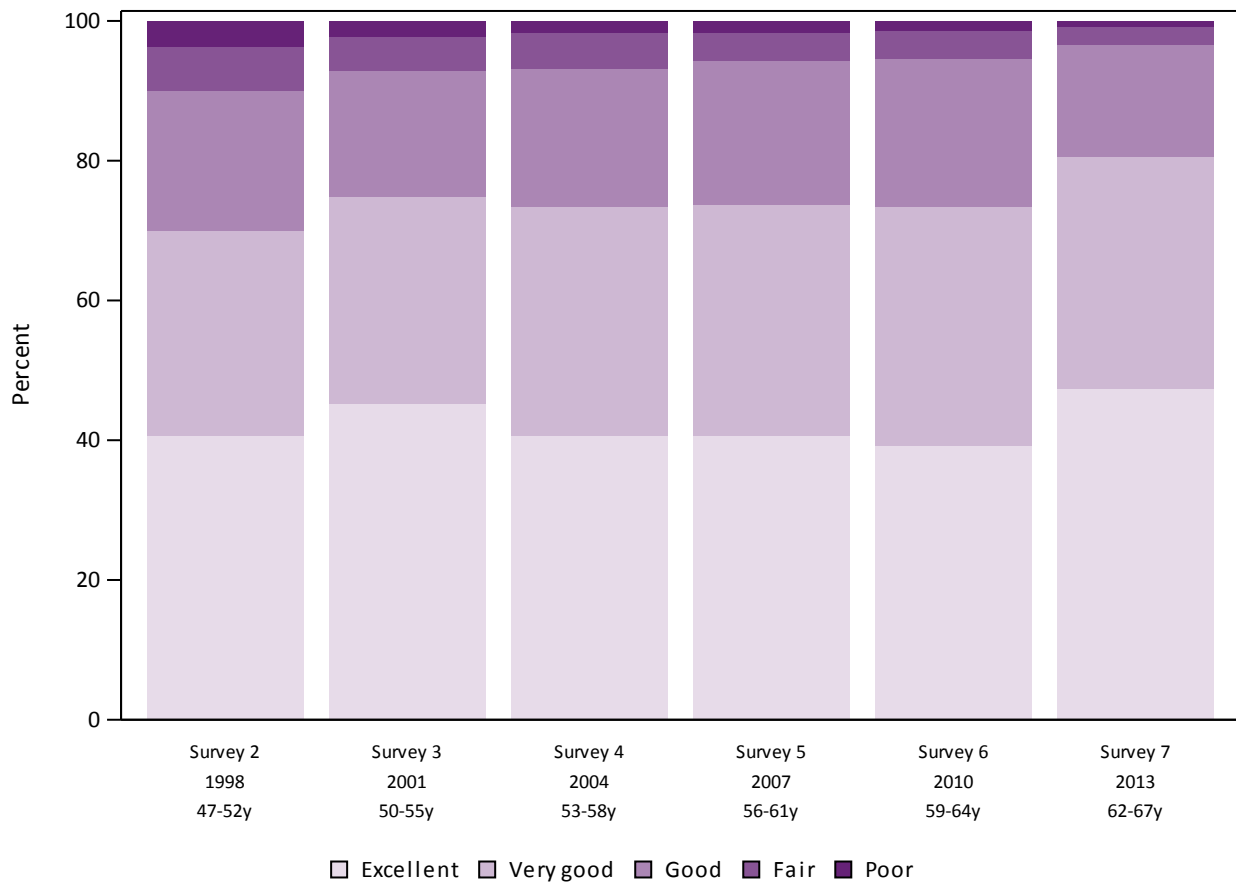
QUESTION: Thinking about your own health care, how would you rate ease of obtaining a Pap test? (Not asked at Survey 1).



**Figure 3-39 Access to Pap test from Survey 2 to Survey 7 (N=6,876).**

Similar to previous responses from the women regarding access to healthcare, the substantial majority at Surveys 2 to 7 reported that access to a Pap test was “excellent”, “very good” or “good”.

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

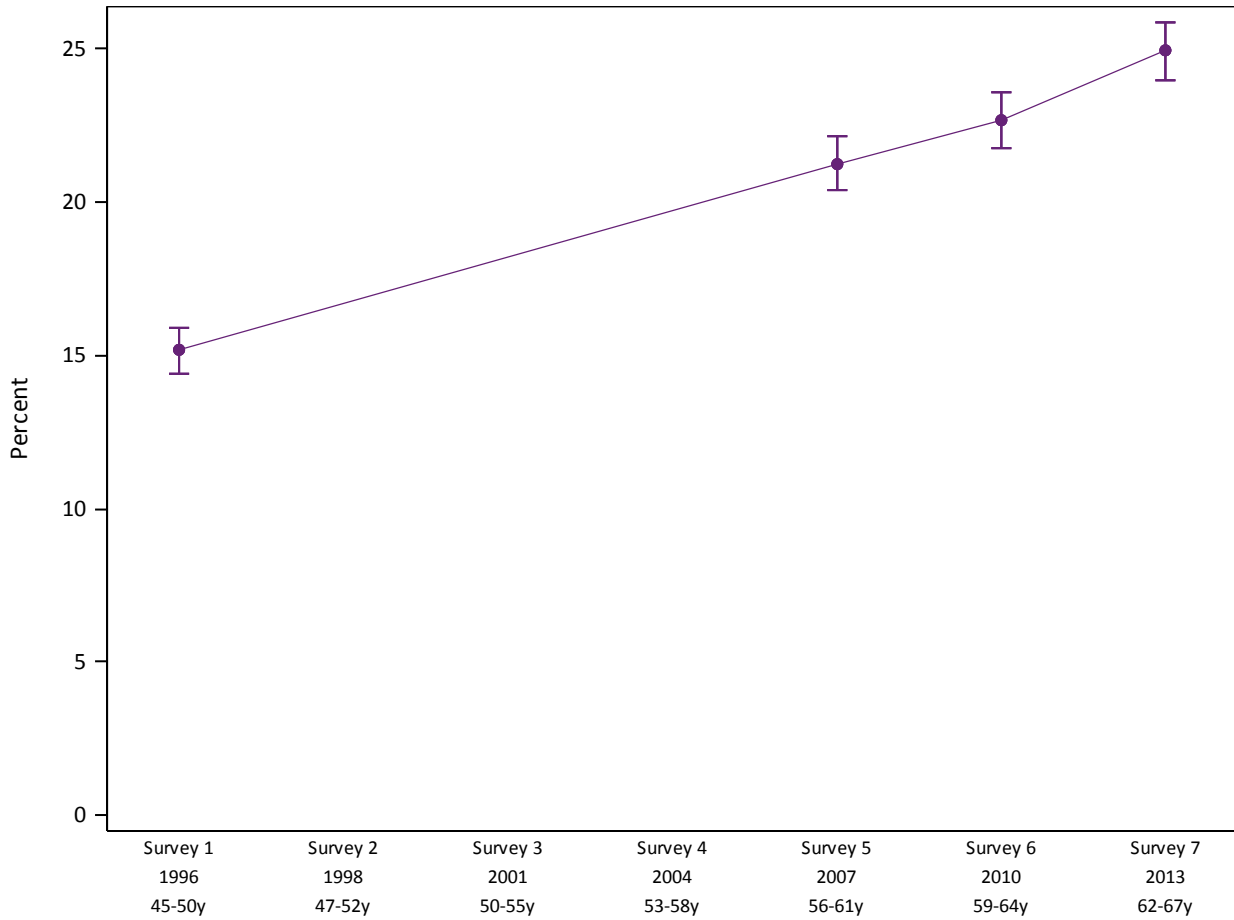


**Figure 3-40 Access to mammography (N=7,158).**

At Survey 2, around 10% 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 7, only 5% 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 3-41 Percentage of Hospital admissions in past 12 months from Survey 1 to Survey 7 (N=8,321).**

15% 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 7, almost 25% 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).

A majority of women rated their access to a hospital as “excellent” or “very good”, and this proportion increased over time. By Survey 7, around 80% rated their access to a hospital as “excellent” or “very good”, with only 5% of women rating their access as “fair” or “poor”.

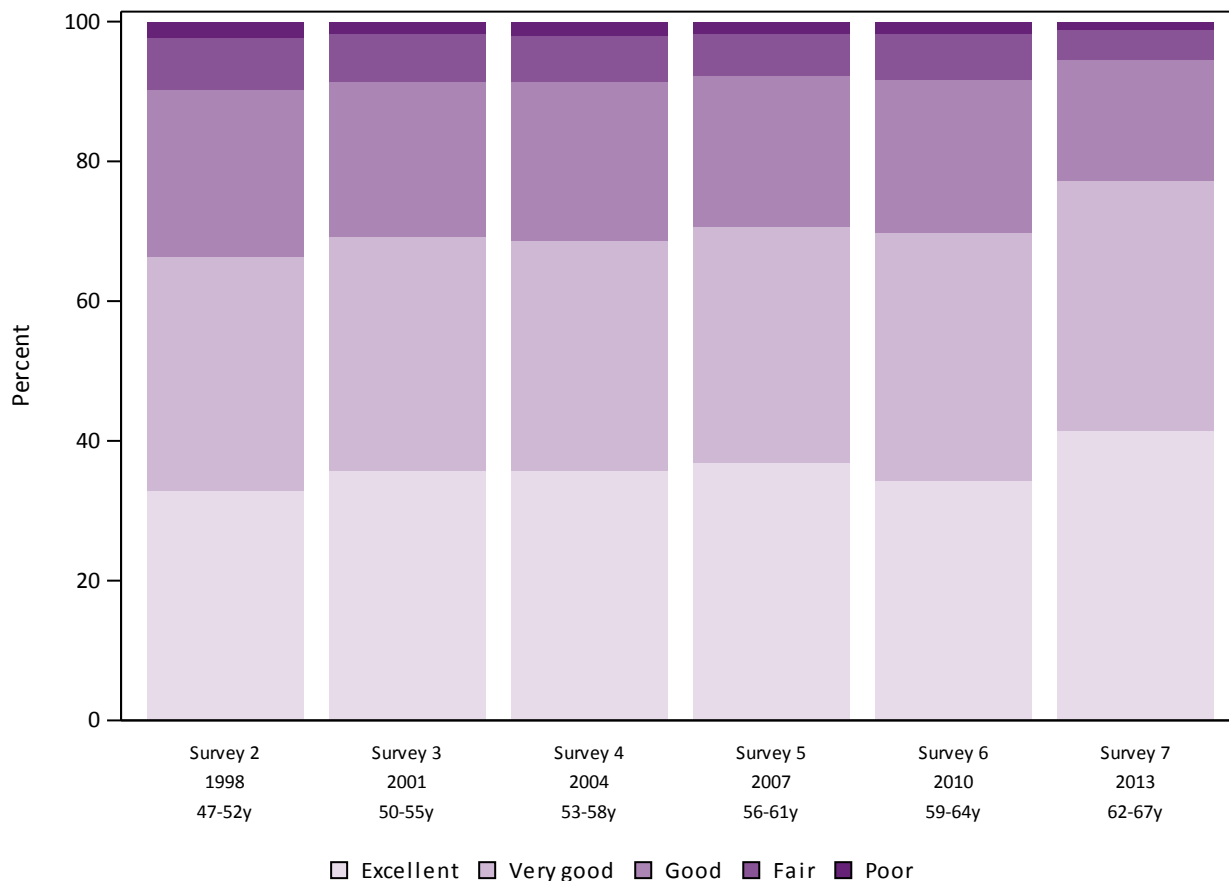


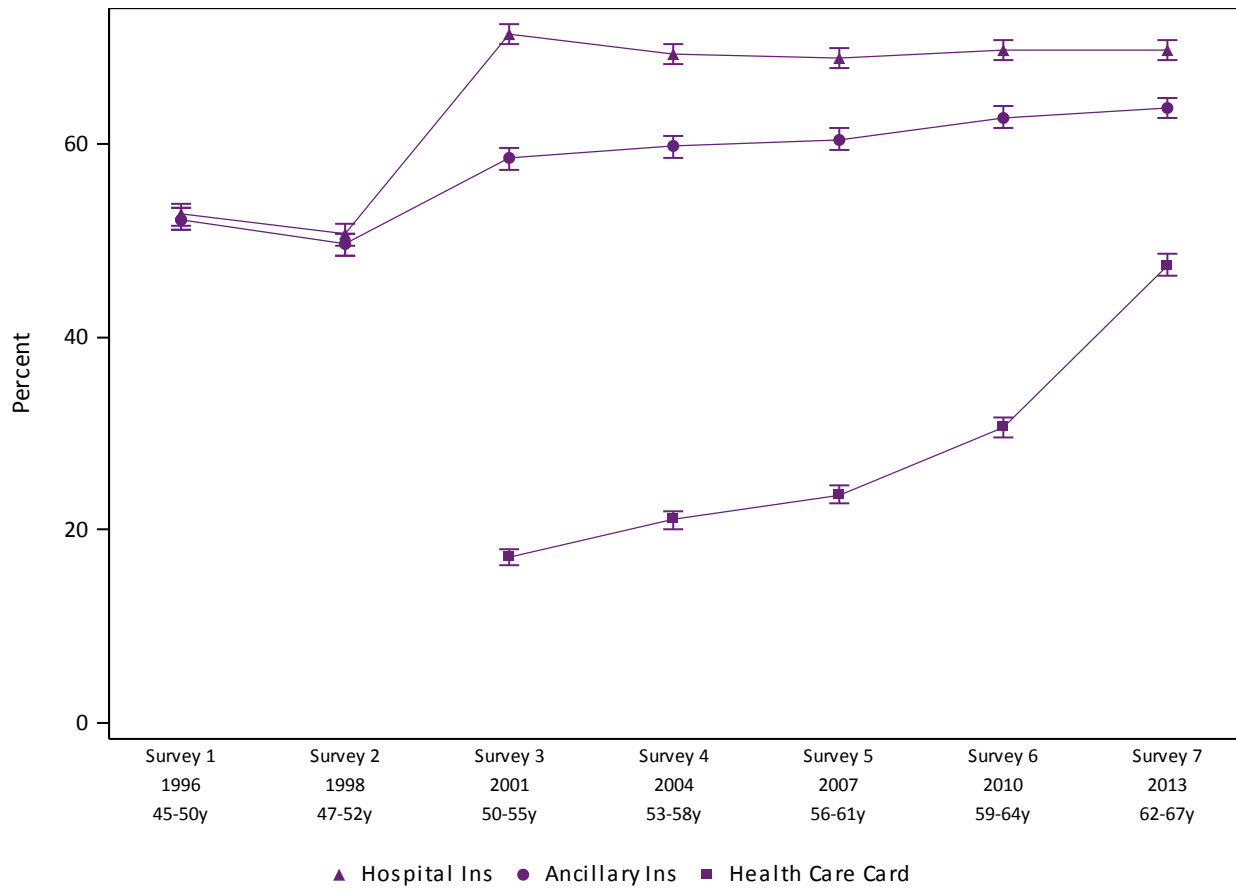
Figure 3-42 Rating of access to a hospital if needed from Survey 2 to Survey 7 (N=7,218).

### 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 3-43 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 = 7,250; N for private ancillary insurance =7,214; and N for health care card =7,644).**

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 to 42% at Survey 7, 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 220 papers that used data from the 1946-51 cohort. These publications are listed in Appendix A. The major themes are:

- Chronic conditions (more than 50 papers)
- Weight, nutrition and physical activity (more than 50 papers)
- Mental health papers (more than 25 papers)
- Health service use and systems (more than 25 papers)
- Reproductive health (more than 20 papers)
- Methodology (more than 20 papers)
- Complementary and alternative medicines (more than 15 papers)
- Social factors (more than 15 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**

- Brown WJ, Williams L, Ford JH, Ball K & Dobson AJ. Identifying the 'energy gap': Magnitude and determinants of five year weight gain in mid-age women. *Obesity Research*, 2005; 138: 1431-1441. 120 citations.
- Williams L, Germov J & Young A. Preventing weight gain: A population cohort study of the nature and effectiveness of mid-age women's weight control practices. *International Journal of Obesity*, 2007; 31: 978-986. 32 citations.
- Burton N, Brown W & Dobson A. Accuracy of body mass index estimated from self-reported height and weight in mid-aged Australian women. *Australian and New Zealand Journal of Public Health*, 2010; 33(6): 620-623. 35 citations
- Ball K, Crawford D & Mishra G. Socio-economic inequalities in women's fruit and vegetable intakes: A multilevel study of individual, social and environmental mediators. *Public Health Nutrition*, 2006; 9(5): 623-630. 126 citations.

### **Menopause**

- Brown WJ, Mishra GD & Dobson AJ. Changes in physical symptoms during the menopause transition. *International Journal of Behavioural Medicine*, 2002; 9(1): 53-67. 44 citations
- Berecki-Gisolf J, Begum N & Dobson A. Symptoms reported by women in mid-life: menopausal transition or ageing? *Menopause*, 2009; 16(5): 1021-1029. 38 citations

### **Complementary and Alternative Medicines**

- Adams J, Sibbritt D, Easthope G & Young A. The profile of women who consult alternative health practitioners in Australia. *Medical Journal of Australia*, 2003; 179(6): 297-300. 96 citations.
- Adams J, Sibbritt D & Lui CW. The urban-rural divide in complementary and alternative medicine use: a longitudinal study of 10,638 women. *BMC Complementary & Alternative Medicine*, 2011; 11(2): 20 citations.

### **Caring**

- Lee C & Gramotnev H. Transitions into and out of caregiving: Health and social characteristics of mid-age Australian women. *Psychology and Health*, 2007; 22(2): 193-209. 26 citations.
- Berecki-Gisolf J, Lucke J, Hockey R & Dobson A. Transitions into informal care and out of paid employment of women in their 50's: A study of cause and effect. *Social Science and Medicine*, 2008; 67(1): 122-127. 24 citations

### **Abuse**

- Loxton D, Schofield M, Hussain R & Mishra G. History of domestic violence and physical health in mid-life. *Violence Against Women*, 2006; 12(8): 715-731. 17 citations
- 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. 24 citations

### **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. 35 citations

#### **4.1.2 Reports to the Department of Health**

##### **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:

**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.

#### **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.

## **4.2 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:

- 2010 Australian Government's National Women's Health Policy (Australian Government Department of Health and Ageing, 2010)
- 2014 Australian Government's Physical Activity Guidelines (Australian Government Department of Health, 2014)

### **4.2.1 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.

### **4.2.2 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.

### 4.3 Capacity building activities in women's health research

Between 1996 and 2014, 28 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, and highlights a few of the researchers.

#### ALSWH RESEARCH HIGHER DEGREE (PHD OR MASTERS) STUDENTS COMPLETED USING 1946-51 COHORT DATA

Student	Topic	Institution	Degree	Completion date
Anne Young	General Practitioner utilisation among women in Australia.	The University of Newcastle	PhD	1999
Associate Professor Anne Young is now Director of the Strategy, Planning and Performance Unit, University of Newcastle.				
Amanda Patterson		The University of Newcastle	PhD	1999
Jenny Powers		The University of Newcastle	Master of Medical Statistics	2000
Barbara Reen	Exploring the feelings of depression, and understanding the nature and origin of these experiences among rural and remote mid-age women.	The University of Newcastle	Master of Medical Science	2000
Sue Outram	Women's experiences of seeking help for emotional distress	The University of Newcastle	PhD	2003
Lauren Williams	What factors influence weight change at menopause?	The University of Newcastle	PhD	2003
Melissa Graham	Women with menstrual symptoms, treatments tried, hysterectomy and satisfaction with outcomes	La Trobe University	PhD	2003
Deborah Loxton	The lifetime prevalence of, and factors associated with reporting of domestic violence by mid-age women in Australia	University of New England	PhD	2003
Associate Professor Deborah Loxton is now Deputy Director of the Australian Longitudinal Study on Women's Health, and is also Deputy Director of the Research Centre for Gender, Health and Ageing at the University of Newcastle.				
Emma Harley	Predictors of psychosocial recovery after change in physical health status: The impact of age on 'good' recovery	The University of Queensland	PhD	2004
Karen Furlong	Epidemiology of osteoporosis in Australian women	The University of Queensland	Masters	2006
Gabrielle Rose	The politics of breathing: A cultural analysis of asthma in Australia	The University of Queensland	PhD	2006
Dr Sally Price	Carers and psychosocial correlates over time: A longitudinal analysis.	The University of Queensland	Doctor of Psychology	2006
Karen Furlong	Epidemiology of osteoporosis in Australian women	The University of Queensland	Master of Public Health	2006
Leah Collins	Investigating quality of life and depression in middle aged and older Australian women with cancer	The University of Melbourne	Doctor of Psychology	2008
Dr Leah Collins is the Policy Officer Professional Practice with the Australian Psychological Society.				
Karly Furber	Long term health impacts of intimate partner violence on mid-aged Australian women	The University of Newcastle	Master of Clinical Epidemiology	2008
Nadine Smith	Biopsychosocial correlates of women's mental health: A longitudinal analysis of self-reported mental health across three generations of Australian women	The University of Queensland	PhD	2008
Dr Nadine Smith is now a senior researcher with the NSW Bureau of Crime Statistics and Research.				
Rosemary Korda	Socioeconomic inequalities in women's use of health care services in	Australian National University	PhD	2008

Student	Topic	Institution	Degree	Completion date
	Australia			
Meredith Tavener	Your bloomin' lot: An empirical study of the popular baby boomer stereotypes	The University of Newcastle	PhD	2009
Heather McKay	An investigation into the experiences of Australian women who have never given birth to a child	The University of Melbourne	PhD	2009
Lisa Beatty	The correlates and outcomes of breast-cancer in the mid-age data	Flinders University	PhD	2009
Nur Hafidha Hikmayani	Cardiovascular drugs utilisation in diabetic women	The University of Newcastle	Master of Clinical Epidemiology	2009
Kore Yiee Wong	Differences in causes of death of urban-rural women	The University of Queensland	Master of Biostatistics	2009
Hanh Tran	Correlates of mortality among middle-aged women: Results from a nationally representative prospective Australian cohort study.	The University of Queensland	Master of Epidemiology	2012
Leanne Fray	Work-life tensions: Time pressure, leisure and wellbeing among dual earner parents	The University of Newcastle	PhD	2012
Nicole Au	Obesity in Australian: An economic perspective.	Monash University	PhD	2012
Emma Poulsen	Complementary and alternative medicine use in the Australian baby boomer and older adult populations	The University of Queensland	Doctorate Clinical Health	2012
Dr Poulsen is now a clinical psychologist at the Acquired Brain Injury Outreach Service (Brisbane)				
Melissa Harris	When life's a pain: The relationship between stress and modifiable psychological factors in arthritis	The University of Newcastle	PhD	2013
Jane Rich	An interdisciplinary investigation into the relationships between drought and mental health in Australia	The University of Newcastle	PhD	2014
Sue Conrad	Perceived neighbourhood cohesion and health among mid-aged Australian women	The University of Queensland	PhD	2014

There are 16 students currently enrolled in Masters or 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.



#### **4.4 The identification of gaps and priorities for research on the health of mid-aged Australian women**

The research produced by ALSWH and that 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. The recent provision of linked Medicare data will greatly enhance analytic capacity in these areas.

Particular priority areas for women's health research among those approaching their late sixties 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 who 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 Survey 7.

This report shows that the women in this cohort undertake a substantial amount of unpaid work, including caring for children or adults. Carers are at risk of poorer mental health, poorer social support and higher stress levels and reduced participation with the work force, and understanding how these roles fit into women's lives and impact on health as women age has important implications for policy.

This report has demonstrated the recent onset of serious chronic conditions among this cohort, including heart disease, stroke, and diabetes. The data collected over the past 17 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. It is unclear whether this will continue as women retire and become eligible for health care subsidies (Health Care Cards). 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 will provide a rich source of information to help form the evidence base for policy development.

## 5 APPENDIX A: PUBLICATIONS USING 1946-51 COHORT DATA

- Brown WJ, Bryson L, Byles JE, Dobson AJ, Manderson L, Schofield M & Williams G. Women's Health Australia: Establishment of the Australian Longitudinal Study On Women's Health. *Journal of Women's Health*, 1996; 5(5): 467-472.
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## 6 APPENDIX B: Reports prepared for the Department of Health and other agencies

### 6.1 Major Reports (2006 – 2013)

- **Mental Health: Findings from the Australian Longitudinal Study on Women's Health.** (2013). Holden L, Dobson A, Byles J, Loxton D, Dolja-Gore X, Hockey R, Lee C, Chojenta C, Reilly N, Mishra G, McLaughlin D, Pachana N, Tooth L & Harris M. Major report prepared for the Australian Government Department of Health and Ageing. [http://www.alsw.org.au/images/content/pdf/major\\_reports/2013\\_major%20report%20H.pdf](http://www.alsw.org.au/images/content/pdf/major_reports/2013_major%20report%20H.pdf)
- **Adherence to health guidelines: Findings from the Australian Longitudinal Study on Women's Health.** (2012). Dobson A, Byles J, Brown W, Mishra G, Loxton D, Hockey R, Powers J, C Chojenta, Hure A, Leigh L, Anderson A. [http://www.alsw.org.au/images/content/pdf/major\\_reports/2012ALSWHMajorReportG.pdf](http://www.alsw.org.au/images/content/pdf/major_reports/2012ALSWHMajorReportG.pdf)
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- **Trends in Women's Health: Results from the ALSWH – Priority conditions, risk factors and health behaviours.** (2006). Brown W, Byles J, Carrigan G, Dobson A, Dolja-Gore X, Gibson R, Hockey R, Powers J, Russell A, Spallek M & Young A. Major report prepared for the Australian Government Department of Health and Ageing. [http://www.alsw.org.au/images/content/pdf/major\\_reports/2006\\_major\\_report\\_a.pdf](http://www.alsw.org.au/images/content/pdf/major_reports/2006_major_report_a.pdf)

## 6.2 Other reports

### Urinary incontinence

- **Characteristics of Australian women with incontinence according to incontinence severity and treatment-seeking behaviour: Results from the Australian Longitudinal Study on Women's Health.** Miller Y. Report prepared for Eli Lilly, March 2004.
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