Report 32

women's health australia

the australian longitudinal study on women's health

December 2009

The University Of Queensland AUSTRALIA in association with The University of Newcastle AUSTRALIA

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EXECUTIVE SUMMARY

1. This report covers the twelve-month period from January to December 2009.

2. Survey 5 for the 1973-78 cohort was mailed to 12,022 participants on 31st March 2009. As at 8th December 2009, 57% of the surveys have been received.

3. Preparation has commenced for Survey 6 of the 1946-51 cohort, scheduled to be mailed in March 2010. A pilot survey was sent to 347 participants on 11th August and 274 (79%) were returned by the end of November. Refinement of the survey questions for Survey 6 for the 1946-51 cohort is underway, and will continue into 2010.

4. A number of important methodological issues have been examined.

5. After receiving ethical approval in 2008 for linkage of ALSWH survey data with health information from the Medicare database from 1996 and the Pharmaceutical Benefits Scheme from 2002 without the need to ask for individual consent, further development has been slow, and ALSWH will seek to progress this issue in 2010.

6. A major report has been prepared for the Department of Health and Ageing on reproductive health amongst Australian women. This report provided an overview of birth rates across the cohorts, and then focused on women of the 1973-78 cohort, examining their use of contraception, aspirations for motherhood, fertility and infertility, maternal health, well-being and health behaviours, and experiences of balancing motherhood and paid work.

7. Thirty-eight papers have been published or accepted for publication in national and international scientific journals during the reporting period. Forty-four presentations have been made to scientific and professional audiences both in Australia and internationally. Twelve postgraduate students are currently working on aspects of the project.

1. COLLABORATIVE RESEARCH ACTIVITIES

1.1 Scientific meetings and teleconferences among the research team

The Steering Committee is responsible for the overall direction of activities and resources to ensure that timelines and deliverables are met. Meetings and teleconferences are conducted at least once a month among the Steering Committee, with agendas, notes and minutes circulated to all investigators. Steering Committee membership is flexible and decided on an annual basis, so that a group of at least six investigators is involved at this level at any one time. The current Steering Committee members are:

- Professor Annette Dobson (Chair)
- Professor Julie Byles
- Professor Christina Lee
- Professor Wendy Brown
- Associate Professor Nancy Pachana
- Associate Professor David Sibbritt
- Dr Deborah Loxton
- Dr Jayne Lucke
- Dr Leigh Tooth

Steering Committee meetings during the reporting period have been held by teleconference on 18th February, 18th March, 15th April, 13th May, 17th June, 22nd July, 19th August, 16th September, 14th October, 11th November and 9th December.

The Data Management Group is responsible for all technical issues involving data quality, derivation of variables, checking and cleaning of data sets, linkage, and archiving. The group is chaired by David Fitzgerald (Data Manager – Surveys) and members in 2009 included Professor Annette Dobson (Study Director), Professor Julie Byles (Study Co-Director), Deborah Loxton (Deputy Director – University of Newcastle), Jayne Lucke (Deputy Director – University of Queensland), Anna Graves (Data Manager – Cohorts), and project statisticians and other staff including Xenia Dolja-Gore, Richard Gibson, Richard Hockey, Jenny Powers, Melanie Watson, Danielle Herbert, Cath Chojenta, Sam Brilleman, Nelufa Begum and Elizabeth Kent.

A quarterly update is provided to all investigators, staff, students, collaborators and others with an interest in the progress of the project. Quarterly updates for 2009 are shown in Appendix A.

1.2 New research findings

1.2.1 Current projects

Project: A127	Asthma amongst elderly women
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Ian Robinson (Research Centre for Gender, Health and Ageing, University of Newcastle)

The ALSWH survey question referring to asthma asked: "Have you been diagnosed or treated for asthma?" This question was included in all surveys for all three cohorts and by Survey 4, around 30% of the 1973-78 cohort women, 20% of the 1946-51 cohort women and 15% of the 1921-26 cohort women reported a diagnosis of asthma. Women from the 1973-78 and 1946-51 cohorts claiming for asthma medications (whether or not they reported having a diagnosis of asthma) were less likely to be married, and more likely to have difficulty managing on income than other women in the cohort. Women from the 1946-51 cohort claiming for asthma medications (whether or not they reported the diagnosis of asthma) had lower levels of education. These effects were not as apparent for women from the 1921-26 cohort.

Across all cohorts, women with no self-reported asthma and no asthma medications had the lowest probability of reporting other conditions at Survey 4. Women who claimed for asthma medications were more likely to have depression than were those who did not claim for asthma medications; similarly, depression was more common among women with asthma than among women without this condition. Among women from the 1973-78 cohort and the 1921-26 cohort, back pain was also slightly more common among women with asthma than without, regardless of asthma medications; whereas for women from the 1946-51 cohort, back pain was less common among women with asthma medications than among other women. Among women from the 1946-51 cohort, heart disease and diabetes were more commonly reported by those identified as using asthma medications (regardless of self-reported asthma). Similar results were observed for 1921-26 cohort women, except there was no apparent difference in reporting of diabetes. Women from the 1973-78 cohort were not asked if they had arthritis, but among women from the other cohorts, arthritis was most common among those with asthma (among 1921-26 cohort women) and among those with asthma and asthma medications (among 1946-51 cohort women). Women with PBS claims for asthma medications were more likely to report their health as fair or poor than women without medications. Similarly, women with asthma and medications were most likely to report fair or poor self-rated health (1946-51 and 1921-26 cohorts) and women with no asthma and no asthma medications were least likely to report only fair or poor health.

Project: A172	Gestational diabetes: Risk factors and consequences
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Mireille van Poppel (Free University, Amsterdam) • Prof Adrian Bauman (University of Queensland) • Dr Hidde van der Ploeg (University of Sydney • Ms Tien Chey (University of Sydney)

This project aims to determine the factors associated with development of gestational diabetes, by assessing whether women who have had gestational diabetes differ from a matched control sample with regard to physical and mental health and lifestyle behaviours. The consequences of having had gestational diabetes for other health outcomes and lifestyle behaviours will also be explored.

A paper describing the 'null' findings has been written, and publication is being sought. A second paper (consequences) is in analysis. As this is a case control analysis there is considerable work in creating a data set with age / parity matched controls.

Project: A133B	Arthritis and depression: Burden of illness and management
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Dr Paul Kowal (World Health Organization) • Assoc Professor Lynne Parkinson (School of Medicine and Public Health, University of Newcastle) • Richard Gibson (School of Medicine and Public Health, University of Newcastle) • Ian Robinson (School of Medicine and Public Health, University of Newcastle)
Funding ource:	Arthritis Australia and the Hunter Medical Research Institute

Chronic arthritis is the most common cause of activity limitation and disability among mid-aged and older women in developed countries. Arthritis has been identified as the reason for 15% of residential aged care admissions for those without dementia and about one third of admissions for those with dementia. Arthritis is Australia's major cause of disability and chronic pain, and more than 60% of all people with arthritis are women. In 2004, there were 3.4 million Australians with arthritis. In 2002, arthritis and musculoskeletal conditions were established as a National Health Priority Area, in recognition of the major health and economic burden these conditions place on our community. With demographic ageing, it is expected that by 2020, one in five Australian people will have arthritis. The broad aim of this project is to investigate the effect of arthritis on health and quality of life for older Australian women.

Arthritis is not a natural part of ageing. Numerous cost-effective treatments are available for arthritis, including surgical and pharmaceutical interventions as well as psychosocial and public health interventions such as weight loss and education programs. Arthritis is associated with complex management needs, and management is also complicated by the presence of comorbid conditions-comorbidity rates are highest among older people with arthritis. The reality is that older women do not live with only one condition. Arthritis is very common and when arthritis underlies other conditions like cardiovascular disease and diabetes, it can impact on the treatment of all conditions present. Despite the burden imposed by arthritis, there has been little examination of the influence of multiple morbidity on health care use, decision making and preferences for care, including the influence of and impact on psychosocial factors for the group of older women with arthritis. Further, several recent studies have shown that there is an increased risk of depression associated with chronic diseases, including arthritis. However, it is not clear yet how depression influences health outcomes associated with comorbidities and how screening and treatment of depression may improve health outcomes. This program of work specifically explores the prevalence and incidence of arthritis over time, the burden of illness associated with arthritis over time, the effect of comorbidities on arthritis impact, with a focus on depression as an important and influential comorbidity; the interaction of arthritis and depression over time; management of these conditions, particularly pharmacotherapy (using a quality use of medicines framework) and surgeries, and the health care costs related to arthritis and arthritis and depression, through a secondary analysis of ALSWH survey and linked Medicare (MBS), Pharmaceutical Benefits Scheme (PBS) and the NSW Admitted Patients Data Collection (APDC) data, and a qualitative exploration of the lived experience and self-management of arthritis.

Our continuing work has confirmed that arthritis is very common (63% of 7088 older ALSWH women, aged 77-85 years in 2005, reported doctor diagnosis of arthritis); it has a significant impact on health and quality of life over time (quality of life decreases more rapidly for those with arthritis); and leads to significant medication use (60% of women with arthritis take arthritis medication in 12 months). We have also shown that when women have comorbid depression, the impact of arthritis on quality of life and health care use is intensified. In 2005, 5.7% reported arthritis with comorbid depression. Women with arthritis and comorbid depression made more family doctor visits in last 12 months, were more

likely to visit a health provider in last 12 months, were more likely to have hip surgery, made more arthritis PBS medicine claims; and had lower physical and social functioning, despite pain level, than women with arthritis only. We will continue to track prevalence and incidence of arthritis over time, changes in burden of illness associated with arthritis over time, the effect of comorbidities on arthritis impact, and management of these conditions through a secondary analysis of ALSWH survey and linked MBS and PBS data.

A recent new stream to this work aims to examine health care costs associated with arthritis and comorbidities, in collaboration with health economics experts. Initially this is being explored through MBS and PBS data. In 2010, the NSW Admitted Patients Data Collection (APDC), with linkage through the Centre for Health Record Linkage (CHeReL), will also be included, in work linked to EOI A256: "Identifying the predictors of hospitalisation for women with single and multiple comorbid chronic conditions". This new linkage will provide a unique opportunity to explore the burden and economic costs of arthritis for older women, and enable analyses to be undertaken of the extent to which arthritis impacts on cumulative hospital service usage and costs for people. The combination of extensive demographic, psychosocial and health survey data linked with MBS, PBS and now APDC data means that the burden and economic costs of arthritis for women in Australia can be examined more rigorously than in any previous work.

In 2009, a Reference Group for the Arthritis and Older Women program of work (including representatives from across all relevant disciplines) will be convened to ensure that the best approach to this work is taken, and that the best collaborative mix supports both publications and grants in this program.

Project: A134	Health care for women with diabetes living in rural areas: A longitudinal study of access to care and health care outcomes
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Dr Julia Lowe (University of Newcastle) • Assoc. Professor Anne Young (University of Newcastle)

The ALSWH provides an opportunity to examine the health services provided to women with diabetes in Australia, as well as monitoring changes in their health and well being, and the impact of new initiatives in diabetes care including the Annual Cycle of Care Medicare item that was introduced in 2001. For this study, consenting women's survey data were linked to Medicare (MBS) and Pharmaceutical Benefits Scheme (PBS) databases. This allowed women to be classified according to their use of specific Medicare items for haemoglobin A1C (HbA1c) analysis and Diabetes Annual Cycle of Care (ACC).

Claims for ACC were identified for 29% of 403 women with diabetes from the 1946-1951 cohort, and 40% of 616 women with diabetes from the 1921-26 cohort. In both age groups, women who had ACC were more likely to be those who were already overweight, had more GP visits and more medications, and who were more likely to have visits at 'no cost' than other women with diabetes. Women from the 1946-1951 cohort who had ACC were also more likely to have difficulty managing on their income and were less likely to have hypertension. Among women from the 1921-26 cohort, those who had ACC were less likely to have difficulty managing on their income and less likely to have been born in Australia. There was no association between ACC and other comorbidities or country of birth. In both cohorts, women who developed diabetes after the first survey (incident cases) tended to have better SF-36 health profile scores and lower pharmaceutical and Medicare costs than those who reported diabetes on the first survey (prevalent cases). ACC was not associated with statistically significantly higher costs in any group. Among women in the 1946-1951 cohort with prevalent diabetes, those with ACC tended to have worse physical and social function scores at the time the ACC was introduced. These women continued to have poorer scores at subsequent surveys when compared with other women with diabetes.

In 2009 a paper was accepted for publication by the *Journal of Evaluation in Clinical Practice*, and a chapter is in preparation for a book on women and diabetes to be published in 2010.

Project: A231	Exploring self report of osteoporosis in relation to urinary incontinence and pelvic organ prolapse
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Assoc. Professor Pauline Chiarelli (School of Health Sciences, University of Newcastle) • Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle)

This study explores the association between osteoporosis, pelvic organ prolapse, and urinary incontinence in Australian women. It aims to:

- explore the development of pelvic organ prolapse in women diagnosed with osteoporosis and related variables.
- explore the onset of urinary incontinence and related variables longitudinally in relation to women diagnosed with osteoporosis.

We expect that osteoporosis could be one factor in contributing to the development of incontinence in women, through the impact of back pain on abdominal muscles and on the effect of the altered spinal architecture on the structure of pelvic organs and pelvic organ pressure.

The initial data analysis shows a significant association between urinary incontinence and self report of osteoporosis in women in the 1946-51 and 1921-26 cohorts including:

- Area of residence
- General health
- Health Change
- Bodily pain
- Hysterectomy
- Ovaries removed
- Pelvic organ prolapse
- HRT
- Menopause
- Breathing difficulties
- Chest pain
- Stiff joints
- Back pain
- Fracture
- Urine burns and stings
- Leaking urine
- Constipation
- BMI
- Exercise status
- Disability status
- Medications
- Rheumatoid arthritis
- Bone density
- Physical functioning
- Age menopause began

The literature has been explored in relation to these factors, to help determine which factors will be entered into the logistic regression, and to provide the framework for the development of the write-up of the paper. A significant association was also noted between self report of osteoporosis and pelvic organ prolapsed, and in order to get a clear picture of the association between self report of osteoporosis and pelvic organ prolapse it is proposed that these two variables (urinary incontinence and pelvic organ prolapse) might be better written as separate studies. This is yet to be decided.

Project: W062	Depression and cardio-vascular disease in a cohort of mid-aged Australian women
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Deirdre McLaughlin (School of Population Health, University of Queensland) • Dr Dimitrios Vagenas (School of Population Health, University of Queensland) • Dr Janneke Berecki (University of Calgary) • Professor Sandy McFarlane (Centre for Military and Veterans Health, University of Adelaide)

This study aims to:

- Analyse longitudinal data from women from the ALSWH 1946-51 cohort to examine the temporal relationship between depression and CVD in this group, particularly identifying women who have a history of depression and who may be at increased risk of developing CVD.
- Explore the relationship between current diagnosis of CVD and depression and how demographic, social and healthcare utilisation factors mediate the impact of depression. This knowledge will contribute to the development of tailored care and prevention strategies for women at risk for depression as well as CVD.
- Conduct a sub-study to collect additional data from women who have reported CVD. The study will obtain information on factors that may mediate the associations between depression and CVD (including social factors, professional support, medication, health and community services) and also to provide validation of diagnoses.

Women from the 1946-51 cohort who had no reported history of CVD prior to Survey 4 (2004) or Survey 5 (2007) were selected for this sub-study. 407 women who met the criteria for new cases of CVD, were mailed a questionnaire which included items that:

- assessed the women's depression and measured other aspects of their mental health
- sought to validate their CVD diagnosis
- obtained information on factors that may have helped or hindered them in coping with their CVD.

306 completed questionnaires were returned (75%), and data was entered and cleaned. To be classified as having heart disease, participants needed to:

- have doctor diagnosed heart attack (coronary thrombosis or myocardial infarction); or
- doctor diagnosed angina; or
- respond positively to questions on the Rose Angina Scale; or
- to have had an angioplasty, or
- a coronary artery bypass graft.

Confirmation of depression required that the participant:

- be currently taking an anti depressant medication or
- have a score of ≥ 10 on the Prime Health Questionnaire Depression Scale (PHQ9).

Initial analyses indicate that 152 women met the criteria for heart disease. Further exploratory analyses are currently being undertaken to assess the occurrence of depression within this group.

A presentation was made at the Heart Foundation Conference in Brisbane in May.

Project: A223A	Quality of life, emotional and general health, physical activity and medication use in survivors of cancer
ALSWH Investigators:	• Dr Deborah Loxton • Professor Julie Byles
Collaborative Investigators:	• Dr Efty Stavrou (Clinical & Population Perinatal Health Research, Kolling Institute of Medical Research) • Ms Deborah Baker (Monitoring Evaluation and Research Unit, Cancer Institute of NSW) • Ms Heather McElroy (Monitoring Evaluation and Research Unit, Cancer Institute of NSW) • Dr Christine Roberts (Clinical & Population Perinatal Health Research, Kolling Institute of Medical Research)

This study examines whether having had cancer in the past (for which data are already registered in the Cancer Council Registry and hence available via data linkage) determines current lifestyle, health status, medications used and dietary intake. It is hypothesized that, compared with women from the

1946-51 and 1921-26 cohorts who have not previously been diagnosed with cancer, survivors of cancer will:

- Have an increased use of anti-depression medication
- Have a higher incidence of chronic disease (e.g. heart and lung disease)
- Consume more alcohol
- Be less physically active
- Have a similar diet
- Have higher stress
- Have poorer mental health (SF-36 MCS)
- Have a lower self-reported quality-of-life

Where possible, responses will be matched to recommendations of published guidelines, such as the NHMRC alcohol guidelines, the daily dietary intake guidelines (e.g. 2 fruit, 5 vegetables; low fat milk; breads & cereals recommendations) and the Australian guidelines for physical activity. The study further aims to determine changes in lifestyle which occur after a diagnosis of cancer. Comparison of lifestyle behaviours, diet, emotional stress and physical activity before and after date of cancer diagnosis may be investigated. Short and long term alterations in lifestyle may also be elicited. Comparison with cancer-free participants will also be conducted. It is hypothesized that compared with habits and lifestyle before diagnosis of cancer, short-term (≤5 years) changes following diagnosis will include:

- Less alcohol consumption
- More physical activity
- Greater consumption of fruit and vegetables
- Better mental health

The longitudinal data from each survey for the 1945-51 and 1921-26 cohorts have been received from the data custodians and linkage with the NSW Central Cancer Registry was completed in June 2009.

Preparation of data for analysis of each cohort, which involves identifying first and subsequent events, identifying and deleting duplicate records, and identifying data outliers and developing decision rules for their management, is now being conducted. Preliminary data analysis will commence in the near future and a draft plan of the first investigation is being prepared.

Project: A035	Prevalence of back pain in Australian women and its relationship to incontinence and respiratory disease
ALSWH Investigators:	• Professor Christina Lee
Collaborative Investigators:	• Anne Russell (School of Nursing and Midwifery, University of Queensland) • Dr Michelle Smith (School of Health & Rehabilitation Sciences, University of Queensland) • Dr Paul Hodges (School of Health & Rehabilitation Sciences, University of Queensland)
Funding source:	National Health and Medical Research Council

Although the mechanism for the development of low back pain is not well understood, it has been extensively argued that it is associated with changes in control of the trunk muscles. Many trunk muscles, such as the diaphragm, transversus abdominis, and pelvic floor muscles, contribute to postural stability, but are also essential for respiration and continence. Altered function of these muscles in people with incontinence and respiratory disease may interfere with the physiology of spinal control, and provide a link to back pain. The aim of this project was to examine the association between back pain and disorders of continence and respiration in women.

Our initial cross sectional analysis of Survey 1 data was published in the *Australian Journal of Physiotherapy*. This study found that disorders of continence and respiration were strongly related to

frequent back pain after consideration of possible confounding factors. A secondary finding during this analysis was a strong relationship between gastrointestinal symptoms and back pain. Possible explanations for this relationship include referred pain through viscerosomatic convergence, altered pain perception, increased spinal loading when straining during defecation, or reduced support of the abdominal contents and spine secondary to changes in function of the abdominal muscles.

Our second analysis involved calculation of univariate and multivariate prevalence ratios to determine the associations between the development of back pain and change in the presence of incontinence and breathing difficulty between Surveys 1 and 2. This study found that women with pre-existing incontinence and women who developed incontinence or breathing problems were more likely to develop back pain than women without such problems. This provides the first evidence that the presence and/or development of incontinence and breathing problems are associated with the future development of back pain. This paper was published this year in the *Journal of Pain*.

Our final analysis involved division of women in each age cohort into subgroups who had no back pain, incontinence, breathing problems or allergy. Each data subset was analysed to determine the relationship between the development of the absent condition (i.e. back pain, incontinence, breathing problems or allergy) and the presence or development of the other conditions. This study identified that women with pre-existing and/or newly developed incontinence and breathing problems/allergy had an increase risk for the development of back pain, and women with pre-existing and newly developed back pain were more likely to develop incontinence and breathing problems. This suggests that common factors may contribute to the development of these conditions, at least in some individuals. As the trunk muscles contribute to each of these systems, altered muscular control may contribute to the development of these comorbidities.

Project: A240	PCOS in Australian women: A chronic illness with psychological, reproductive and metabolic features
ALSWH Investigator:	• Dr Deborah Loxton (ALSWH, University of Newcastle
Collaborators:	• Professor Helena Teede (Monash Institute of Health Services Research, Monash University) • Dr Amanda Deeks (Monash Institute of Health Services Research, Monash University) • Associate Professor Damian Jolley (Monash Institute of Health Services Research, Monash University) • Dr Lisa Moran (Monash Institute of Health Services Research, Monash University) • Melanie Gibson-Helm (Monash Institute of Health Services Research, Monash University) • Eldho Paul (Monash University)
Expected completion:	April 2010

Polycystic ovary syndrome (PCOS) is the most common endocrine abnormality in reproductive-aged women having psychological, reproductive and metabolic manifestations. PCOS is estimated to affect 5-10% of reproductive-aged women or 400,000 women in Australia. In 2006, the estimated economic burden of PCOS in Australia was $40 million (menstrual dysfunction 31%, infertility 12% and PCOS-associated diabetes 40% of total costs), representing a major health and economic burden.

PCOS has previously been conceptualised as a reproductive condition with short term sequalae, primarily infertility. However our group and others have shown PCOS to be a complex condition with psychological, reproductive and metabolic sequalae. We propose that there is paradigm shift required in the perception and approach to this condition, such that it is acknowledged as a complex multi system condition with implications over and above reproductive manifestations including psychological and metabolic features.

We hypothesise that PCOS is a chronic illness, defined as persisting for a long period of time involving a continuing disease process. We believe it needs to be considered in the biopsychosocial model of disease considering the psychological distress, the illness behaviour and the effects on social interactions related to the condition. However evidence is needed to support the manifestations of the condition outside the conventional medical perspective of the condition. The chronicity of the condition and the biopsychosocial aspects would be reflected by increased need for medication, increased attendance at health professionals, increased procedures, reduced pregnancies or fertility, greater rates of adverse lifestyles, increased weight, reduced physical activity, poorer mental health status, depression, anxiety, poorer quality of life, less perceived control, increased stress, social isolation and reduced social support and higher rates of diabetes compared with non PCOS Australian women. Only limited data predominantly from our group, has looked at these areas in PCOS. Greater recognition and understanding of the condition is needed to facilitate the paradigm shift needed to ensure we deal with the condition appropriately, inform policy makers and educate and support both women and health professionals alike.

ALSWH data has been received and broadly reviewed and key clinical questions have been developed, including:

1) Validity of self reported PCOs diagnosis
2) The demographics of the PCOS vs. the non PCOS group
3) Prevalence of PCOS
4) The primary correlates of PCOS status

Having determined that the primary correlate was BMI, the descriptive statistics around BMI across the surveys, as well as weight gain over time, were established, and the prevalence of PCOS across the BMI range, and the relationship between BMI and PCOS has been explored. Data analysis has been completed.

An abstract was presented as an oral presentation to the National Endocrine Society, and a manuscript is in preparation.

Project: A104	Health costs of inactivity and overweight
ALSWH Investigators:	• Professor Wendy Brown • Professor Annette Dobson
Collaborative Investigator:	• Richard Hockey (School of Population Health, University of Queensland)

This study aims to quantify the relationships between physical activity, Body Mass Index (BMI) and Medicare and Pharmaceutical Benefits schemes (MBS and PBS) costs in the 1946-51 and 1921-26 cohorts of women participating in the Australian Longitudinal Study on Women's Health, and to estimate the potential population cost savings of increasing physical activity and decreasing BMI in sedentary women.

Analyses to date indicate that lower physical activity and higher BMI are associated with small individual, but significant population increases in healthcare costs. At the population level there would be significant cost savings if all sedentary mid-age and older women achieved at least low levels of physical activity, even if their BMI did not change. Greater investment by governments in 'activating' mid-age and older women appears to be a good public health strategy for reducing future healthcare costs. Cross-sectional analyses of 2001 data from the 1946-51 cohort are complete. The investigators now plan to extend this research to conduct longitudinal analyses with data from all three cohorts.

Project: A137A	What is a healthy level of physical activity for mid-age and older women?
ALSWH Investigators:	• Professor Wendy Brown • Professor Annette Dobson • Professor Julie Byles
Collaborative Investigators:	• Dr Kristiann Heesch (School of Human Movement Studies, University of Queensland) • Dr Nicola Burton (School of Human Movement Studies, University of Queensland)
Funding source:	Office for Women (Department of Families, Community Services and Indigenous Affairs), NHMRC program grant, NHMRC capacity building grant

This project examines the associations between physical activity and health in mid-aged and older women in Australia, and is an extension of previous work focussed on the 1921-26 cohort. The project was the basis of a special report on physical activity and its health consequences in mid-age and older women prepared for the Department of Families, Housing, Community Services and Indigenous Affairs (FAHCSIA), and available at the FAHCSIA website: http://www.ofw.facs.gov.au/publications/physical_activity/default.htm

Several papers on specific aspects of the work in the report have been published in the *Journal of Epidemiology and Community Health*, and another is in press for *The Annals of Behavioral Medicine*.

Project: A165	Exploratory analyses of relationships between physical activity and reproductive health and reproductive health symptoms in young and mid-age women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Yvette Miller (School of Psychology, University of Queensland) • Dr Mireille van Poppel (Department of Public and Occupational Health, Free University Amsterdam Medical School)

The first phase of this study assessed the relationship between changes in physical activity and self-reported menopause-related vasomotor, somatic and psychological symptoms. Data were from Surveys 3 (2001) and 4 (2004) of the 1946-51 cohort (N=3 330). Results indicated that physical activity was not associated with total menopausal symptoms, or with vasomotor or psychological symptoms. A weak association with somatic symptoms was found. Weight gain was associated with increased total, vasomotor and somatic symptoms. Weight loss was associated with a reduction in total and vasomotor symptoms. It was concluded that changes in physical activity were not related to vasomotor or psychological symptoms, and only marginally to somatic symptoms. Changes in weight showed a stronger relationship with menopausal symptoms. A second phase examined the relationships between physical activity and menstrual symptoms in the 1973-78 cohort.

Analysis is now complete - one paper has been published in *Menopause – Journal of the North American Menopause Society,* and progress on a second planned paper is expected in late 2009 when Dr van Poppel is in Australia.

Project: A171A	Health costs of poor psychological health and inactivity
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Nicola Burton (School of Human Movement Studies, University of Queensland) • Dr Kylie Ball (School of Exercise and Nutrition Sciences, Deakin University) • Richard Hockey (School of Population Health, University of Queensland) • Dr Asad Khan (School of Health and Rehabilitation Sciences, University of Queensland)

This study has two main aims, (i) to explore and quantify the relationships between poor psychological health (such as depressive symptoms), physical activity, and MBS/PBS costs and claims, and (ii) to estimate potential cost savings of improving physical activity among sedentary women with depression/poor psychological health. The investigators are interested in whether poor psychological health is associated with increased Medicare costs, and whether physical activity participation is associated with reduced healthcare costs among women with poor psychological health.

Planning for this project is underway, and preliminary examination of the data is expected to commence soon.

Project: A199	Weekend warriors: Frequency of physical activity and selected health outcomes in mid-age and older women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Kristi Heesch (School of Human Movement Studies, University of Queensland) • Paul Chang (School of Human Movement Studies, University of Queensland)

Recent research suggests the benefits of 'accumulating' the recommended dose of physical activity (150 mins of moderate intensity/week) vary according to the frequency of exercise. This study will examine the association between frequency of physical activity and both hypertension and diabetes in the 1946-51 and 1921-26 cohorts. More frequent activity is expected to be associated with greater reduction in risk of health outcomes, than the same amount of activity accumulated in fewer sessions. For example, walking five days a week for 30 mins is expected to be more beneficial than walking once a week for 150 minutes (as occurs when playing golf and other 'weekend warrior' sports).

Initial analyses have been conducted and plans to analyse data from the 1921-26 cohort have been abandoned - work will focus on data from the 1946-51 cohort. The project is currently on hold pending availability of additional statistical assistance.

Project: A200	Changes in prevalence estimates for physical inactivity and smoking over a 10 year period and associated impact on estimates of population attributable risk from these behaviours
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Kristi Heesch (School of Human Movement Studies, University of Queensland) • Professor Adrian Bauman (School of Community Medicine, University of New South Wales)
Funding source:	NHMRC program grant

There is debate in the literature about the relative population attributable risks of smoking and physical inactivity (PIA). The aim of this study is to assess changes in the prevalence of physical activity and smoking over time in the 1973-78 and 1946-51 cohorts, in order to assess the changing population attributable risk of these behaviours over a 10 year period. It is expected that as the prevalence of inactivity increases and the prevalence of smoking decreases, the population attributable risk of these behaviours in young women will 'swap' - that is, PIA will become more important than smoking over a ten year period. Preliminary consideration of the data required for this study has commenced, but the project is currently on hold pending availability of additional statistical assistance.

Project: A201	Does sitting cause weight gain?
ALSWH Investigators:	• Professor Wendy Brown • Professor Annette Dobson
Collaborative Investigators:	• Melanie Watson (School of Population Health, University of Queensland) • Dr Jannique van Uffelen (School of Human Movement Studies, University of Queensland)
Funding source:	NHMRC program grant

Previous analyses in the Australian Longitudinal Study on Women's Health cohort showed that sitting time is a predictor of weight gain in the 1946-51 cohort. This study further examines the relationships between changes in sitting time and weight, using both cross sectional and prospective analyses. Analyses of the 1946-51 cohort have been completed using data from Surveys 3 and 4. Unadjusted analyses show that there is a cross sectional association between weight and sitting time at both surveys. There are also associations between increases in sitting time and increases in weight. A paper is under review, and work on data from the 1973-78 cohort will begin in late 2010.

Project: A203	What is an optimal weight for women aged 70-75?
ALSWH Investigators:	• Professor Wendy Brown • Professor Annette Dobson
Collaborative Investigators:	• Dr Jannique van Uffelen (School of Human Movement Studies, University of Queensland) • Dr Janneke Berecki (School of Population Health, University of Queensland)

Current recommendations advise a BMI range of 20-25 for optimal health. However, information about the optimal BMI range in older adults in particular is scarce. Moreover the 'optimal range' may differ for various health conditions (e.g. osteoporosis, diabetes, depression, arthritis, heart disease and cancer).

This study examines the prospective associations between weight (BMI) in the 1921-26 cohort at Survey 1 and incidence of chronic disease over 9 years, and will recommend an optimal weight (BMI) range for each condition. The main variables used are: weight/BMI at Survey 1, lifestyle data (e.g. smoking/ physical activity level/ dietary intake) and chronic diseases at the following surveys.

The analysis is now complete and a paper is under review.

Project: A220	Does one hour of physical activity a day prevent weight gain in adult women?
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigator:	• Paul Chang (School of Human Movement Studies, University of Queensland)
Funding source:	NHMRC program grant

This study examined changes in physical activity (PA) and weight, and relationships between these variables, over the course of the first four surveys of the 1971-73 and 1946-51 cohorts. The main research question was: 'Does one hour of physical activity per week prevent weight gain?'

Linear regression was used to examine the relationship between PA (summary scores from four surveys) and weight change from Survey 1 to 4 in the whole cohort and in women categorised on the basis of weight change as: gainers; maintainers; or losers. Variables shown to be associated with weight and PA were included as covariates (smoking, education, occupation, marital status, country of birth, sitting time, energy intake and use of oral contraceptive pill).

The analysis for this study is now complete and a paper is being prepared.

Project: A227	Prevalence and impact of foot pain in older women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Assoc. Professor Hylton Menz (Musculoskeletal Research Centre, LaTrobe University) • Elizabeth Barr (International Diabetes Institute)
Funding source:	• NHMRC Career Development Award (Hylton Menz: Epidemiology and management of foot disorders in older Australians)

The aims of this project are to explore the prevalence, correlates and impact of foot pain among women in the 1921-26 cohort; and the predictors of podiatry utilisation in women with foot pain.

The question 'In the last 12 months have you had problems with one or both feet?' will be used to address the first aim. This variable will be explored in relation to demographic factors, BMI and medical conditions to determine the characteristics of older women who have foot pain. To determine the impact of foot pain, comparisons will be made between those with and without foot pain on each subscale of the SF-36 and the Goldberg Anxiety and Depression Scale.

The questions 'Did you seek help for problems with one or both feet?', and 'Have you consulted any of the following people for your own health in the last 12 months?' will be used to address the second aim. By examining associations of these variables with demographic factors and medical conditions, it will be possible to ascertain the typical profile of an older woman who accesses podiatry services, and perhaps more importantly, to determine the number of older women with foot pain who do not access health services for treatment.

A paper has been written and submitted to a peer reviewed journal for publication.

Project: A242	The association between physical activity and weight with quality of life in mid-aged and older Australian women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Jannique van Uffelen (School of Human Movement Studies, University of Queensland) • Dr Kristi Heesch (School of Human Movement Studies, University of Queensland) • Dr Nelufa Begum (School of Population Health, University of Queensland)

This project examines the prospective associations between physical activity (PA) and weight with quality of life (QoL). At present we assume that meeting the national guidelines for PA (150 minutes per week of at least moderate intensity PA) will have health benefits for all adults and will help prevent weight gain. However, the dose response prospective relationships between PA and weight with quality of life have never been extensively explored for mid-age and older women. In this work, we propose to use PA scores (1921-26 Cohort Surveys 2 and 3; 1946-51 cohort Surveys 3 and 4) to explore associations with SF36 scores (1921-26 cohort Surveys 3 and 4; 1946-51 cohort Surveys 4 and 5) using a time lag GEE analysis. The analysis will be adjusted for variables that are known to be determinants of QoL, such as depression and number of chronic diseases, and demographic and lifestyle factors.

Analysis is currently in progress, and a paper for submission to a public health, aging, or quality of life journal is planned.

Project: A252	Correlates Of Sitting Time In Young, Mid-aged And Older Women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Jannique van Uffelen (School of Human Movement Studies, University of Queensland) • Dr Kristi Heesch (School of Human Movement Studies, University of Queensland))

The main aim of this work is to examine the correlates of sitting time. In recent literature, negative cross-sectional and prospective associations have been observed between sedentary behaviour and markers of cardiovascular and metabolic disease and the prevalence of these diseases. It is necessary to know more about the correlates of sitting time, in order to develop effective trials to examine the potential health effects of reducing sitting time. The ALSWH offers a good opportunity to do this, as sitting has been assessed in the third surveys of all three age-cohorts.

The research question is: What are the correlates of sitting time in the three age cohorts? The outcome variable is sitting time in hours per day. For the purpose of the analysis, the explanatory variables will be categorized into one of the following categories: sociodemographics, health, work, family and caring, active and passive leisure, and other health behaviours (energy intake, smoking and alcohol). Preliminary univariate analyses show that variables in these categories are significantly associated with sitting time. The hypotheses are that lower SES, worse health, more hours of work, having a caring role, having an inactive lifestyle, and unhealthy health behaviours are associated with more sitting time. Whether the correlates of weekday sitting are different from the correlates of weekend day sitting will be explored.

First, the univariate associations between the explanatory variables and sitting time will be assessed using regression for continuous variables and GLM for categorical variables. The second stage will be regression or GLM modelling with the variables that are shown to be univariately associated with

sitting-time. The analyses will be run separately for weekday sitting, weekend day sitting and a composite score of overall sitting time in hours per day.

Analyses are almost complete, and a paper is planned for submission to a public health journal.

Project: A090A	To what extent does having babies contribute to weight gain in young women?
ALSWH Investigators:	• Professor Annette Dobson • Professor Wendy Brown
Collaborative Investigator:	• Richard Hockey (School of Population Health, University of Queensland)

Women often blame weight gain in early adulthood on having a baby. This project sought to estimate the weight gain attributable to having a baby, after disentangling the effects of other factors that influence weight change at this life-stage. Surveys 1 to 4 of the 1973-78 cohort, which provide data from the women from ages 18-23 (Survey 1, 1996) to age 28-33 (Survey 4, 2006) were analysed in 2008. On average women gained weight at the rate of 0.93 %/year or 605 g/year for a 65kg woman. Over the 10 year study period, partnered women with one baby gained almost 4kg more, and those with a partner but no baby gained 1.8kg more, than unpartnered childless women (after adjustment for other statistically significant factors: initial body mass index and age; physical activity, sitting time, energy intake (2003); education level, hours in paid work and smoking).

Having a baby has a marked effect on ten year weight gain, but there is also an effect attributable to getting married or living with a partner. Social and lifestyle as well as energy balance variables should be considered when developing strategies to prevent weight gain in young adult women.

A paper based on this work has now been accepted for publication in the *American Journal of Preventive Medicine*.

Project: 216	Iodine-related food intake among pregnant, breast-feeding and other women
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Dorothy Mackerras (Food Standards of Australia and New Zealand) • Professor Graham Giles (Cancer Council of Victoria)

Iodine deficiency adversely affects the mental development of young children and is re-emerging in Australia. Data from the 1973-78 cohort and the Cancer Council Victoria were used to investigate whether pregnant and postpartum women consume more or less bread, dairy products and fish than their non-pregnant counterparts. Another aim was to estimate the impact of mandatory fortification of bread with iodine in pregnant and non-pregnant women.

Current iodine intakes are well below dietary recommendations for non-pregnant women. Although iodine intake of pregnant women is higher due to higher intake of dairy products, it is still further below levels recommended for pregnant women. In addition, pregnant and postpartum women reported eating more bread than other women. Hence fortification of bread with iodine would have a greater impact on iodine levels in pregnant and breastfeeding women than non-pregnant women.

Project: A071	Utilisation of oral health care services by women
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Assoc. Professor Deborah Cockrell (School of Medicine and Public Health, University of Newcastle)

This project aims to identify factors associated with dentist consultation by older Australian women. Participants will be from the older cohort of the Australian Longitudinal Study on Women's Health which originally involved 12,432 older women.

The percentage of women who consulted a dentist in the years 1999, 2002 and 2005 were 35%, 36% and 37% respectively. Women were more likely to consult with a dentist if they lived in urban areas, were non-smokers, did not have diabetes or heart disease, and had better physical health. Women were less likely to consult with a dentist if they found it difficult to live on their income

Access to dentists, cost of consultations and poor health appear to be significant factors influencing visits to a dentist by elderly Australian women. In addition, those women who are in poorer health are less likely to consult with a dentist.

A paper has been accepted by the *Australasian Journal of Ageing*.

Project: A101	Change in health status and health care use for women who have not had health assessments
ALSWH Investigators:	• Professor Julie Byles • Dr Anne Young

Survival and health-related quality of life scores for women who were eligible for the 75+ assessment were examined according to whether or not the women had received a health assessment since 1999 and whether or not they had a major condition (heart disease, cancer, diabetes, asthma/bronchitis). Health assessments had no great impact on survival. While there was a slight trend for women who had a health assessment to have better survival than women who had no assessments, interpretation of these data is difficult since assessments are dependent on survival. Among women who were still alive in 2004, there was no statistically significant difference between physical function scores for women who did and did not have health assessment. However, there was a small trend towards a lesser decline in scores for women having more than one assessment, There were no differences in SF-36 Mental Health sub-scale score. Results are to be updated with Survey 5 data prior to publication.

Project: A150A	Adequacy and equity of treatment for depression among older Australian women
ALSWH Investigators:	• Professor Julie Byles • Dr Deborah Loxton
Collaborative Investigators:	• Assoc. Professor Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Ian Robinson (Research Centre for Gender, Health and Ageing, University of Newcastle)
Funding source:	Hunter Medical Research Institute grant

Medications play an important role in the management of depression. In this study we examine claims to the Pharmaceutical Benefits Scheme (PBS) for ALSWH participants in the three age groups and those factors that are associated with claims for anti-depressant medications. The data are for women who have consented to the release of these data and who were alive and participating in the study in each calendar year 2003-2005. Medications for women in each cohort were grouped and described according to the Anatomical and Therapeutic Class coding system developed by the World Health Organisation. Claims for nervous system drugs, particularly antidepressants were common among Younger women (used by 8%), Mid-age women (14%) and Older women (18%). However not all women who reported a diagnosis of depression on the surveys were identified as having anti-depressant medications. Among Younger women who reported a diagnosis of depression, 60% had no claims for any anti-depressant medication in 2005 and 40% had no claims at any time during the period 2002-2005. For Mid-age women the corresponding percentages were 36% and 17%, and for Older women the percentages were 33% and 18%. Depression and claims for anti-depressant medications were associated with area of residence (women in rural areas were less likely to receive anti-depressant medications), marital status, socio-economic status, health care use, and the presence of comorbid conditions such as arthritis, back pain and heart disease.

Many women with depression continued to have claims for anti-depressant medications for long periods. Among Mid-age and Older women, more than 50% of women had claims in both 2002 and 2005. Younger women were less likely to have claims in both periods, and were equally likely to cease, or take up anti-depressant medications, or to have no claims in either year. A significant improvement in scores on the SF-36 Mental Health Index was observed for women with self-reported depression who ceased anti-depressant medications between 2002 and 2005, indicating positive outcomes for women in this group.

Project: A158	Use of the ‘polypill’ among older women
ALSWH Investigators:	• Professor Julie Byles • Assoc. Professor Anne Young
Collaborative Investigators:	• Professor David Henry (School of Medicine and Public Health, University of Newcastle) • Assoc. Professor Lynne Parkinson (School of Medicine and Public Health, University of Newcastle) • Xenia Dolja-Gore (University of Newcastle)
Funding source:	University of Newcastle Strategic Pilot Research grant

In this study we examined the prevalence of use of CVD chemoprophylaxis as ascertained from PBS data for women in the mid-age and older cohorts. In both cohorts, angiotensin converting enzyme inhibitors (ACE)/angiotensin II receptor antagonists (AII) and statins were the most commonly identified class of CVD chemoprophylaxis. Statins were used by 14% of women in the Mid-age group and 39% of women in the Older age group. Use of these lipid lowering medications was more

common among women reporting heart disease, diabetes, high blood pressure or stroke than among women who did not report these conditions. In the Mid-age cohort, only 10% of women with no history of any of these conditions were taking statins, whereas over 50% of women who had reported diabetes, stroke or heart disease were identified as using these medications. Among the Older women, 30% of those who had not reported any of the conditions were using statins.

In the Mid-age cohort, 30% of women were identified as taking any of the categories of CVD medications, and 10% were identified to be taking more than one agent; in the Older age cohort 79% were taking at least one class of agent, and 52% taking at least two classes in combination. The most common combination was the use of either an ACE inhibitor or angiotensin II receptor blocker in combination with a statin and with or without aspirin.

Characteristics of women with at least one claim for CVD medications (thiazide, ACE/AII, beta blocker, statin) at any time from 2002 to 2005 compared with women who have not been identified as having a claim for these medications. In this analysis CVD medications were more commonly used by women with higher body mass index, lower levels of education, more comorbidities (including diabetes), and fair or poorer self rated health.

Project: A246	Uptake and impact of new Medicare Benefits Schedule items - Psychologists and other allied mental health professionals
ALSWH Investigators:	• Professor Julie Byles • Dr Deborah Loxton
Collaborative Investigators:	• Professor Graham Giles (Cancer Council of Victoria) • Dr Sarah McNaughton (School of Exercise and Nutrition Sciences, Deakin University)

This project examines uptake of new Medicare items for counselling and related services among the three cohorts of women in the ALSWH: women born in 1973-78, women born 1946-51, women born 1921-26. In November 2006, Medicare Australia introduced new items for mental health services provided by clinical psychologists and allied health professionals. In this study we have linked survey data with Medicare and Pharmaceutical Benefits data for consenting women. Our aims are to describe the uptake of these items by women in the study, particularly those who have reported mental health problems on one or more of their surveys; to determine characteristics of women who have and have not used the services, and inequalities in service use by different groups of women; to identify whether women using the new services were already using counseling services; to determine the relationships between use of the mental health services and current and past medication use; and to determine patterns of change in physical and mental health-related quality of life among groups of women who do and don't use the services and according to their history of mental health problems. We are also investigating the impact of services on costs of Medicare services and Pharmaceutical Benefits (PBS). Since the mental health items were introduced at the end of 2006, 5% of women born 1973-78, 2% of women in the 1946-51 cohort, and less than 1% of women in the 1921-26 cohort have made claims to Medicare for these items of service. To qualify for these services women are required to also have a mental health plan prepared by a general practitioner (item 2710). Among the women who have submitted Medicare claims for these GP plans, around one-third to one-half of the women (depending on the cohort) have not taken up the counselling services within the period of this study. We are currently examining the lag between receiving the plan and having the mental health service. The patterns indicate that many women who are provided with a plan do not take up the mental health service.

Among women who use the mental health services, the most commonly used items are for clinical psychologist and other psychologist services for individuals (items 80010 and 80110). Very few women in any age cohort used services for group therapies or services provided by other professionals such as occupational therapists or social workers.

Among women who had ever reported depression, anxiety or other mental health condition, 10% of those in the 1973-78 cohort, 6% of the 1946-51 cohort, and 1% of the 1921-26 cohort had made

claims for mental health services. These data indicate that a majority of women with depression, anxiety or other mental health problems have not made use of these new services within the first year of their availability.

For further analysis we have subdivided the women in the 1973-78 and 1946-51 cohorts into four mutually exclusive groups:

1) women who have made a claim for mental health services (regardless of their self-reported mental health conditions); [5% of the 1973-78 cohort; 2% of the 1946-51 cohort]

2) women who have not made a claim for mental health services but who reported a mental health condition on the most recent survey; [16% of 1973-78 cohort; 15% of 1946-51 cohort]

3) women who have not made a claim for mental health services but who reported a mental health condition on a past survey (but not on the most recent survey); [12% of the 1973-78 cohort; 17% of the 1946-51 cohort]

4) women who have not made a claim for mental health services and who have not reported any mental health condition on any survey (these are our comparison group). [67% of 1971-78 cohort; 65% of the 1946-51 cohort]

Comparisons of these groups indicate many differences between women who have used the mental health services and those with current or past mental health problems but no service use. The final results of our analyses of these differences and their implications will be described in our final report.

Project: A256	Identifying the predictors of hospitalisation for women with single and multiple comorbid chronic conditions
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Newcastle) • Assoc. Professor Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Jennifer Stewart Williams (Research Centre for Gender, Health and Ageing, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle) • Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Newcastle)

As the population ages, Australia faces an increasing economic and social burden resulting from chronic and complex conditions. Lifestyle changes and pharmaceutical and technological advances are improving survival rates for these conditions, but are also increasing the costs of care. There is clearly a need for Australian health services research into ways of managing and financing health care for the chronically ill. While much work has been done on quantifying and mapping the costs of the disease burden it is necessary now to firstly identify and explain population-based contributors which are modifiable through policy action, and secondly, determine their periodic effects on cumulative episodes of health service use. This project aims to add to this understanding by linking ALSWH data with the Admitted Patients Data Collection (APDC) and analysing personal, health and function, social, and lifestyle factors that contribute, over time, to increasing acute hospital service utilisation and costs by people with chronic, and complex diseases and associated risk factors.

The study population comprises women ever resident of New South Wales (NSW) who were born in 1946-51 and completed ALSWH surveys 3, 4 and 5 in 2001, 2004 and 2007 respectively, and women who were born in 1921-26 and completed ALSWH surveys 3 and 4 in 2002 and 2005 respectively. The aim is to identify and test the modifiable predictors of NSW acute public and private hospital service utilisation and costs accumulated over time by individuals with specified chronic conditions,

with service use and costs measured by age-adjusted separations, bed days, readmissions and Australian Diagnosis Related Groups (AN-DRGs) in the APDC (2000-2008), and with the conditions of interest being: cardiovascular disease, cerebrovascular disease, chronic obstructive airways disease, asthma, arthritis, diabetes, depression. Women will be identified from the two cohorts of ALSWH according to their self report of these conditions at Survey 3, 4 or 5 for each cohort, and the survey data will be used to identify personal, health, and other factors associated with different levels of episodic and accumulated health service use and costs for women with these conditions. The hospital services and use for the different groups of women with different sets of characteristics will be described over time, from 2001-2007 or until death. Separate analyses will be undertaken for women who survive for the entire period of observation and for different periods prior to death.

Project: A169	Men, women and ageing: Predictors of ageing well in the Australian Longitudinal Study on Women's Health and the Perth Health in Men Study ('MWA')
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Professor Konrad Jamrozik (School of Population Health and Clinical Practice, University of Adelaide) • Dr Deirdre McLaughlin (School of Population Health, University of Queensland) • Assoc. Professor Jon Adams (School of Population Health, University of Queensland) • Professor Wendy Brown (School of Human Movement Studies, University of Queensland) • Assoc. Professor Nancy Pachana (School of Psychology, University of Queensland), • Professor Paul Norman (School of Surgery and Pathology, University of Western Australia) • Professor Osvaldo Almeida (Unit of Geriatric Psychiatry, University of Western Australia) • Professor Leon Flicker (Royal Perth Hospital) • Professor Graeme Hankey (Department of Neurology, Royal Perth Hospital) • Professor Julie Byles (School of Medicine and Public Health, University of Newcastle) • Dr Derrick Lopez (Centre for Health and Ageing, University of Western Australia)
Funding source:	NHMRC/ARC Ageing Well, Ageing Productively Program

The aim of this project is to examine the determinants of ageing well and productively in Australia by combining and analysing data from two large longitudinal studies that have already been running for 10 years. Thus the project will capitalise on existing research investments to address specific strategic objectives. The data are from the 1921-26 cohort of ALSWH and the Western Australian Health In Men Study (HIMS). The specific objectives are to:

- Identify social, demographic, behavioural and psychological determinants of survival and of healthy non-disabled life in men and women aged 70-90 years.
- Use longitudinal data to assess the effects of changes in health-related lifestyle in old age (e.g. smoking cessation, physical activity) on mortality and compression of morbidity.
- Compare the use of health services between older women and older men using the Western Australian Linked Records Database.
- Assess factors associated with differing levels of health service use and explore inequities in relation to geographic location, gender, social factors, and physical health.
- Identify health and lifestyle factors associated with social engagement and independent living in older age.

- Assess the extent to which mental health factors, including depression, anxiety and positive well-being, are associated with healthy non-disabled life in older age.
- Examine gender differences to assess the extent to which early intervention and prevention strategies for older people should target men and women separately.
- Assess the combined impact of multiple diagnosed conditions (e.g. diabetes, depression), multiple modifiable risk factors (e.g. obesity, smoking) and social connectedness/isolation on mortality, morbidity and use of health services.

The general hypothesis underlying the proposed project is that there are identifiable risk factors for mortality and chronic morbidity in old age that are potentially amenable to intervention, and that these risk factors are not necessarily the same as those operating in middle life.

Additional data collections for both the HIMS and members of the (ALSWH who live in Perth WA, were completed in late 2008. 7,513 surveys were mailed to HIMS participants, with a total response of 3,292 surveys (44%). 2,200 men requested that they be sent no further surveys. The survey was followed up by telephone interviews to gather data on cognitive status and mood. Two measures, the Telephone Interview for Cognitive Status (TICS) and the Geriatric Anxiety Inventory (GAI) were administered. 2,898 participants completed the TICS and 236 additionally completed the GAI.

260 ALSWH participants were mailed a survey, which included additional variables that mirrored those asked in the HIMS collection and which had not previously been asked in ALSWH Survey 5 (2008). 191 completed the questionnaire (73% response) and 117 consented to a telephone interview which included the TICS and the GAI. Data has been entered, checked and cleaned and analyses are currently underway.

Since the last report, the following analyses have been approved by the Chief Investigators:

- Alcohol use in older populations: what are 'safe' levels of consumption?
- Health related quality of life in older men and women
- Sleeping difficulty and medication use among older Australian men and women
- Profiles of older men and women who consult alternative health practitioners: Are there gender differences?
- Re-gendering later-life widowhood: Identities and meaning
- Cognition and mood disorders and their impact on physical wellbeing in older men and women
- Hearing and vision loss in a large cohort of older Australian men and women.

During 2009, two presentations were made at the IAGG *World Congress on Geriatrics and Gerontology* in Paris in July, and two presentations were made to the *Australia and New Zealand Society for Geriatric Medicine*. A paper was published in the A*ustralian and New Zealand Journal of Public Health*, one is in press for the *Journal of the American Geriatric Society*, and two are in submission to the *Journal of Health Psychology*, and *Addiction*.

Project: A251	A multi-morbidity index in older women
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Leigh Tooth (School of Population Health, University of Queensland) • Dr Dimitrios Vagenas (School of Population Health, University of Queensland) • Professor Julie Byles (Centre for Gender, Health and Ageing, University of Newcastle)

Previously we have developed multimorbidity indeces which are predictive of various different health outcomes, such as SF36 measures, health service use, and death. These have been described in published papers (Tooth et al., 2008). All these indices have combined data on various aspects of

morbidity into a single scale of multimorbidity. This project extends this previous work in a different direction, and aims to provide indices for different dimensions of morbidity/disability, such as psychological, sensory, or mobility.

Analyses are underway, and a manuscript is planned for 2010. This project will also be included in the ALSWH Major Report for 2010: Women, health and ageing: Findings from the Australian Longitudinal Study on Women's Health.

Project: W058A	Service utilisation and caregiving among mid-aged women
ALSWH Liaison:	• Dr Leigh Tooth (School of Population Health, University of Queensland)
Collaborative Investigators:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Dr Jayne Lucke (School of Population Health, University of Queensland) • Samantha McKenzie (School of Population Health, University of Queensland) • Sam Brilleman (School of Population Health, University of Queensland)

In 2008 researchers in the ALSWH team at the University of Queensland, were contracted by the Ageing and Aged Care Division of the Department of Health and Ageing to provide detailed analyses of caring by women born between 1946 and 1951, and 1921 and 1926. These analyses were to examine the influence of factors such as where carers lived (both in relation to the care recipient and in terms of area of residence) and care recipient needs (such as functional dependency levels) and the frequency and amount of care. The research was to provide evidence to address the following questions:

1.Transitions:

- What are the transitions into and out of caring over the lifespan?
- What factors contribute to deciding to care for a family member or friend?
- How do women manage the transition to caring, particularly in relation to labour force participation?
- What factors contribute to the decision to decrease working?

2.Carer needs:

- What is the broad impact of caring on women's lives?
- What needs, unmet or under met, can be identified for carers?

3.Interventions / services:

- What types of interventions / services do carers use?
- What patterns of health or community service use are demonstrated?
- What information can be provided on access, information, and perception of services that carers use?
- What interventions / services lessen the impact of caring?
- What interventions / services are effective?
- What carer support strategies and interventions assist or could assist employed carers?
- What type / dose / timing of respite interventions are effective in maintaining a caring relationship for the different carer types and settings?

The focus of the research conducted for this project was on women born between 1946 and 1951. The women included in this analysis were those in the pilot group. Every three years, the pilot group of women test the main ALSWH surveys for the 1946-51 cohort. These 1946-51 pilot women are a convenience sample of women that predominantly live in the Wollongong and Bathurst areas and

they are not included in the main 1946-51 cohort. In 2007, researchers in the ALSWH team at the University of Queensland conducted a cross-sectional pilot substudy of the 355 women in the 1946-51 pilot group. The substudy of Phase 1 was originally designed to pilot test the survey procedure and instruments before administration to the full 1946-51 cohort.

The substudy was conducted as a postal survey and data were collected over three months. The survey consisted of two sections. The first section contained 42 questions that applied to all participants and asked about their general health, wellbeing, and access to services. The second section contained 22 questions and was only relevant to women who were currently providing care to someone with a long-term illness, disability, or frailty. The second section asked about caring activities and access to services for the care recipient. If a participant cared for more than one person, the participant completed the survey for the person she had cared for the longest. Of the 355 women invited to participate, 296 participated (an 83.4% response rate). Of these, 97 were carers and 199 were noncarers.

We found that while carers were similar to noncarers on most demographic characteristics (age, marital status, residence, language spoken at home and level of education), they were less likely to be in the workforce than noncarers. Carers also had poorer mental health and less social support than noncarers. The results also showed that carers were not a homogenous group. Women who were live-in carers reported higher carer strain and were more likely to be the main care provider, have been caring for a longer time, care for younger recipients (who were typically their husbands/ partners), perform more activities of daily living (particularly the more intensive activities of daily living) and work part-time, if in the labour force. However, carers who did not live with their care recipient were more likely to care for older recipients (who were typically their parents), perform only instrumental activities of daily living and work full-time, if in the labour force. The results of this research were presented to the Department of Health and Ageing in a detailed report in January 2009.

Further data analysis is ongoing, and will lead to a paper being submitted for publication by the end of 2009.

Project: A081	Characteristics of CAM users and associated symptoms and conditions
ALSWH Investigator:	• Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle)
Collaborative Investigators:	• Assoc. Professor Jon Adams (School of Population Health, University of Queensland) • Dr Alexander Broom (University of Sydney) • Dr Chi-Wai Lui, (School of Population Health, University of Queensland) • Jon Wardle (School of Population Health, University of Queensland)

This project focuses on determining the factors associated with complementary and alternative medicine (CAM) use among older Australian women over time. The percentage women in the ALSWH 1921-26 cohort who consulted a CAM practitioner in the years 1996, 1999, 2002 and 2005 were 14.6%, 12.1%, 10.9% and 9.9% respectively. Use of CAM increased as the number of reported symptoms increased, as physical health decreased, and for non-urban residents compared with urban residents. Use of CAM amongst older women appears to be strongly influenced by poor physical health. There is also a suggestion that lack of access to conventional health care providers increases CAM use and there is an overall decline in the use of CAM among older women as they age.

In 2009 conference presentations were made at the *Australasian Acupuncture and Chinese Medicine Annual Conference* in Melbourne and the *Chiropractic and Osteopathic College of Australia* (*COCA)*

8th Biennial Conference in Sydney, and two journal articles were published, in *Clinical Rheumatology* and *Age and Ageing.*

Project: W059	Longitudinal study of sleeping difficulty and medication use among older women
ALSWH Investigators:	• Professor Julie Byles • Assoc. Professor Gita Mishra (University College London)
Collaborative Investigators:	• Dr Margaret Harris (School of Nursing and Midwifery, University of Newcastle) • David Fitzgerald (School of Population Health, University of Queensland)

This work extends our previous research into insomnia and the impact of sleeping difficulty on women's quality of life. The analysis will involve three main tasks:

1) Completion of analysis of the sleep substudy (1100 women) by obtaining more data on medication use and data longer-term health outcomes (survival, SF-36), and sleeping medication use for women in this study

2) undertaking longitudinal analysis of differences in survival and quality of life for women with sleeping difficulties and women using sleeping medications

3) undertaking a similar longitudinal analysis for women in the main study – to analyse quality of life and survival for women who do and do not have sleeping problems at various time points and according to their use of medications to help them sleep

Part 1 of the analysis is complete. Women with major sleep problems have a lower survival than other groups of women, however this difference is not significant when other covariates are included in the model. Sleeping problems and general health are strongly associated ($p < 0.001$).

Project: W063	Tracking the impact of drug regulatory actions: Consumer health outcomes, risk-benefit issues and policy framework
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• A/Prof Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Professor David Henry (School of Medicine and Public Health, University of Newcastle) • Xenia Dolja-Gore (University of Newcastle) • Ian Robinson (Research Centre for Gender, Health and Ageing, University of Newcastle • Richard Gibson (School of Medicine and Public Health, University of Newcastle) • Dr Evan Doran (School of Medicine and Public Health, University of Newcastle) • Dr Jane Robertson (Research Centre for Gender, Health & Ageing, University of Newcastle) • Professor Glen Salkeld (School of Public Health, University of Sydney) • Dr Jennifer Stewart-Williams (School of Medicine and Public Health, University of Newcastle) • Ms Lisa Notley

This project is an in-depth qualitative exploration of women's experiences in a medicine discrediting event. Qualitative interviews will explore several key questions:

- What is the experience of a medicine discrediting event for consumers? (How aware are consumers of the event, what effect does it have and how do they feel about the event now?)
- When a medicine is discredited, what medicine decisions are made by consumers and/or by prescribers?
- What role do consumers play in decision making about switching and stopping medicines in such an event?
- What information sources do consumers use to base their decision to continue or stop a medicine after such an event?
- How do consumers weigh up potential harms and benefits of different medicine choices after a discrediting event?

To date, 27 interviews with participants from the 1946-51 cohort have been completed, a code book has been developed and tested with the first 10 transcripts, researchers have updated their skills in qualitative software (NVivo8), and a literature review to support publication is underway. Next, all transcripts from this interview series will be coded, a small group convened to discuss progress and consider if more interviews with this cohort are needed, and interviews with the 1921-26 cohort will begin (October 2009).

Project: A166	Comparison of self-reported medications and PBS records
ALSWH Investigators:	• Professor Julie Byles • Dr Anne Young
Collaborative Investigators:	• Professor David Henry (School of Medicine and Public Health, University of Newcastle) • Assoc. Professor Lynne Parkinson (School of Medicine and Public Health, University of Newcastle) • Xenia Dolja-Gore (University of Newcastle) • Dr Paul Kowal (World Health Organisation)
Funding source:	University of Newcastle Strategic Pilot Research grant

This study compared older women's self-reported medication use as recorded on Survey 4 with PBS data 4,687 participants that consented to the release of their MBS/PBS data. The agreement between these two sources of information was checked for particular classes of medication for common chronic conditions (insulin and analogues, oral blood glucose lowering drugs, anti-hypertensives, statins, aspirin and folic acid, anti-depressant medications, anxiolytics and hypnotics). For these medications prevalence of medication use was generally higher in PBS data except for Aspirin intake. This could be accounted for by over the counter purchases of Aspirin which will not appear in the PBS data. Specificity (the probability that a woman who is not taking a medication will not report this on her survey) was high for all medication use. Overall agreement and sensitivity (the probability that women identified as taking a medication according to PBS data reported this medication on the survey) were highest for glucose lowering drugs and lowest for nervous system medications. Positive and negative predictive values were generally high, except for Aspirin and folic acid which can be purchased over-the-counter without prescription.

In general, this analysis indicates good agreement between these two sources of medication information for most of the groups of medications assessed. Care must be taken when using PBS data as a source of information about drugs that can be bought over-the-counter or that are used as needed. Medications that are not covered under the PBS scheme will also be under-represented in PBS data and self-report is a better source of information on the use of these medicines.

Project: A178A	Tracking the impact of drug regulatory actions: Consumer health outcomes, risk-benefit issues and policy framework
ALSWH Investigators:	• Professor Julie Byles • A/Professor Lynne Parkinson(Research Centre for Gender, Health and Ageing, University of Newcastle)
Collaborative Investigators:	• Professor David Henry (School of Health Sciences, University of Newcastle) • Xenia Dolja-Gore (Research Centre for Gender, Health & Ageing, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health & Ageing, University of Newcastle) • Ian Robertson (Research Centre for Gender, Health & Ageing, University of Newcastle) • Dr Evan Doran (School of Medicine and Public Health, University of Newcastle) • Andrew Searles (Hunter Valley Research Foundation) • Dr Jane Robertson (Research Centre for Gender, Health & Ageing, University of Newcastle) • Dr Paul Kowal (World Health Organization) • Professor Glen Salkeld (School of Public Health, University of Sydney) • Dr Jennifer Stewart-Williams (School of Medicine and Public Health, University of Newcastle) • Ms Lisa Notley
Funding source:	NHMRC project grant

This project aims to:

1) explore the impacts of discrediting medicines, on consumer health outcomes, on risk-benefit perceptions of consumers, prescribers and pharmacists and on regulatory process; and

2) provide an understanding of how public safety concerns with medicines should be managed and communicated in future such events.

The main hypothesis is that the benefit of discrediting a medicine is not higher than the harm ensuing, in terms of health outcomes and quality of life of the consumer, and effect on perceptions of safety of medicines overall. The goal of statistical analysis is to reveal the patterns of change in medication use, as represented by PBS records, before, during and after the period following the discrediting of the medications and to provide an articulation of the relationships between these patterns and individual characteristics.

Preliminary Analyses: All pharmaceuticals with potential for use in the management of arthritis have been identified. A total of 73 medications have been so identified. These are being prioritised. Multiple transition tables have been developed examining participants use of Rofecoxib and the other medications used prior to, during and after the discrediting of the medication. These transition tables have revealed a number of complexities, exacerbated by the number of potential medications. Additional complexity arises as not all participants have been regular users of the medications of interest. There is a need to account for individual usage patterns.

Periods of use have also been explored. We note that the completion of prescriptions, in general, does not occur evenly over the year but that there are peaks towards the end of the year as participants reach the Safety Net and hence are eligible to receive a greater subsidy for their medication. We have observed a tendency to stockpile medications at the end of the year. Analysis approaches towards smoothing these seasonal trends whilst retaining sufficient detail to observe

transitions. Some preliminary results from current investigations in progress on volume use and the DDDs of medications are reported. The first stage only references medications that are in tablet or capsule form.

Volume use explores the number of tablets dispensed annually, with comparisons made regarding overall consumption among the cohort (volume dispensed) and the number of participants taking the medication. Whilst the number of women using coxibs in either cohort has clearly reduced, the average volume use has remained relatively stable. We are yet to formally account for population denominator changes (eg due to deaths) and to account for individual variation over time, however, preliminary analyses suggests these effects will make limited difference to the results.

The annual rate of consumption in milligrams per day per 1000 population for tablet or capsule form delivery has been calculated for selected coxibs. Here we have observed the trend of use among women in both cohorts over the period of interest. The older cohort demonstrated higher levels of use in contrast to the mid aged group. The rate of use of Rofecoxib collapsed to zero following its removal from the market in both cohorts, Celecoxib use also fell in both cohorts, more notably in the older cohort. Over the same period, the use of Meloxicam increased although it would appear that the increase does not fully compensate for the decline in the other two. Use of the new medication Lumiracoxib (recently also discredited) may increase. This potential increased use will be considered further once the 2007 data are available. Additionally, this analysis will be extended to consider user types classified as non user, one time user, sporadic user and continuous user.

Next steps: Continuous measures of use include frequency of prescription completion and quantification of pharmaceutical consumed using the defined daily doses. We are currently investigating how best to represent the data using the DDDs. From here we will commence the survival analyses with left and right truncation modelling the patterns of change and quantify substitutions following discrediting of Rofecoxib. We will further investigate patterns obtained in the context of participant health status and in particular investigate these in relation to participant reported quality of life as measured by the SF36, deaths and hospitalisations.

Project: A196	Proton-pump inhibitors and comedications
ALSWH Investigators:	• Professor Annette Dobson • Professor Julie Byles
Collaborative Investigators:	• Dr Janneke Berecki (University of Calgary) • Richard Hockey (School of Population Health, University of Queensland) • Xenia Dolja-Gore (Research Centre for Gender, Health & Ageing, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health & Ageing, University of Newcastle) • Melanie Spallek (Australian Social Science Archive, University of Queensland)

The prevalence of psychiatric disease among patients with unexplained gastrointestinal complaints is relatively high. In this study we aimed to test if there is an association between depression and anxiety, and acid-related disorders among middle aged women.

We analysed cross sectional data of middle aged participants of the ALSWH. Women aged 56-61 years, who participated in a follow-up survey in 2007, and provided response to questions relating to heartburn, depression and anxiety were included (N=10 437). Adjusting for possible confounders, logistic regression was used to model the association between acid-related disorders and depression/anxiety. In the unadjusted analysis acid-related disorders were associated with depression (OR=1.59; 95%CI: 1.23-2.07), anxiety disorders (OR=1.61: 95%CI: 1.16-2.23) or both (OR=1.65; 95%CI: 1.12-2.04). After adjustment for sociodemographics, smoking, alcohol intake, body mass index, weight gain, arthritis, headaches/migraines and life events, acid-related disorders remained

independently associated with having both depression and anxiety (OR=1.51; 95%CI: 1.12-2.04). In women from the 1946-51 cohort there is an association between anxiety and depression, and acid-related disorders, that is not fully explained by sociodemographics, health and lifestyle factors.

A paper has been written for publication.

Project: A193	Alcohol consumption during pregnancy
ALSWH Investigators:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Assoc. Professor Anthony Shakeshaft (National Drug and Alcohol Research Centre, University of New South Wales) • Lucy Burns (National Drug and Alcohol Research Centre, University of New South Wales) • Elizabeth Elliott (Discipline of Paediatrics and Child Health, University of Sydney) • Adrian Dunlop (Hunter New England Area Health Service)

NHMRC alcohol guidelines for pregnant women were revised from total abstinence in 1992 to a low level of alcohol consumption (less than seven drinks per week) in 2001 and back to total abstinence in 2009. Data from the 1973-78 cohort were used to investigate whether changing the guidelines had an impact on drinking during pregnancy and what factors were associated with alcohol consumption during pregnancy. The level of abstinence was similar among women who were pregnant prior to 2001 and those who were first pregnant after the introduction of the 2001 guidelines. Women were more compliant with low alcohol guidelines than zero alcohol guidelines. The factor that had the most effect on alcohol intake during pregnancy was alcohol intake prior to pregnancy.

A paper on alcohol guidelines is currently under review and additional papers are planned.

Project: A198	Women's use of the emergency contraceptive pill
ALSWH Investigators:	• Dr Deborah Loxton • Dr Jayne Lucke
Collaborative Investigators:	• Dr Angela Taft (LaTrobe University) • Ms Melissa Hobbs • Dr Lisa Amir

This project aims to describe the proportions and characteristics of women who have used the emergency contraceptive pill (ECP) since 2004 and their ease of access by area of residence and any other relevant factor, such as SES, and will investigate whether using the ECP is more difficult for women living in rural and remote areas compared with women in urban areas.

Initial analyses are complete, and the researchers have now requested alcohol and marijuana variables to examine whether women at hypothesised increased risk of unwanted pregnancies are more or less likely to access ECP.

Project: A219	Patterns of alcohol, tobacco and illicit drug use before, during and after pregnancy
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Liane McDermott (Queensland Centre for Domestic and Family Violence Research, Central Queensland University)

Few studies have investigated the combined use of alcohol and tobacco consumption during pregnancy. This study describes the changing prevalence of smoking and alcohol intake by pregnant and non-pregnant women over the 11 years of the study. Preliminary results show a decline in the prevalence of both smoking and alcohol intake among pregnant and non-pregnant women. Unlike the prevalence of alcohol intake, the prevalence of smoking has declined more steeply in pregnant women than in non-pregnant women. Research is ongoing, with one paper currently in preparation, and another planned.

Project: A222	Prescribed drug utilisation in women before, during and after pregnancy
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Newcastle) • Michelle Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Jane Robertson (Research Centre for Gender, Health and Ageing, University of Newcastle)

This study aimed to determine the prevalence and patterns of prescribed medication use before, during and after pregnancy as little is known about the use of prescribed medications among pregnant women. Data from the ALSWH were linked with Pharmaceutical Benefits Scheme (PBS) data to determine patterns of prescribed medications. From the 1973-78 cohort (aged 27-32) 535 women were selected who had given birth to a child in 2005. PBS data were collected for one year before pregnancy, during pregnancy and one year after birth.

Of the 535 younger women selected, 37% had taken prescribed medications at some stage during the period observed. The most commonly prescribed medication used at least once during the pre-pregnancy and pregnant period was antidepressant medication. Oral contraception pills were the most commonly prescribed medication in the year following birth, followed by antidepressants. Though a decreased use of prescribed medications occurred whilst pregnant, there is still a need for further investigations on the use of medications through pregnancy.

The results from this project were included in Major Report D - Reproductive health: Findings from the Australian Longitudinal Study on Women's Health which was submitted in June 2009 to the Department of Health and Ageing, and papers are currently in preparation for submission to peer reviewed journals.

Project: A241	Risk factors for emergency and non-emergency caesarean births among women in NSW
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle) • Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Jennifer Stewart Williams (Research Centre for Gender, Health and Ageing, University of Newcastle) • Andrew Bisits (School of Medicine and Public Health, University of Newcastle) • Professor Ian Symonds (School of Medicine and Public Health, University of Newcastle) • Professor Kathleen Fahy (School of Nursing and Midwifery, University of Newcastle)

The aim of this project is to identify short and long term risk factors for emergency and non−emergency caesarean births. Factors to be investigated include demographics, area of residence, health behaviours, past and current physical and mental health status, health service use, mother's and baby's health status and birth details. In order to achieve this, analyses will be conducted using data collected by the ALSWH linked with data from the NSW Midwives Data Collection (MDC).

Ethics approval has been granted for this project, and analysis will proceed upon receipt of linked data from the Centre for Health Record Linkage (CHeReL).

Project: A254	Birth outcomes
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle) • Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Newcastle)

This program of work will examine three different birth outcomes – preterm birth, low birth weight and stillbirth.

Little is known about the causes of negative birth outcomes such as premature birth, low birth weight and stillbirth. While history of adverse pregnancy outcomes has been identified as a predictor of further problems, focus is now also incorporating several psychosocial and behavioural conditions as predictors of such problems. For example, depression, stress and anxiety have all been linked to preterm birth, as has a history of alcohol and tobacco use. While several studies have investigated such issues on an individual level, there are few published studies that take a more holistic approach to identifying risk factors. The ALSWH provides a unique opportunity to examine a large range of psychosocial, behavioural, reproductive and physical health measures in relation to adverse birth outcomes. In addition to this approach, linked datasets will be added (such as the Midwives Data Collection, Medicare and PBS) in order to maximise the potential of this analysis.

The work will closely follow the structure of the 'Risk factors for emergency and non-emergency caesarean births' project (A241), in that ALSWH data will first be analysed, then linked to the Midwives Data Collection for NSW. Data linkage with other datasets such as the MBS and PBS will also be considered in the future, contingent on funding of these projects.

Funding is currently being sought to investigate risk factors for adverse birth outcomes using data from the 1973-78 cohort.

Project: A255	Maternal Health
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle)

The health of mothers particularly in the early postnatal period can be severely compromised by a range of physical, emotional and situational problems. Much of the previous literature in this field has focussed on maternal mortality and major morbidity, and little focus has been on the more prevalent and less severe problems in the postpartum. The discord between the health of mothers versus non-mothers may also not only be isolated to the postpartum period, but also continue for years afterwards.

For this analysis women were divided into four categories based on motherhood status relative to survey completion date; no children, youngest child under six months old, youngest child between six and twelve months old, all children over twelve months old. Several factors affecting physical health (as measured by the SF-36 General Health Perception scale) were examined across these groups including education, financial stress, area of residence, partner status, labour force status, severe tiredness, existing diagnoses, smoking status and social support. Typical symptoms experienced were also examined.

This analysis formed a part of Major Report D, and the results are currently being written up for a paper.

Project: A238	Insomnia in Australian women their late 20s: Demographic factors and health-related behaviours
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Professor Dorothy Bruck (Victoria University) • Professor Jill Astbury (Victoria University)

This project seeks to describe sleeping difficulties and associated variables for women aged between 24 and 30 years, as reported by women in the third Women's Health Australia survey of women born 1973-78, conducted in March 2003. The project will examine demographic characteristics and health-related behaviours as they may be associated with sleep, through the comparison of an insomnia group with a group reporting good sleep. Variables will be specifically examined in risk terms - that is, the probability of a particular demographic characteristic or health-related behaviour being associated with reported insomnia. The purpose is to identify subgroups of women who may be at particular risk of insomnia and identify factors that may be relevant to the promotion of good sleep in the community.

In 2009, a paper was published in *Sleep and Biological Rythyms*, comparing two logistic regression models as possible predictors of "difficulty sleeping" in young women. Comparison of the models demonstrates the very significant influence of reported symptoms of depression and intense anxiety in predicting difficulty sleeping in this sample. In fact, when these affective symptoms are controlled for, very few of the previously significant demographic, illness and lifestyle factors remain significant

predictors. Importantly, a history of abuse and bodyweight dissatisfaction remained significant predictors of sleeping difficulty, even when controlling for the affective symptoms.

A presentation on this research was also made at a national conference, the *Australasian Sleep Association Annual Scientific Meeting* in October 2009.

Project: A159A	Health effects of intimate partner violence among Australian women
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Dr Angela Taft (LaTrobe University) • Assoc. Professor Kelsey Hegarty (LaTrobe University) • David Fitzgerald (School of Population Health, University of Queensland) Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Lyndsey Watson (LaTrobe University)

This project includes four stages:

i. Examination of abuse measures included in ALSWH 1973-78 cohort surveys
ii. Investigating the health and well-being of women who experience intimate partner violence
iii. Tracking the social support and financial stress of women prior to intimate partner violence, and subsequent to the onset of intimate partner violence to determine the changes in these factors that occur in relation to the onset of intimate partner violence at a population level
iv. Using the Composite Abuse Scale (CAS) to determine associations between different types of abuse, health outcomes and the role of social support

The first stage is approaching completion and has involved the validation of the CAS, an instrument that measures intimate partner violence across several domains and was developed by Associate Professor Hegarty. This project will be the first time that the CAS has been validated on a community sample. The utility of the CAS as a longitudinal instrument will also be assessed. It is expected that a paper from Stage 1 of this project will be submitted in the near future.

Project: A237A	The long term implications of intimate partner violence for health and social support
ALSWH Liaison:	• Dr Leigh Tooth (School of Population Health, University of Queensland)
Collaborative Investigators:	• Dr Deborah Loxton (Research Centre for Gender Health and Ageing, University of Newcastle) • Jenny Powers (Research Centre for Gender Health and Ageing, University of Newcastle) • Karly Furber (Research Centre for Gender Health and Ageing, University of Newcastle)

This project aims to determine the long term health impacts of Intimate Partner Violence (IPV) and the role of social support in order to help to identify potentially critical time points where interventions might be most effective. Furthermore, the current research will add to knowledge by determining the types of physical and mental health problems that women who have lived with IPV might experience in the longer term. The first paper from this research was presented at the *Academy of Violence and Abuse National Conference* in Minneapolis USA in April this year. This paper is now being written-up for submission to a journal for publication.

Project: A232	Factors associated with STIs and other indicators of risky sexual behaviour and poor sexual health
ALSWH Investigators:	Dr Jayne Lucke (School of Population Health, University of Queensland) • Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Queensland)
Collaborative Investigators:	• Danielle Herbert (School of Population Health, University of Queensland) • Melanie Watson (Queensland Health)

This study examines the factors that are associated with women acquiring a sexually transmitted infection for the first time in their later 20s and early 30s. Participants were 6840 women who participated in four mailed self-report surveys for the Australian Longitudinal Study on Women's Health. Women were aged between 18-23 years when first surveyed in 1996, and were surveyed again in 2000, 2003 and 2006. There were 269 women who reported an STI for the first time at Survey 3 or Survey 4 and these women were compared with 5,214 women who had never reported an STI across the four surveys. A multiple logistic regression analysis showed that women who reported an STI for the first time aged 25-30 or 28-33 were more likely to have had the following characteristics at age 22-27 years: a higher number of male sexual partners, to have been divorced or separated in the previous 12 months, to have been unpartnered, to have never been pregnant, to report poorer access to Women's Health or Family Planning Centres and to be younger than the women who did not report an STI at any survey. Our analysis shows that partner and relationship factors are important predictors of who goes on to develop an STI. Access to Women's Health or Family Planning Centres appears to protect women against developing a future STI. Sexual health promotion should target unpartnered women in their 20s and 30s, particularly those who have been recently divorced or separated. This paper is currently in preparation for submission to *Sexually Transmitted Infections.*

Project: A174	Young women's changes in use of contraception after reproductive life events
ALSWH Investigator:	• Dr Jayne Lucke
Collaborative Investigators:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Melanie Spallek (University of Queensland) • Melanie Watson (Queensland Health) • Danielle Herbert (School of Population Health, University of Queensland)

This project examines patterns of change in contraceptive use among young women over ten years as they move from their late teens/early twenties to late twenties/early thirties. There are two parts to the analysis using data from the 1973-78 cohort surveys 1-4.

Part 1 examined how patterns of contraceptive use changed over eleven years among 6,708 women who completed all four surveys between 1996 and 2006. Change over time in use of any method of contraception, and the common single methods of the oral contraceptive pill and condom were examined using a longitudinal logistic regression model. The oral contraceptive pill was the most commonly used single method at each survey (27-44%) but decreased over time. Over time, contraceptive users were increasingly more likely to be single or in a de facto relationship or to have had two or more births. The results show that women's contraceptive use and the factors associated with contraceptive use change over time as women move into relationships, try to conceive, have babies and complete their families. This paper has been published in the journal *Contraception.*

Part 2 is an analysis of changes in contraception use as a result of reproductive events including birth, miscarriage and termination. Women stop using contraception as they move into their later 20s and

30s as they try to conceive. However, little population research has examined changes in contraceptive use after reproductive events. Four longitudinal logistic regression models assessed the effect of reproductive events on changes in contraception use. After women experienced birth or miscarriage they began using contraception, or continued as non-users. Women who experienced terminations switched methods. There was a statistically significant interaction effect between reproductive events and time indicating that these patterns strengthened as the women reached their 30s. Women who began using contraception were more likely to have experienced birth or birth and miscarriage between surveys. In each group, the odds ratio increased from 2.84 (95%CI 1.51-5.34) to 6.86 (95%CI 4.52-10.43) and from 1.85 (95%CI 1.42-2.42) to 6.19 (95%CI 5.03-7.62) respectively. The results show that women's contraceptive use changed after reproductive events such as birth, miscarriage and termination and the paper concludes that contact with health services at the time of reproductive events provides an ideal opportunity to review women's contraceptive needs. Policies supportive of an integrated sexual and reproductive health strategy would facilitate this approach. This paper has been submitted to the *Journal of Family Planning and Reproductive Healthcare.*

Some of the work for these papers also contributed to one section of Major Report D *Reproductive Health: Findings from the ALSWH* submitted to the Department of Health and Ageing in June 2009.

Project: A229	The impact of having a baby and other life events on young women's aspirations
ALSWH Investigators:	• Dr Jayne Lucke (School of Population Health, University of Queensland) • Professor Christina Lee (School of Psychology, University of Queensland)
Collaborative Investigators:	• Melissa Johnstone (School of Psychology, University of Queensland)

This project examines to what degree Australian women's motherhood and other aspirations are impacted by first birth. There are two parts to the analysis using data from the 1973-78 cohort surveys 1-4

Part 1: Motherhood aspirations. The majority of young women want to have children, but we know little about why women may adjust their aspirations for family size over time. Using linked data from the Australian Longitudinal Study on Women's Health across two transition periods (n=7515 and n=7538), we examined changes in young women's family size aspirations as they moved through their peak childbearing years, and after significant life changes including the birth of a child. Aspirations for family size were related to relationship changes and changes in employment aspirations, suggesting that women were actively planning a preferred future in the context of their present circumstances. They may benefit from strategies that empower them, such as more easily pursuing study and careers in combination with motherhood. This paper has been submitted to the *Journal of Marriage and the Family.*

Part 2: Employment aspirations. This study aimed to contribute to understandings of how women negotiate work and family over the life course, by investigating what factors impact upon young women's aspirations for full-time, part-time and other forms of work. Using data across two transition periods (n = 7,505 and n = 7,584), we examined how their aspirations for employment at the age of 35 changed after significant life events and changes, including the birth of a child. Multinomial logistic regression analyses found that changes in employment aspirations co-occurred with movement into marriage or stable relationships, and with changes in aspirations for family size. As young women became mothers, or moved into lives in which motherhood is likely, many adjusted their employment aspirations away from full-time employment and towards part-time work, to align with the current work-family context in Australia. This paper has been submitted to the *British Journal of Sociology.*

Some of the work for these papers also contributed to Major Report D *Reproductive Health: Findings from the ALSWH* submitted to the Department of Health and Ageing in June 2009.

Project: A249	Achieving motherhood aspirations
ALSWH Investigators:	• Dr Jayne Lucke (School of Population Health, University of Queensland) • Professor Christina Lee (School of Psychology, University of Queensland)
Collaborative Investigators:	• Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Queensland) • Melissa Johnstone (School of Psychology Health, University of Queensland) • Xenia Dolja-Gore (Research Centre for Gender, Health and Ageing, University of Queensland)

In line with trends around the developed world, Australia has witnessed significant downtrends in the total fertility rate over the past few decades, with the total fertility rate (1.79 babies per woman) now below replacement level (2.1). The prospect of an ageing population and the associated economic and social consequences has subsequently sparked interest into the childbearing patterns of young women and men. Whilst we know that younger generations of women are delaying childbearing to later ages whilst they spend longer time in higher education and in the paid workforce, we also know that the majority of young Australian women still aspire to having children. However, delays in childbearing have coincided with smaller family sizes, and this raises questions as to whether women are achieving their desired number of children. Understanding the work and family aspirations of young Australian women, and whether they achieve their aspirations, can contribute to the evidence-base needed to inform policy on how to encourage people to have children, as well as inform policy that supports Australian women balancing work and family. This work is currently in progress. Our research questions are as follows:

1. To what degree are young women achieving their motherhood aspirations?
2. What are the characteristics of women who achieve or don't achieve aspirations?
3. What are the characteristics of childless women who still aspire to children versus those who don't?
4. Are women achieving their other aspirations (i.e., employment, relationship aspirations)?

Project: A206	Changes in workforce participation among mid-age Australian women: The impact of socioeconomic, behavioural, environmental and health related factors
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Dr Sabrina Pitt (School of Public Health, University of Sydney) • Assoc. Professor Deborah Schofield (School of Public Health, University of Sydney) • Dr Rupen Shrestha (School of Public Health, University of Sydney)

This project aims to examine the transitions of women in the 1946-51 cohort into and out of the workforce and the impact of socioeconomic, behavioural, environmental and health-related factors on these workforce transitions.

Preliminary data analysis has been undertaken. Dr Pitt presented a research seminar at The University of Queensland in July to receive feedback from the researchers of the Australian Longitudinal Study on Women's Health.

Project: W053	The validity of self reported height, weight, and physical activity among mid-age women
ALSWH Investigators:	• Professor Wendy Brown • Professor Annette Dobson
Collaborative Investigators:	• Dr Nicola Burton (School of Human Movement Studies, University of Queensland) • Dr Yvette Miller (School of Psychology, University of Queensland) • Assoc. Professor Catrine Tudor-Locke (University of Newcastle) • Dr Alison Marshall (School of Public Health, Queensland University of Technology)
Funding source:	ALSWH, NHMRC program grant, NHMRC capacity building grant

This study aims to compare self-reported height, weight and physical activity (PA) with objective measurements, and to determine the extent of participant misreporting in relation to BMI, health status, and sociodemographic characteristics. A secondary aim of the project is to obtain data on key PA indicators, such as the average number of steps taken per day (weekdays and weekends), frequency of incidental PA, and average time spent sitting per day. This study is limited to the 1946-51 cohort of ALSWH participants living in Brisbane. Recruitment and a sample of data collection (telephone recruitment; mail surveys; and individual home visits to deliver PA monitors and logbooks, and assess height and weight; N=159) is complete.

Analyses have been completed and two papers have been published, in *Australia and New Zealand Journal of Public Health*.and *Preventive Medicine*. A third has been submitted to *Medicine and Science in Sports and Exercise*, and two more papers are currently in preparation.

Project: A263	Participation in the arts and its relation to healthy ageing: A pilot study with older women
ALSWH Investigators:	• Professor Julie Byles • A/Prof David Sibbritt (School of Medicine and Public Health, University of Newcastle)
Collaborative Investigators:	• A/Professor Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Professor Patrick Fuery (Arts Health Centre for Research and Practice, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health and Ageing, University of Newcastle)

This project explores the relationship between health and participation in artistic, creative and cultural activities in older women, from a secondary analysis of ALSWH data. The analysis includes:

- A comparison of women who participate in artistic, creative and cultural activities and those who do not at Survey 4, based on relevant health status and quality of life variables.
- A longitudinal analysis of how changes in health, psychosocial and demographic variables impact on women's participation in artistic, creative and cultural activities over 2 survey times from 2005 to 2008.

The hypothesis is that women who participate in artistic, creative and cultural activities will have higher self rated health, better physical health and survival, taking into account a range of demographic and other variables across time. Questions to be considered include:

- Do women drop out of participation when their health declines?
- Does declining health happen more in non-participating women than women who do participate in artistic, creative and cultural activities?

Cross sectional analysis of Survey 4 of the 1921-26 cohort is underway. Selected demographic features, use of health services in the previous 12 months, and health and illness indicators have been compared between women who did and women who did not participate in artistic or cultural activities (e.g. hobbies/handiwork, painting/playing musical instruments, attended theatre, concerts) in the month prior to Survey 4. Logistic regression analysis to identify factors associated with participation is continuing, and a report will be submitted for peer review publication by March 2010.

Project: A053	The relationship between health and volunteering in older women
ALSWH Investigator:	• Professor Julie Byles
Collaborative Investigators:	• Assoc.Professor Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Assoc. Professor David Sibbritt (School of Medicine and Public Health,University of Newcastle) • Professor Jeni Warburton (Australasian Centre on Ageing, University of Queensland)

Much of the international literature supports the view that health may be positively influenced by social involvement, such as volunteering. While it is difficult to affirm a causal relationship, the assumption is that being active in the community through volunteering can help keep people healthy psychologically and even physically. However, there is also some evidence that volunteering might be deleterious for health, given it can be a stressful and time-consuming activity. There will be a growing need for volunteers as populations age and it is likely that governments will look to the voluntary sector to play a greater role in social welfare, therefore clarity around the benefits and harms of volunteering for older people in Australia will be increasingly important. The broad aim of this paper was to explore the relationship between health and volunteering in older women, from a secondary analysis of Australian Longitudinal Study on Womens Health (ALSWH) data. The ALSWH study is uniquely placed to provide longitudinal data on volunteering among a large cohort of older women over three survey waves. Data for this study were from the 1921-26 cohort of the ALSWH, Surveys 1 to 4.

Women were classified as Continuing, New, Intermittent or Never volunteers, and demographic, social and health factors were contrasted according to group at Survey 4, and odds ratios were used to examine differences. Mean scores and 95% confidence intervals for quality of life SF36 subscales and social support were graphed by volunteer status across three surveys (Surveys 2-4). Generalized Estimating Equations (GEEs) analyses were used to develop the model for predictors of volunteering.

By Survey 4, 15.5% of women were Continuing volunteers, 7.5% were New volunteers, 15.3% were Intermittent volunteers, and 34.7% had Never been volunteers.

At Survey 4 a typical volunteer: lived in a rural/remote area, was Australian born, spoke English at home, spoke English well, had higher education level, had an income other than a pension, found it easy to manage on their income, and had private health insurance; had an acceptable WHO BMI score, higher level of reported physical activity, low risk alcohol use, did not need help with daily tasks, had an ADL score of nil, had been beyond the local neighbourhood in the past month, had no health care professional visits in 12 months, had no conditions needing medicines, did not lie awake at night, and had no difficulty seeing newspaper print; had not had a bereavement in the last three years, lived alone, had their own car as their main means of transport, provided occasional or weekly (unpaid) care for children, and was not a fulltime carer for others.

Project: A173	Transport for older women
ALSWH Investigators:	• Professor Julie Byles • Professor Annette Dobson
Collaborative Investigators:	• A/Professor Lynne Parkinson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health and Ageing, University of Newcastle)

Among older women in the Australian Longitudinal Study on Women's Health, driving is the major form of transport, especially for those in rural and remote areas. At Survey 3, 60% of the women in the Older cohort reported driving themselves as their main means of transport. The majority of these women (86%) also reported driving themselves as their main means of transport at Survey 4, but 10% reported they were now being driven by someone else, and a small percentage were using taxis, buses and other options as their main means of transport. Change in main means of transport was not associated with Survey 3 area of residence; however women with lower levels of education were more likely to cease driving. Women were also more likely to cease driving if, at Survey 3, they reported taking five or more medications, being limited a lot in walking 100 metres, and if the had ever reported stroke or arthritis. Women were also more likely to cease driving if they had poor vision at Survey 3 (18% of those who ceased driving had poor vision at Survey 3, and 9% of those who continued driving had poor vision at Survey 3).

There was no association between ceasing driving and change in marital status, or transitions in difficulty in managing on income. Compared with women who continued driving, women who ceased driving as their main means of transport between surveys were more likely to show a transition to worse self-rated health and to needing help with daily tasks, and were less likely to have commenced caring for someone else. At Survey 4, women who ceased driving were more likely to report having made five or more GP visits, and to have made at least one specialist visit. They were less likely to be caring for someone else either in their own home or elsewhere. Women who ceased driving were also more likely to report troubles getting to places at night, getting to shops and services, and getting beyond their local neighbourhood. They were more likely to report that they had not been outside their home or outside their immediate neighbourhood, and that they had not been to movies, theatre etc, a sporting event, a restaurant, or attended a class or course. Further analyses are being undertaken to assess the longer-term impacts of driving cessation using data from Survey 5.

Project: A243	Analysis of care-giving by the old-aged women from ALSWH
ALSWH Liaison:	• Dr Leigh Tooth (School of Population Health, University of Queensland)
Collaborative Investigators:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Professor Christina Lee (School of Psychology, University of Queensland) • Professor Julie Byles (Research Centre for Gender Health and Ageing, University of Newcastle) • Samantha McKenzie (School of Population Health, University of Queensland) • Richard Hockey (School of Population Health, University of Queensland) • Sam Brilleman (School of Population Health, University of Queensland)

This project is part of the contract with the Ageing and Aged Care Division of the Department of Health and Ageing described above for Project W058A.

It involved analysis of data from Surveys 2,3,4, and 5 of the 1921-26 cohort of the ALSWH. Carers were classified into three caring status groups at each survey:

- Women who did not provide care (Not)
- Women who cared for a care recipient who lived with them (With)
- Women who cared for a care recipient who lived elsewhere. (Elsewhere)

To examine the transitions into and out of caring, transition groups were created. First, women whose caring status did not change across the four surveys were categorized into three groups:

- Always With carers: Women who provided live-in care for a care recipient who lived with them at all four surveys
- Always Elsewhere carers: Women who provided care for a care recipient who lived elsewhere at all four surveys
- Never Carers: Women who did not provide care at any of the four surveys.

The remaining women transitioned into and out of caring at some point across the surveys. For these women, transition groups were created for each consecutive pair of surveys: Surveys 2-3, Surveys 3-4, Surveys 4-5. For instance, transitions groups for Survey 3 were determined by combining the caring status groups (Not, With, or Elsewhere as described previously) at Survey 2 and Survey 3. Therefore, for example, participants who were not providing care (Not) at Survey 2 and provided live-in care (With) at Survey 3 were classified in the Not-With transition group for Survey 3.
These paired combinations resulted in nine further groups, which were classified under five categories:

Not caring

- Not-Not: Women who did not provide care at both time points

Started caring

- Not-With: Women who started providing live-in care for a care recipient who lived with them
- Not-Elsewhere: Women who started providing care for a care recipient who lived elsewhere

Stopped caring

- With-Not: Women who stopped providing live-in care for a care recipient who lived with them
- Elsewhere-Not: Women who stopped providing care for a care recipient who lived elsewhere

Changed caring

- With-Elsewhere: Women who provided care at both time points, but the carer lived with a care recipient at the first time point and lived elsewhere at the second time point
- Elsewhere-With: Women who provided care at both time points, but the carer lived elsewhere from a care recipient at the first time point and lived with a care recipient at the second time point

Stayed caring

- With-With: Women who provided live-in care for a care recipient who lived with them at both time points
- Elsewhere-Elsewhere: Women who provided care for a care recipient who lived elsewhere at both time points.

Transitions groups were created for Survey 3 (using caring status groups at Surveys 2 and 3), Survey 4 (using caring status groups at Surveys 3 and 4), and Survey 5 (using caring status groups at Surveys 4 and 5). Caring transitions groups could not be created for Survey 2 because the caring question in Survey 1 did not provide information on where the carer lived relative to the care recipient.

These 12 transition groups were the main factor explored in the analysis of health and use of community services, i.e., whether there was any association between these different types of care groups, and transitions between them, and health and use of community services. In addition to transition groups, exploratory analysis was used to explore the data to determine other factors that may affect health and use of community services.

Of the women who responded, 60% of them did not provide care at any survey from Survey 2 (1999) to Survey 5 (2008). The remaining women included those who provided care at all four surveys (2%)

and women who provided care at some point across the four surveys (38%). Therefore, of the women who provided care at some point during the surveys, the majority (95%) transitioned into or out of their caring roles. The effect of ten factors (including transition groups, time of survey and sociodemographic and health factors), on seven health and community service outcomes (mental health, physical health, number of visits to the general practitioner (GP) and use of nursing or community health services, respite services, homemaking services and home maintenance services) was investigated. Women who never provided care typically had better outcomes compared with carers who lived with their care recipients, but worse outcomes compared with carers who lived elsewhere. Generally, women who used the services or had poorer health outcomes transitioned into or out of providing care for a care recipient who lived with them and women who had better mental health were more likely to have transitioned into or out of providing care for a care recipient who lived elsewhere. The combination of factors that was related to poorer health, visiting the GP five or more times and use of services, is:

- Transitioning into or out of providing care for a live-in care recipient,
- Reporting difficulties managing on available income,
- Not providing care for grandchildren,
- Needing care themselves,
- Reporting sleep difficulties, and
- More memory decline.

The results of this research were presented to the Department of Health and Ageing in a detailed report in October 2009.

Project: A260	Trends in health related quality of life of women in their 70's and 80's
ALSWH Investigators:	• Professor Julie Byles
Collaborative Investigators:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Dr Leigh Tooth (School of Population Health, University of Queensland) • Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Richard Gibson (Research Centre for Gender, Health and Ageing, University of Newcastle) • Sam Brilleman (School of Population Health, University of Queensland)

This study assesses factors associated with survival and maintenance of physical well-being among a large cohort of women, and explores physical, social, and health care factors that distinguish women who live long and well. At Survey 1 in 1996, 26% of the women in the 1921-26 cohort described themselves as being in very good or excellent health, and 39% described their health as “good”. Across five surveys, there has been increasing incidence of conditions such as arthritis, heart disease and diabetes, and a marked decline in physical health scores for the cohort, as measured by Short Form (SF-36) health related quality of life sub-scales. However, while average scores declined, a large proportion of the women experienced minimal change in physical health scores over the 12 years. Using latent profile analysis, we identified four main patterns in the scores among those who survived and stayed in the study at Survey 5: continuously low scores (20%), declining scores (27%), continuously high scores (50%), and scores that were low at baseline and increased by Survey 5 (3%). Factors associated with death include older age, poorer self-rated health, more clinical diagnoses, current or ex-smoker (<10yrs), physical inactivity, underweight. Among survivors who remained in the study, factors associated with maintaining high SF-36 scores include fewer clinical diagnoses, healthy weight, and a range of social and behavioural factors.

A presentation from this project was made at the *International Association of Gerontology and Geriatrics* conference in Paris in July, and a journal article is in preparation.

Project: A190A	Size and structure of social networks in older women: Changes over time
ALSWH Investigators:	• Assoc. Professor Nancy Pachana • Professor Annette Dobson
Collaborative Investigator:	• Dr Deidre McLaughlin (School of Population Health, University of Queensland) • Dr Dimitrios Vagenas (School of Population Health, University of Queensland) • Assoc. Professor Jon Adams (School of Population Health, University of Queensland) • Melanie Watson (Queensland Health)

An abbreviated form of the Duke Social Support Index was examined with respect to factors that might be expected to affect social support for older women over time. Two sub-scales were used: one describing the size and structure of the social network (four items) and the other perceived satisfaction with social support (six items). Over a three year period the network score increased among women whose life circumstances meant that they were likely to receive more support (e.g. recent widowhood). Likewise those women at risk of becoming more socially isolated (e.g. those with sensory loss) became less satisfied with their social support. Changes in both measures were tempered by women's mental health and optimism. Thus, although these sub-scales do not fully reflect the complexity of social support, they are responsive to changes in the lives of older women and can be recommended for use in community-based epidemiological studies.

This is a mixed methods analysis incorporating quantitative and qualitative data to describe changes in older women's social networks over time. The analyses have been completed and a paper has been submitted to *Ageing and Society*.

Project: A149	Self-rated health, age and gender in longitudinal studies in Australia
ALSWH Investigators:	• Professor Julie Byles • Professor Annette Dobson
Collaborative Investigator:	• Professor Kaarin Anstey (Centre for Mental Health Research, Australian National University)
Funding source:	Ageing Well Ageing Productively NHMRC grant

The DYNOPTA dataset is a pooled datafile comprising information from nine Australian Longitudinal Studies of Ageing (LSA). Data were harmonised from contributing datasets to create an entirely new and unique dataset. This datafile is not the summation of the individual datasets, but rather is the compilation of new variables and constructs that were derived from complex harmonisation procedures. Where possible, variables have been harmonised to enable comparison with Australian benchmarks. For example, alcohol consumption data has been harmonised to provide classifications in accordance with the National Health and Medical Research Council. The research program focuses on four outcomes that contribute greatly to the burden of disease and disability, namely dementia and cognition, mental health, sensory disability, and mobility/activity limitations. Mortality is also included as a key outcome in the study.

This year, a paper outlining the cohort profile was accepted by the *International Journal of Epidemiology*, and a paper on older drivers in Australia was accepted the *Journal of the American Geriatrics Society.*

Project: A175	Establishing common linear measures for the SF36 for Australian women
ALSWH Investigators:	• Professor Julie Byles
Collaborative Investigators:	• Dr Lindy Clemson (Faculty of Health Sciences, University of Sydney) • Professor Anita Bundy (Discipline of Occupational Therapy, University of Sydney)

Item response theory (IRT) has potential for establishing common metrics and more efficient methods for assessing well-defined domains of health outcomes. With these goals in mind, John Ware and colleagues have called for the health outcomes community to collaborate in establishing common metrics for consumer-reported health outcomes measures. The potential of IRT is well documented and this method can be used to develop item hierarchies that can be useful for data reduction.

The aim of this analysis is to establish common linear measures for the SF36 through Rash modelling, using Winsteps software. We shall apply a partial credit rating and explore the effectiveness of the category rating scales. In addition we will establish the validity of these measures for use with different cohorts and different subgroups within cohorts, and the item functioning over time. Subgroups will include people with different conditions and levels of comorbidities, and with and without need for help with daily tasks. The sample will be randomly divided into two groups with the first group being used to devise the measures and the second group used to validate the measures produced from the modelling. Benchmarks for scaling will include disability measures (Gill IADL scale) and GADS.

The research is currently on hold as investigators seek appropriate personnel to conduct the analyses, but is expected to resume in 2010.

Project: A058	Use of ALSWH data to illustrate methodology for analyzing longitudinal data
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Leigh Tooth (School of Population Health, University of Queensland) • Assoc. Professor Gita Mishra (University College London)

This project uses ALSWH data to illustrate methodological issues for educational purposes - the data are not used to investigate substantive issues. Work on this project has been ongoing during 2009.

Project: A233	ALSWH: What can we learn from no contact?
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Jennifer Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Anna Graves (Research Centre for Gender, Health and Ageing, University of Newcastle)

Longitudinal studies of younger people often suffer from attrition or loss of study participants and this may lead to bias in the results. The purpose of this analysis is to investigate the impact of attrition in the 1973-78 cohort on prevalence and associations between variables across multiple waves as a potential way of assessing the generalisability of the results. Preliminary findings suggest attrition had little effect on observed associations between variables, although it did have an effect on the prevalence of some variables.

In 2009, a presentation was made at the *Australasian Epidemiological Association Conference* in New Zealand, a paper on non-response in the 1973-78 cohort is currently being completed, and another on reasons for no-contact is planned.

Project: A248	Exploring a corpus-based methodology for the study of language variation
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Assoc. Professor Alison Ferguson (School of Humanities and Social Science, University of Newcastle) • Professor Hugh Craig (School of Humanities and Social Science, University of Newcastle) • Dr Elizabeth Spencer (School of Humanities and Social Science, University of Newcastle) • Mr Kym Colyvas (School or Humanities and Social Science, University of Newcastle)

This study explores the suitability of an application of a corpus-based methodology for the study of language variation in the general population, with a view to the use of this methodology in developing normative reference sets for comparison with the language used by people with acquired communication problems (e.g. associated with dementia, stroke). We will be analysing data from the 1946-51 cohort. Our analysis will focus on the written discourse samples provided by survey respondents in response to the question: 'Have we missed anything? If there is ANYTHING else you would like to tell us about changes in your health (especially in the last three years) please write on the lines below.' This question is designed to elicit comments in relation to health status and changes, and so is a potentially replicable elicitation of written language by people who have experienced stroke or the onset of dementia. We will compare the language used by the same respondents over time, by respondents who differ in terms of relevant demographic variables (age, education, socioeconomic status) and biopsychosocial variables (health, cognitive, and emotional status). The method of analysis to be trialled with these de-identified data uses automated computational analyses, which provides for the use of multivariate statistics on large amounts of data with minimal pre-processing.

We are currently seeking funding support in order to address logistical delays with data analysis, but in the meantime, we have continued our theoretical work in relation to this project, which has been accepted for publication and presentation through the Human Communication Science Network (HCSNet) supported developments for building the Australian National Corpus.

Project: A230	Life events across three cohorts over time
ALSWH Investigators:	• Assoc. Professor Nancy Pachana • Professor Annette Dobson
Collaborative Investigator:	• Sam Brilleman (School of Population Health, University of Queensland)

The main hypotheses are:

- That life events are not as significant as a predictor of physical health outcomes (SF-36), as SES, mood, other psychological variables, and physical activity.
- That life events are not as significant as a predictor of depression (SF-36), as SES, mood, other psychological variables, and physical activity.
- That life events are not as significant as a predictor of use of health services, as SES, SF-36, mood, other psychological variables, and physical activity.

The primary objective of this research is a literature review. Simple methods of analysis will be used and data will be included to illustrate the major methodological and substantive issues discussed.

One paper is being revised prior to submission to a peer reviewed epidemiological journal, and a second will be submitted to *Psychological Assessment* in late 2009.

Project: A257	Mental health and cardiovascular disease in Australian women
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Janneke Berecki (University of Calgary) • Dr Deirdre McLaughlin (School of Population Health, University of Queensland) • Professor Sandy McFarlane (Centre for Military and Veteran's Health, University of Adelaide)

The aim of this project is to analyse longitudinal data from women in the 1946-51 cohort of the ALSWH to examine the temporal relationship between depression and CVD in this group, particularly identifying women who have a history of depression and who may be at increased risk of developing cardiovascular disease. Initial analyses reveal that among women without a history of CVD, depression is associated with subsequent occurrence of CVD and this association cannot be fully explained by sociodemographic, lifestyle or medical factors. A paper is currently in preparation.

Project: W066	The predictors, antecedents and efficacy of treatment of postnatal depression in Australian women
ALSWH Liasion:	• Dr Deborah Loxton
Collaborative Investigators:	• Dr Jayne Lucke (School of Population Health, University of Queensland) • Catherine Chojenta (Research Centre for Gender, Health and Ageing, University of Newcastle)
Funding source:	University of Newcastle Early Career Researcher Grant (Catherine Chojenta)

While the longitudinal study data offers a rich source of information to investigate both the long and short term predictors of PND, additional detailed information is required on the experienced preceding a diagnosis of PND, which can be used in conjunction with previously collected survey data. For example, the events of childbirth have previously been related to the development of PND, such as mode of delivery (Brown et al, 1994), which is available in the survey data, however emotional coping through childbirth (Bloch, Rotenberg et al 2006) and duration of labour (Johnstone, Boyce et al, 2001) are not available in the survey data. Furthermore, the longitudinal study does not gather information about the diagnosis, treatment and recovery from PND, all of which will be investigated in this substudy.

In-depth qualitative telephone interviews will be conducted with women who have indicted in Survey 4 that they had been diagnosed or treated for PND in the past, as well as with women who have not indicted they have experienced PND. Around 60 participants will be sent a letter of invitation, and it is expected that around 40 participants will take up the invitation to participate. Participants will be selected based on responses to Survey 4 in 2006. Those eligible will be women who have given birth to a child in the four years prior to Survey 4, and half of the women will have answered positively to the PND diagnosis item, and half will have answered negatively. A pool of 150 participants will be drawn, and participants will only be contacted on completion of their main survey. Data analysis will run concurrently with data collection so that saturation of themes can be assessed.

This project is currently underway, with interviewing to begin in November 2009.

Project: W061	Complementary and alternative medicine (CAM) use among mid age women: A national mixed-method study across the urban-rural divide
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Assoc. Professor Jon Adams (School of Population Health, University of Queensland) • Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Dr Alexander Broom (University of Sydney) • Dr Marie Pirotta (University of Melbourne) • Professor John Humphrey (Monash University) • Professor Marc Cohen (Royal Melbourne Institute of Technology) • Assoc. Professor Joanna Barners (University of Auckland) • Dr Deirdre McLaughlin (School of Population Health, University of Queensland) • John Wardle (School of Population Health, University of Queensland) • Dr Gavin Andrews (McMaster University)

The aim of this project is to understand why higher proportions of mid-age women use complementary and alternative medicines (CAM) in rural areas than in urban areas of Australia. Women have been identified as major consumers of CAM in Australia – where CAM constitutes a diverse group of health-related substances, therapies and disciplines that are not considered to be part of mainstream medical care. The project will test whether higher levels of CAM use by mid-age women in rural areas is explained by:

- limited access to conventional health care services,
- closer ties between rural GPs and CAM provision,
- ease of access to complementary health practitioners,
- dissatisfaction with conventional health care services,
- stronger informal community networks, or
- a greater perceived effectiveness of CAM.

The study will use a sequential mixed-method design consisting of a mailed substudy survey of CAM users in 2008 (n=1690), telephone interviews with a subset (n=160) and diary methods (n=40), with the samples stratified by remoteness of area of residence.

The project is progressing well and in line with the original timeframe. The Community Survey (Stage 1 of the study) is now almost completed. By the end of September, the researchers had received a total of 1,708 completed surveys from participants, a response rate of about 81%. The data is now being cleared and data analysis will soon commence. The researchers are also preparing for the second stage of the research project (interview) which is due to start in early 2010.

Project: W065	The use of complementary and alternative medicines (CAM) in older urban and rural women
ALSWH Investigator:	• Dr Jayne Lucke
Collaborative Investigators:	• Assoc. Professor Jon Adams (School of Population Health, University of Queensland) • Dr Deirdre McLaughlin (School of Population Health, University of Queensland)

The aim of this project is to understand why older women in rural and regional areas of Australia are more likely than their urban counterparts to use complementary and alternative medicines and therapies (CAM). The project employs a qualitative, interview-based design and seeks to establish an in-depth understanding of the experiences of older women in relation to their CAM use and underlying reasons for this use. The central research question to be explored is: 'What factors influence older women's use of CAM and how do these differ according to geographical location'. From this question, a set of secondary questions will be developed based on the themes outlined above to facilitate an exploration of each topic. These open questions will allow each woman to describe her experiences with CAM and reflect on the underlying reasons for the choices that she has made.

Participants are women from the ALSWH 1921-26 cohort who responded positively to a question about CAM use in Survey 5 (2008), and who live in urban or regional areas of South East Queensland. This geographical area has been selected to allow for ease of access for interviews. Based on data available from Survey 4 (2005) a total of 41 urban and 31 regional women in this geographical area are CAM users. From this population, an initial sample of 30 women will be randomly selected with equal numbers of rural and urban women, and invited to participate in the study. Random sampling and invitations to participate will continue until the proposed number of interviews is achieved. A total of 30 interviews will be conducted with 15 urban women and 15 women living in rural and regional areas. Interviews are digitally recorded for ease of later transcription, last for 1 to 2 hours, and are conducted at the participant's home or other suitable location at a time convenient for the participant.

All rural interviews have been completed and interviews with the urban women are underway. Initial thematic analyses of the rural women's data are in progress, and some results have been presented at the NORPHCAM (Network of Researchers in the Public Health of Complementary and Alternative Medicine) conference in Brisbane in October 2009.

1.2.2 Completed projects

Project: W047A	How well do health and community services help older people with neurodegenerative disorders and their family caregivers?
ALSWH Liaison:	• Dr Leigh Tooth
Collaborative Investigators:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Professor Christina Lee (School of Psychology, University of Queensland) • Samantha McKenzie (School of Population Health, University of Queensland) • Dr Jayne Lucke (School of Population Health, University of Queensland) • Sam Brilleman (School of Population Health, University of Queensland) • Assoc. Professor Gerard Byrne (Department of Psychiatry, University of Queensland) • Professor Andrew Wilson (Queensland Health)

In 2008 researchers in the ALSWH team at the University of Queensland, were contracted by the Ageing and Aged Care Division of the Department of Health and Ageing to provide detailed analyses of caring by women born between 1946 and 1951, and 1921 and 1926. These analyses were to examine the influence of factors such as where carers lived (both in relation to the care recipient and in terms of area of residence) and care recipient needs (such as functional dependency levels) and the frequency and amount of care. The research was to provide evidence to address the following questions:

1.Transitions:

- What are the transitions into and out of caring over the lifespan?
- What factors contribute to deciding to care for a family member or friend?
- How do women manage the transition to caring, particularly in relation to labour force participation?
- What factors contribute to the decision to decrease working?

2.Carer needs:

- What is the broad impact of caring on women's lives?
- What needs, unmet or under met, can be identified for carers?

3.Interventions / services:

- What types of interventions / services do carers use?
- What patterns of health or community service use are demonstrated?
- What information can be provided on access, information, and perception of services that carers use?
- What interventions / services lessen the impact of caring?
- What interventions / services are effective?
- What carer support strategies and interventions assist or could assist employed carers?
- What type / dose / timing of respite interventions are effective in maintaining a caring relationship for the different carer types and settings?

This research was a nested cross-sectional substudy of the ALSWH. Participants were selected based on their responses to Survey 3 of the 1921-26 cohort (2002). The intention of the original project was to select women who cared for recipients with neurodegenerative disorders. However, to obtain an adequate sample size for statistical analysis, all women who indicated that they were providing care for someone living with them, either from a specific survey item or in-text responses, and who had not been selected for other ALSWH substudies, were invited to participate (n=674, aged 78-83 years).

The women were sent a written invitation and the survey. Overall, 201 (29.8%) of the women invited to participate reported being ineligible (i.e. they did not or no longer provided care), 86 (12.8%) did not want to participate, no response was received from 78 (11.6%), 3 had died and 306 (45.4%) returned surveys, of which one was not complete.

Of the 305 returned completed surveys, 276 (91%) were from carers who lived with their care recipients, 4 (1%) were from carers who lived elsewhere and 25 (8%) were from carers whose recipients lived in care facilities. Women who cared for someone living in a care facility were excluded from analysis because access to health and community services was not relevant to nursing home participants in the same way as for those living in the community. Therefore, there were data available from 280 women who cared for someone who may have used community services.

Those who did not respond initially were contacted by phone and encouraged to complete the survey if they were eligible. Those unwilling to complete the postal survey were offered the option of completing it over the phone. This only occurred for 5 of the 280 (1.8%) women.

The survey consisted of 53 closed-response questions (some with open-ended components) and 5 open-ended questions. The survey was constructed in 14-point font and was written at a grade seven to eight reading level, consistent with the educational levels of Australian women now in their 70s and 80s. The survey content was informed by focus groups and pilot tested.

The results showed that carers had poorer mental and physical health compared with the entire 1921-26 cohort of the ALSWH. The carers who completed the survey provided the majority of the help for the care recipients compared with other unpaid carers or paid services. Use of services was low. However, when the services were used, the carers reported that they were easy to access, they were of a good quality, and that they received as much as they wanted. The use of services, particularly respite care, was strongly driven by care recipient preference. The most common themes of the positive aspects of caring were ‘characteristics of the relationship between the carer and care recipient,’ such as companionship, and ‘personal concerns or attitudes of the carers,’ such as the carers’ outlook on life and an appreciation for what they do have. The most discussed theme for the negative aspects of caring was ‘practicalities of the situation’ which included restrictions on everyday life and dissatisfaction with the present situation and repetitious routine.

The results of this research were presented to the Department of Health and Ageing in a detailed report in May 2009.

Project: A215	The contribution of participation in sport and physical activity on the well-being of women
ALSWH Investigator:	• Professor Wendy Brown
Collaborative Investigators:	• Dr Rochelle Eime (School of Human Movement and Sport Sciences, University of Ballarat) • Dr Warwick Payne (School of Human Movement and Sport Sciences, University of Ballarat) • Dr Jack Harvey (School of Human Movement and Sport Sciences, University of Ballarat)

This research project involved comparing ALSWH data with data collected from female participants who were involved in sport and physical activity to examine the contribution of participation in sport and physical activity on the well-being of women. The analysis is now complete and a paper has been accepted for publication in *Medicine and Science in Sport and Exercise.*

Project: A083A	Major dietary patterns of young and middle-aged Australian women.
ALSWH Investigators:	• Professor Annette Dobson • Professor Wendy Brown • Assoc. Professor Gita Mishra
Collaborative Investigators:	• Assoc. Professor Kylie Ball (School of Exercise and Nutrition Sciences, Deakin University) • Professor Graham Giles (Cancer Council of Victoria) • Dr Sarah McNaughton (School of Exercise and Nutrition Sciences, Deakin University)

This project assessed the major dietary patterns among two age cohorts of Australian women using factor analysis of food frequency questionnaire (FFQ) data.

The main research questions were:

- Are there clearly distinctive dietary patterns among Australian women that can be identified by factor analysis of FFQ data obtained at survey 3 for the 1973-78 and 1946-1951 cohorts of the ALSWH?
- If there are clear patterns then what are the nutritional characteristics associated with these patterns?
- How do these patterns relate to the sociodemographic characteristics of the women and selected behavioural risk factors?
- To what extent do the patterns differ for the two cohorts?

The project is now complete. The results were presented at the *Heart Foundation* conference in Brisbane in July, and a paper has been submitted to the *European Journal of Clinical Nutrition*.

Project: A189	Height loss in elderly women
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Janneke Berecki (School of Population Health, University of Queensland) • Richard Hockey (School of Population Health, University of Queensland) • Melanie Spallek (School of Population Health, University of Queensland)

Height loss is associated with osteoporosis but little is known about its consequences. We aimed to examine risk factors for height loss and symptoms associated with height loss. Elderly participants of the Australian Longitudinal Study on Women's Health (aged 70-75 in 1996) who provided data on height at any two consecutive surveys (held in 1996, 1999, 2002 and 2005) were included (N=9852). A regression model was fitted with height loss as the outcome and socio-demographics, osteoporosis and other risk factors as explanatory variables. Symptoms related to postural changes or raised intraabdominal pressure were analysed using height loss as an explanatory variable. Over 9 years, average height loss per year was -0.12% of height at baseline. Height loss was greater among those with osteoporosis, low body mass index, and those taking medications for sleep and anxiety. After adjusting for confounders, symptoms associated with height loss of ≥2% were heartburn/indigestion constipation, and urinary stress incontinence

These findings highlight the importance of monitoring height among the elderly in general practice, and targeting associated symptoms. This project has been completed and the paper accepted for publication in *Osteoporosis International.*

Project: A239	Longitudinal approach to menopausal transitions
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Janneke Berecki (School of Population Health, University of Queensland) • Dr Nelufa Begum (School of Population Health, University of Queensland)

The aim of this study was to determine which symptoms commonly reported by women at mid-life are associated with menopausal transition, after adjusting for ageing, life events, sociodemographics and lifestyle factors.

Women from the 1946-51 cohort participating in the ALSWH between 1996 (Survey 1, ages 45 to 50) and 2007 (Survey 5, ages 56 to 61) were included in the analyses if natural menopausal status could be determined at any survey (n=8649 out of 13716 participants). Natural menopausal status was determined from reported menstruation patterns. A survival function describing age at menopause was computed. Logistic regression models for repeated measures were used to estimate the association between menopausal stage and symptom prevalence.

There were 6814 (79%) women who reached natural menopause before 2007. The median age at menopause was 52 years. Compared to the premenopausal phase, the menopause was associated with hot flushes (odds ratio= 8.6 [95% CI= 7.5 to 9.9]), night sweats (5.5 [4.8 to 6.3]), and to a lesser extent with stiff or painful joints (1.6 [1.4 to 1.8]), difficulty sleeping (1.4 [1.2 to 1.6]), and poor/fair self-rated health (1.6 [1.3 to 1.9]), after controlling for confounders. Prevalence of some symptoms was still raised more than 7 years after menopause. Headaches/migraines were negatively, and urinary incontinence positively associated with ageing.

Treatment such as hormone replacement therapy should be targeted at vasomotor symptoms which are most strongly associated with menopause rather than at less specific symptoms related to ageing per se.

This work has been completed and a paper is in press for *Menopause, the Journal of the North American Menopause Society.*

Project: A151A	Examining health risks across sexual identity groups
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Ruth McNair (Department of General Practice, University of Melbourne) • Professor Tonda Hughes (College of Nursing, University of Illinois) • Assistant Professor Laura Szalacha (College of Nursing, University of Illinois) • Professor Sharon Wilsnack (Department of Clinical Neuroscience, University of North Dakota)
Funding source:	Lesbian Health Fund, USA

This study examined changes in sexual identity between two surveys of the 1973-78 cohort. Health service usage comparisons across all sexual identities, with regression analyses to determine influences on health service usage, including socioeconomic status, education, satisfaction, mental health and physical health indicators.

Analyses are now complete and findings include: poorer health status amongst non-heterosexual women, leading to higher health service usage, lower satisfaction and lower continuity of primary care amongst non-heterosexual (sexual minority) women, indicating a need for improved cultural sensitivity

of health services. Again bisexual and mainly heterosexual women appear to be the most disadvantaged. A paper was submitted for publication in November, and the project is now complete.

Project: A210	Access to medicines for cardiovascular health and primary care services in rural and remote Australia
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Lynelle Moon (National Centre for Epidemiology and Population Health, Australian National University) • Susana Senes (Australian Institute of Health and Welfare) • Anne Broadbent (Australian Institute of Health and Welfare) • John Woodall (Australian Institute of Health and Welfare)
Funding source:	Department of Health & Ageing and the Australian Institute of Health & Welfare

This project aimed to:

- Describe medicines used by women in the 1921-26 cohort with history of cardiovascular conditions.
- Describe cardiovascular medicines used by older women with or without reported cardiovascular conditions.
- Compare reported use of cardiovascular medicines by women living in rural, remote and urban areas.
- Assess associations with factors that may affect use of medicines, such as reported number of GP consultations, hospital admissions, number of medicines reported, whether managing on income available.
- Assess migration of women who reported taking cardiovascular medicines between urban, rural and remote areas from Survey 1 to 4.

Analysis of the ALSWH data has been completed, but the results were not used in the draft report which relied instead on Medicare (MBS & PBS) data, BEACH National Health Surveys and other official data only. The project is now complete.

Project: A207	Continuity and change in tobacco use among young women: A 10 year prospective analysis
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Professor Neville Owen (School of Population Health, University of Queensland) • Dr Liane McDermott (School of Population Health, University of Queensland)

This project had the following broad research aims:

- To examine, prospectively, factors associated with continuity and change in smoking behaviour among young adult women over a 10 year period.
- To examine trajectories of smoking among young adult women who have never had children over a 10 year period, including a thorough investigation of factors associated with long-term, high-rate smoking.
- To examine factors associated with continuity and change in smoking behaviour before and after pregnancy, with a specific focus on smoking relapse.

A range of explanatory variables were examined including demographic, psychosocial, lifestyle risk behaviour and life-stage transition variables. A paper was published in *Addiction* in 2009, and the project is now complete.

Project: A076A	The health and well-being of sole mothers
ALSWH Investigators:	• Dr Deborah Loxton
Collaborative Investigators:	• Jenny Powers (Research Centre for Gender, Health and Ageing, University of Newcastle) • Stacey Hosking (Research Centre for Gender, Health and Ageing, University of Newcastle) • Rosie Mooney (Research Centre for Gender, Health and Ageing, University of Newcastle)

This project updated previous work on the physical, social and economic health and well-being of women with dependent children following relationship breakdown. Previous analyses of data from Surveys 1-3 of the 1973-78 cohort showed that sole mothers experienced worse mental health than partnered mothers and women without children, and that sole mothers with higher social support experienced significantly better mental health than sole mothers with less social support. However, sole mothers were also less likely to have social support available than other women. Social support at Survey 3 was measured by a subset of the MOS Social Support Scale. The current project included the full MOS Social Support Scale, which was incorporated in the fourth survey of the 1973-78 cohort, conducted in 2006, and which allowed a more detailed examination of sole motherhood, social support and mental health.

Results were presented at the *Mental Health Congress* in March 2008, and the project is now complete.

Project: A156	Relationship between sexual violence, sleep problems and health
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Professor Jill Astbury (School of Psychology, Victoria University) • Dr Gerard Kennedy (School of Psychology, Victoria University)

It is hypothesised that women who report sexual violence compared with those who do not report such violence will have significantly higher rates of sleep problems, medication and other drug use, poorer health and higher rates of diagnosed mental health problems, but lower satisfaction with their health care.

Analysis of data relating sleep problems and different kinds of interpersonal violence will be analysed, with a focus on distinguishing the contribution to poor sleep made by sexual violence compared with other types of violence, and taking into account the role of socioeconomic and other mediating variables.

In examining the differences in the nature and extent of sleep problems of women who have experienced sexual violence compared with those who have experienced other forms of violence or no violence, the researchers seek to understand how membership of these groups can be predicted by a range of health risk behaviours, including the use of prescribed medications, alcohol and tobacco use, and illicit drug use, as well as various measures of mental health and well being.

The project is now complete – a presentation was made in July this year at an international sexual violence forum in Johannesberg, and a paper is in preparation for submission to *Social Science and Medicine*.

Project: A070A	Termination of pregnancy in Australia: A descriptive analysis of trends over time and associations in the younger cohort
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Dr Angela Taft (Research Centre for Gender, Health and Ageing, University of Newcastle) • Ms Lyndsey Watson

Using data from the 1996 and 2000 surveys of the 1973-78 cohort this analysis aimed to:

- Provide descriptive summary statistics of the population of young women who had one or more terminations, including socio-demographic characteristics, area of residence/location, and use of contraception, comparing them within age strata with women who have not had a termination, and those who have not had any pregnancy.
- Analyse the associations of pregnancy termination with use of licit and illicit drugs and women's satisfaction with, and access to, appropriate health services
- Examine the changes in reported terminations from the 1996 to the 2000 survey, and describe their relationship to other pregnancy outcomes in the same time period, for the whole young women's cohort.
- If the number of women who have ≥1 termination, and/or ≥ 1 miscarriage, prior to a first birth is large enough, describe the association of prior pregnancy losses (termination and miscarriage), with gestational age in the first birth.
- Compare the reported rate of terminations in these surveys with age-specific rates from 1996 to 2000 collected through the mandatory reporting systems in South Australia and the Northern Territory, both of whom produce annual reports.

- Compare the pattern of reported pregnancies (all outcomes) in the 1973-78 cohort with data on young women in the same age groups in the three Victorian Surveys of Recent Mothers (1989, 1994, 2000).

The project is now complete. Two papers were published (in 2007 and 2008) and this year Angela Taft presented findings in July to the Australian national general practice conference in Melbourne, and in October to the United States Family Violence Prevention Fund conference in New Orleans.

Project: A208	Regional variation in the health of elderly Australian women
ALSWH Investigators:	• Professor Annette Dobson • Professor Julie Byles • Assoc. Professor Nancy Pachana
Collaborative Investigators:	• Dr Deirdre McLaughlin (School of Population Health, University of Queensland) • Dr Dimitrios Vagenas (School of Population Health, University of Queensland) • Professor Konrad Jamrozik (School Of Population Health and Clinical Practice, University of Adelaide)
Funding Source:	NHMRC/ARC Ageing Well Ageing Productively Grant

Older people may act as sensitive indicators of the effectiveness of health systems. For example they may help us understand the reasons for the higher mortality reported in the literature, in rural areas than in urban areas. The objectives of this study were to estimate in a sample of older women: (i) the mortality of urban and rural women as well as by jurisdiction (ii) differences in factors which could contribute to any mortality differences. Baseline and longitudinal analysis of data from the 1921-26 cohort were used. Factors considered included: urban or rural residence in Australian States and Territories, sociodemographic characteristics, health related behaviour, survival up to the 1st of October 2006, physical and mental health scores, and the use of medical services. Mortality was higher in rural rather than in urban women but there were no differences between States and Territories. There were no consistent baseline or longitudinal differences between regions for physical or mental health, with or without adjustment for sociodemographic and behavioural factors. There were differences, however, between urban and rural women with respect to use of health services: rural women had fewer visits to general practitioners and medical specialists, consistently in most States and Territories. Differences in use of health services are a more plausible explanation for higher mortality in rural than urban areas than differences in other factors.

In 2009 a paper was published in the *Australian and New Zealand Journal of Public Health*.

Project: A225	The relationship between skin disease and psychological morbidity in young Australian women
ALSWH Investigator:	• Dr Deborah Loxton
Collaborative Investigators:	• Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Dr Parker Magin (School of Medicine and Public Health, University of Newcastle) • Kylie Bailey (School of Medicine and Public Health, University of Newcastle)

In this project we examined longitudinally the relationship between self-reported skin disease and psychological morbidity (depression, anxiety and stress) in young women. The women were aged 22 to 27 years at the time of the first of 3 surveys conducted over 6 years. The relationship was

examined from the perspective of depression, stress and anxiety being causative of skin disease (rather than the opposite direction of causality).

We found that in these young women depression and stress (but not anxiety) were significantly associated with skin problems. This provides evidence for depression and stress causing skin disease. A paper was published in the *Archives of Dermatology* in 2009, and the project is now complete.

Project: A226	Relative survival as an indicator of generalizability of results from longitudinal studies of older people
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Leigh Tooth (School of Population Health, University of Queensland) • Richard Hockey (School of Population Health, University of Queensland)

Generalisability of longitudinal studies is threatened by issues such as the representativeness of the initial sample, choice of sampling frame and attrition. To determine representativeness, cohorts are often compared with the population of interest at baseline on demographic and health characteristics. This study illustrates the use of relative survival as a tool for assessing generalisability of results from a cohort of older people among whom death is a potential threat to generalisability.

Data from the 1921-26 cohort (n=12,416, aged 70-75 in 1996) from the Australian Longitudinal Study on Women's Health was used. Vital status was determined by linkage to the National Death Index, and expected deaths derived using Australian life tables. Relative survival was estimated using observed survival in the cohort divided by expected survival among women of the same age and State. Overall the ALSWH women showed relative survival 9.5% above the general population. Within the States and Territories the relative survival advantage varied from 6% to 23%. The interval specific relative survival remained relatively constant over the 12 years indicating that the survival advantage of the cohort has not diminished over time.

This study has shown that relative survival can be a useful measure of generalisability in a longitudinal study of the health of the general population, particularly when participants are older.

A paper has been submitted to *Emerging Trends in Epidemiology*, and the project will also be used for the ALSWH Major Report for 2010, Women, health and ageing: Findings from the Australian Longitudinal Study on Women's Health.

Project: A257	Participation in cohort studies of older people: Experience from the Australian Longitudinal Study on Women's Health
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Sam Brilleman (School of Population Health, University of Queensland) • Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Professor Julie Byles (Centre for Gender, Health and Ageing, University of Newcastle)

Previous studies have identified associations between a number of risk factors and participant attrition. Consequently, the representativeness of the cohort in a longitudinal study may deteriorate and results may not be generalisable to the target population.

Using a series of hypothetical situations, this project considered differential associations a risk factor may have with death and non-death attrition. Empirical data from the ALSWH for participants born in 1921-26 were used to identify associations which occur in practice, and national cross-sectional data are used to illustrate the evolution of bias over approximately ten years.

The hypothetical situations illustrate how death and other attrition can theoretically affect changes in bias over time. Between 1996 and 2008, 28.4% of ALSWH participants died, 16.5% withdrew and 10.4% were lost to follow up. There were differential associations with various risk factors, for example, non-English speaking country of birth was associated with non-death attrition but not death whereas underweight BMI was associated with death but not other forms of attrition. Compared with national data, underrepresentation of non-English speaking country of birth increased from 3.9% to 7.2% and underweight BMI from 1.3% to 3.8%.

Deaths occured in both the target population and study cohort, while other forms of attrition occured only for the study cohort. Therefore non-death attrition may cause greater bias in longitudinal studies than death. This is an important issue for studies of older people where attrition due to death and other health related causes is greater.

This work has been completed and will form part of Major Report E. The manuscript is currently being revised for submission to a journal.

Project: A259	Health across generations: Findings from the Australian Longitudinal Study on Women's Health
ALSWH Investigator:	• Professor Annette Dobson
Collaborative Investigators:	• Dr Jayne Lucke (School of Population Health, University of Queensland) • Dr Leigh Tooth (School Population Health, University of Queensland) • Professor Wendy Brown (School of Human Movements, University of Queensland) • Professor Julie Byles (Centre for Gender, Health and Ageing, University of Newcastle) • Melanie Spallek (Australian Social Science Archive, University of Queensland)

Interpretation of changes in health and health care utilisation patterns across the lifespan depends on understanding of the effects of age, period and cohort. The purpose of this paper is to illustrate differences between three generations of women in demographic, behavioural and health status indicators, over a period of 12 years from 1996 to 2008. The paper examines data from the Australian Longitudinal Study on Women's Health (ALSWH), a broad-ranging project funded by the Australian Government Department of Health and Ageing and involving three age groups of women (born between 1973-78, 1946-51, and 1921-26) who were first surveyed in 1996 and will be followed-up every three years until at least 2015. Patterns in selected demographic factors (marital status and level of educational qualification), health risk factors (smoking, alcohol consumption, physical activity, body mass index) and health conditions (asthma, hypertension, diabetes and depression) were examined in order to illustrate examples of biological age, generational differences or period effects that affect all age groups and generations simultaneously. The results can be used to inform the development of responsive and effective models for both prevention and management of chronic disease, including health and aged care systems

This project summarising major findings to date from ALSWH has been completed. The results will be included in Major Report E and have been submitted for publication.

1.2.3 Student projects in progress

Projects: A042/A116B	Adjusting for death in longitudinal studies
PhD Candidate:	• Steven Bowe (Centre for Clinical Epidemiology and Biostatistics, University of Newcastle)
Supervisors:	• Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Dr Anne Young (University of Newcastle)
Expected completion:	May 2010

Project objectives:

- To investigate the statistical methods used to account for death in longitudinal studies.
- To apply the current statistical methods to ALSWH data for the 1921-26 cohort and evaluate the advantages and disadvantages of the methods.
- To determine whether there is a need to improve current statistical methods and apply and assess new strategies if applicable.
- To examine the impact of diabetes on quality of life among older women - adjusting for deaths by applying the methods developed.

A literature review was conducted to examine the statistical methods that are currently used to account for dropout due to death. A method proposed by Diehr and colleagues has been applied to ALSWH data. The method transforms the physical component score (PCS) of the SF-36 to a new score which estimates the probability of being healthy at the next time point. A value of zero is assigned to participants at time points when they have missing data due to death.

The transformation derived from the ALSWH data provides evidence that the methodology for transforming the PCS to account for deaths is sound. The three-year equation provided good estimates of the probability of being healthy in three years and the method allowed deaths to be included in an analysis of changes in health over time. Our ALSWH transformation equation has been published in 2006 and the paper has been cited by Selim et al 2007.

The impact of imputing values for PCS that are missing for reasons other than death were examined. It has been acknowledged that the previous work transforming the PCS and using a value of zero after death may bias results, as those who die may be given too much weight in the calculations compared with people who have data missing for other reasons. This would be particularly applicable when studying the impact of chronic disease such as diabetes where there is a relatively high death rate and also higher rates of missing data. Imputation methods have been applied to produce complete datasets from which to estimate the true change in HR-QOL over time. In order to choose an appropriate imputation method the missing data assumptions such as, Missing at Random (MAR) and Not Missing at Random (NMAR) have been considered.

Two additional approaches to account for deaths in longitudinal studies of ageing populations have been adapted and further developed but are still being fine tuned at this stage. Results will be available soon from these methods.

Results:

1. Observed longitudinal changes in physical health for women with diabetes may be poorly estimated due to loss of data through deaths and other reasons.

2. Analysis of changes in physical health, after including scores for participants who die, indicate poorer and worsening physical health for women with diabetes.

3. Longitudinal analysis including values for death, as well as imputing value missing for other reasons, may provide better estimates.

Currently, comparisons are being made between results from longitudinal imputation approaches where the assumption of MAR and NMAR have been applied. Presently, full Bayesian approaches are being considered for the imputation methods.

Finally, all three approaches to accounting for deaths have been modelled using random coefficients models to determine the impact of accounting for participants who have died over time. It was hoped that results will be completed and available shortly.

Project: A205	The impact of health on lifetime earnings, labour force experience and retirement and the effects of all these factors on the degree of income and health inequalities post retirement
PhD Candidate:	• Joanne Flavel (National Institute of Labour Studies, Flinders University)
Supervisors:	• Professor Sue Richardson (National Institute of Labour Studies, Flinders University) • Dr Anna Ziersch
Expected completion:	2011

The project applies an economic framework to empirically analyse relationships between poor health and labour market outcomes in Australia. By discovering the ways in which poor health during working age can result in accumulating labour market disadvantage over the life course, this project will enable a better understanding of the effect of earlier health inequities on outcomes post retirement, particularly in relation to the degree of income and health inequities for retirees. It will build on previous research which studied the relationship between health and a number of individual labour market outcomes by conducting a thorough analysis of the extent to which poor health results in accumulating disadvantage across a range of outcomes. It is proposed that the effects of ill health on the earnings distribution and on labour force experience leads to increased income and health inequities post retirement.

A detailed and thorough literature review has been completed, and longitudinal econometric analysis is underway. Plans for further analyses are being developed, and it is anticipated the project will continue until April 2011.

Project: A228	Economic analysis of BMI and employment patterns in Australian women
PhD Candidate:	• Nicole Au (Centre for Health Economics, Monash University)
Supervisors:	• Professor Wendy Brown (School of Human Movements, University of Queensland) • Assoc. Professor Bruce Hollingsworth

Economic studies have claimed that the rise in overweight and obesity over the last few decades may be partly due to the increase in the labour force participation rates and hours worked, particularly by women. The main stumbling block to investigating the relationship between BMI and labour market participation is endogeneity, or the problem of reverse causality: it is unclear if BMI affects labour market participation and wages, or the other way round, or if there is no causal relation and (a set of)

other variables affect jointly BMI and labour market variables. Longitudinal data are required to tackle this problem, because they allow separating variations between observations at one point in time from variations over, and a sequential analysis of events.

This project uses longitudinal data from the ALSWH to investigate the relationship between labour market outcomes (employment status, income and hours worked) and obesity in women, using data from all surveys of the 1946-51 and 1973-78 cohorts. The main questions will be:

- Is there an association between a higher BMI and employment status?
- Is there an association between longer work hours and a higher BMI in employed women?
- Is there an association between lower wages and a higher BMI in employed women?

Investigation of the relationship between employment, long work hours and obesity is being undertaken. Preliminary results suggest a positive relationship between long work hours and obesity (and BMI) among women in the mid cohort.

In 2009, presentations from this project were made at the *International Health Economics Association World Congress* in Beijing in July, and at the *Australian Health Economics Association Conference* in Hobart in October.

Project: A236	Risk factors associated with endometriosis and pelvic pain
Student:	• Gregory Goldstein (Northwestern University)
Collaborators:	• Frank Tu (Evanston Northwestern Healthcare) • Jennifer Beaumont, (Evanston Northwestern Healthcare) • Sangeeta Senapati (Evanston Northwestern Healthcare) • Kristen Pozolo (Evanston Northwestern Healthcare) • Hongyan Du (Evanston Northwestern Healthcare)

Endometriosis is thought to affect between 3-10% of women, with a prevalence of about 15-20% in women with pelvic pain and 25-35% in women with infertility. Women with dysmenorrhea and dyspareunia often may go many years before the diagnosis is finally made. The disease is diagnosed histologically on identification of ectopic uterine tissue (outside the uterus), typically on the peritoneal surfaces of the pelvis. The underlying pathophysiology likely includes impaired circulating immune function in the peritoneum, enhanced survival of endometrial cells, aberrations in angiogenesis, enhanced invasiveness of cells, and local autoproduction of estrogen. Interestingly, women with endometriosis appear to be at risk for generalized pain sensitivity outside of referral patterns from the abdomen and pelvis, suggesting a systemic defect in pain processing also is related to this disorder.

Because the diagnosis of endometriosis ideally is made by invasive surgical biopsy, very little is known about potential risk factors for development of endometriosis from prospective studies. Of note, pelvic pain which commonly triggers evaluation for endometriosis, is associated with many different comorbidities such as sleep disorders, anxiety, depression, and history of abuse/personal trauma. Unfortunately, many of the studies previously done are not designed to disentangle whether the psychological issues precede, or result from the onset of pelvic pain. The ALSWH's longitudinal design and focus on multiple age cohorts thus makes it a crucial tool for potentially unravelling some of these associations. This project has two phases:

Phase 1: An initial cross-sectional study, which will characterize demographic, psychological and pelvic health differences in endometriosis patients with and without daily bodily pain, compared to patients with severe dysmenorrhea (without endometriosis) with and without daily bodily pains, and healthy controls (neither endometriosis, dysmenorrhea or daily pain). These characteristics will include, but not be limited to age, ethnicity, education, SES, history of trauma/abuse, depression, anxiety, pelvic visceral symptoms, optimism, and pregnancy outcomes.

Phase 2 : Longitudinal (pre-/post-endometriosis diagnosis) analyses, which will :

a) Determine if early experiences with regular exercise (data from 1996 ALSWH youngest cohort) are protective for the development of endometriosis with and without severe period pain and daily bodily pain.

b) Determine if early, regular use of oral contraceptives (data from 1996 ALSWH youngest cohort) is protective for the development of endometriosis with and without severe period pain and daily bodily pain.

Analysis is nearing completion, and a paper on the effect of oral contraceptive use on the development of endometriosis is currently in preparation. An abstract, titled 'Does regular physical activity protect women from development of endometriosis', has been submitted to to the 2010 American College of Obstetricians and Gynecologists (ACOG) conference,

During 2009, a poster of the study was presented at two undergraduate research symposiums - the *Chicago Area Undergraduate Research Symposium*, and the *Northwestern University Undergraduate Research Symposium*, where an award for outstanding poster in the natural sciences & engineering division was received. The poster was also presented at American College of Physicians Maine Chapter Scientific Meeting on October 16, 2009.

Project: A185	An examination of trends in women's sexual and reproductive health over 10 years: Findings from the ALSWH
PhD candidate:	• Danielle Herbert (School of Population Health, University of Queensland)
Supervisors:	• Dr Jayne Lucke (School of Population Health, University of Queensland) • Professor Annette Dobson (School of Population Health, University of Queensland)
Funding source:	University of Queensland mid-year scholarship
Expected completion:	August 2010

The main focus of this project is the analysis of sexual and reproductive health (SRH) as predictors of fecundity, fertility and infertility. The project is currently in Phase 2 of the research plan.

Phase 1: Description of trends from Survey 1 (1996) to 4 (2006).

Increasing numbers of women are delaying their childbearing years and this trend is well recognised. Delayed childbearing, however, does not necessarily equate to no pregnancies prior to a live birth. Many women have had pregnancies not resulting in a live birth which therefore do not appear in fertility statistics. Recognised pregnancy losses include spontaneous loss: miscarriages, <20 weeks gestation, and stillbirths, 20+ weeks; and induced losses, terminations and ectopic pregnancies. Comprehensive reproductive histories are an important measure of both fecundity (reproductive ability) and fertility (live births).

Pregnancy losses: Many miscarriages occurred around the birth of a child - almost 1-in-5 women aged 18-23 years and 1-in-4 women aged 28-33 years who had a birth also had a miscarriage. Other women had miscarriages but had not given birth. These findings indicated young women were having more total pregnancies than the pregnancies that resulted in the birth of a child. Early childbearers (<28 years) often had miscarriages around the same time period as their first live birth, suggesting pro-active family formation. Delayed childbearers (32-33 years) had more first births than first miscarriages. Recognised pregnancy losses are an important measure of fecundity in the general population because they indicate successful conception and maintenance of pregnancy to varying reproductive end-points.

Mental and general health of infertile women: Among women aged 28-33 years in the general population, those who reported infertility were more likely to have self-reported depression and

medically diagnosed chronic metabolic and reproductive conditions. Among infertile women, 28% had not sought medical advice for their recognised infertility. Infertile women who had sought medical advice were more likely to have reported depression or other underlying mental health issues. Depression and symptoms of other mental health problems may be barriers to seeking medical advice for infertility. For women in their prime reproductive years, infertility and depression appear to be co-morbid conditions. Depression may prevent infertile women from seeking medical advice at a younger age when there is a higher chance of successful fertility treatment.

Phase 2: How does early sexual and reproductive health influence later reproductive health outcomes?

Infertile women from Phase 1 (population-based sample) were compared with infertile women accessing fertility specialists (clinical sample). The ability to respond to assisted reproduction technology (ART) treatments may be determined by individual sexual and reproductive histories. Surveys were distributed across four fertility clinics from July 2008 to October 2009. Data analysis has been completed for women aged <35 years comparing population-based infertile women (ALSWH) to infertile women at fertility clinics. The findings were presented at an ALSWH seminar in October, and a paper will be submitted to *Fertility and Sterility*. Data analysis will then focus on the sexual and reproductive histories of infertile women at fertility clinics and their ovulatory response to ART.

Most recently, the findings from Phase 1 were presented within the University of Queensland, School of Population Health (July & October 2009) and to the Mother and Baby Research Group at the Royal Brisbane and Women's Hospital. One paper has been published in *Women's Health Issues* and one paper has been revised and resubmitted to *Fertility and Sterility*.

Project: A176	Predictors of post natal depression
PhD Candidate:	• Catherine Chojenta (School of Humanities and Social Science, University of Newcastle)
Supervisors:	• Dr Deborah Loxton (School of Humanities and Social Science, University of Newcastle) • Dr Jayne Lucke (School of Population Health, University of Queensland)
Expected completion:	December 2012

Depressive episodes are the most common form of morbidity after childbirth. The reported prevalence of postnatal depression (PND) among Australian mothers is placed somewhere between 10 and 20%. The consequences of PND to the mother include neglect of the child, relationship breakdown, increased risk of suicidal ideation and self harm. Both psychosocial and childbirth experiences have been found to precede the onset of PND, however many of the past studies into PND have not been able to incorporate a wide spectrum of risk factors in one analysis. The ALSWH provides a unique opportunity to examine the patterns of prevalence of PND over an 11 year period and the longitudinal antecedents of PND among young Australian women. An examination of data collected from the first 4 surveys of the 1973-78 cohort conducted by the ALSWH is currently underway. At Survey 4 in 2006, 37% of participants who had completed all four surveys had given birth to a child in the four years preceding the Survey. Ten per cent of these women reported being diagnosed or treated for PND in the last three years. A range of antecedents of PND were investigated such as socioeconomic factors, life events, social support and previous diagnoses of depression and anxiety. Of note, women who were diagnosed or treated for depression at Survey 2 or 3 were three times more likely than other women to report being diagnosed or treated for PND at Survey 4, and women who reported experiencing 5 or more life events at Survey 4 were also more than 3.5 times more likely to experience PND. Findings indicate a complex range of life events, and other mental health diagnoses precede a diagnosis of PND.

A poster from this project was presented at the *Mixed Methods Conference* in Harrogate, Leeds, UK in July 2009.

Project: A179	When life's a pain: The relationship between stress and modifiable psychosocial factors in arthritis
PhD Candidate:	• Melissa Harris (Health Behaviour Sciences, School of Medicine and Public Health, University of Newcastle)
Supervisors:	• Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Newcastle) • Assoc. Professor David Sibbritt (School of Medicine and Public Health, University of Newcastle) • Professor Julie Byles (Centre for Research and Education in Ageing, University of Newcastle)
Expected completion:	December 2011

This project aims to examine the relationships between stress, psychosocial variables and arthritis. The final cross sectional analyses using data from the fifth survey of the 1946-51 cohort have been completed. Univariate analyses (logistic regressions) have shown that a diagnosis of arthritis is characterised by widespread health-related concerns including poor psychosocial functioning and health related quality of life outcomes. A stepwise multivariate model is currently being undertaken. The results of this project will enable us to inform policy and practice regarding psychosocial factors (particularly the role of stress) which contribute to, and influence poor outcomes for women with arthritis.

Project: A211	'In their own words' healthy ageing in late modernity: An analysis of the 'free-text' comments from the older cohort of the Australian Longitudinal Study of Women's Health
Masters candidate:	• Lyn Adamson (Research Centre for Gender, Health and Ageing, University of Newcastle)
Supervisors:	• Assoc. Professor John Germov (Research Centre for Gender, Health and Ageing, University of Newcastle) • Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Newcastle) • Professor Julie Byles (Research Centre for Gender, Health and Ageing, University of Newcastle)
Funding Source:	Research Centre for Gender, Health and Ageing
Expected completion:	2011

This project intends to analyse the longitudinal qualitative data from the 1921-26 cohort of the ALSWH to provide insights into the social experiences of ageing among women who have experienced and survived tremendous social and cultural change across the life course.

An initial qualitative analysis of the responses of the 764 participants of the 1921-26 cohort who completed the section 'is there anything else you would like to tell us about your health' on the fourth survey has been completed. The results of this analysis have further informed the research, and a complete dataset of the comments of 440 of the participants who responded to the question at all five time points of the survey has now been compiled. These comments have been coded and analysis of these data is being undertaken. Initial results suggest that many of the women have chosen to write on the subject of their changing relationships with families and friends across the thirteen year time-span. These findings will be the focus of this research.

Project: A051	Declining fertility rates and the normalisation of technological control of reproduction among young Australian women
PhD Candidate:	• Rosie Mooney (School of Humanities and Social Science, University of Newcastle)
Supervisors:	• Dr Penny Warner-Smith (School of Humanities and Social Science, University of Newcastle) • Dr Ann Taylor (School of Humanities and Social Science, University of Newcastle)
Funding Source:	University of Newcastle Research Scholarship (External) & University of Newcastle Project Grant
Expected completion:	June 2010

This project explores the planned and expected timing of childbearing for young urban Australian women, through an investigation of the relationship between their perceptions and experiences of fertility, technology and motherhood. The research topic stems from government and societal concerns surrounding Australia's ageing population, and changes in fertility patterns, including delayed childbearing, increased childlessness and smaller family size.

The research has three components and combines quantitative and qualitative data, with priority given to the qualitative approach.

Component One involved the analyses of the existing qualitative data collected from the urban dwelling ALSWH 1973-78 cohort at Survey 1 (1996), Survey 2 (2000), and Survey 3 (2003) in response to the question: *'Have we missed anything?'* Initial analyses identified those comments in which the participants had chosen to discuss their reproductive plans and experiences. These 'reproductive' comments then underwent further descriptive and thematic exploration, and existing demographic data were utilised to examine the representativeness of the final sample.

For *Component Two* young women, aged 18 to 30 years, were recruited from a community sample to participate in focus group discussions and to complete a written survey about their reproductive decision-making. Twenty-four women participated in six focus groups and one interview in several urban areas around NSW. The discussions were audio taped, transcribed and analysed.

Components one (written comments) and two (focus groups) were carried out concurrently with preliminary findings from each informing their ongoing conduct as the research progressed.

Component Three of the research was informed by preliminary findings from components one and two which emphasised the complexity women experience in finding the perceived 'right time' to have children and the consequent delaying of childbearing. Fifty participants from the 1973-78 ALSWH cohort, then aged 27-32 years, participated in a substudy about their reproductive decision-making. This involved the completion of a written survey and a semi-structured telephone interview. Eligibility criteria included being an urban resident, living in a marriage or a de facto relationship, having no children, and not being currently pregnant. The interview data have been transcribed and the survey data entered and verified.

The ALSWH written comment data, focus group transcripts and interview transcripts have and are being descriptively and thematically coded and analysed with the assistance of the qualitative software package N6 (NUD*DT version 6).

Recent analyses of data from component three (telephone interviews) explored the strength of conviction with which the interviewees discussed their childbearing aspirations, bringing together both quantitative and qualitative responses to this question. Analyses found that although the participants statistical tick box 'yes' or 'no' answers pointed overwhelmingly to aspirations *for* children, their interview narratives revealed a sliding scale of certainty. Many women expressed both *desires*

for and *doubts* about having children, with their conviction usually shaped by a balance between maternal feeling, competing priorities, planned timing and perceptions of choice. The findings support the argument that women's reproductive decisions are predominantly the result of the circumstances in which they are made, as opposed to representing free choice.

The project findings, combining all three research components, are currently being written up as a doctoral thesis. The thesis discusses whether and why women are 'choosing' or not 'choosing' motherhood; if they do want children, when they would like to have them; and finally, how do they hope to realize these childbearing plans.

Project: A234	The impact of out-of-pocket costs on the use and distribution of cervical screening services
PhD candidate:	• Kees van Gool (University of Technology Sydney)
Supervisors:	• Dr Deborah Loxton (ALSWH, University of Newcastle) • Assoc. Professor Elizabeth Savage • Assoc. Professor Rosaline Viney
Expected completion:	April 2010

In 1991, Australia implemented a cervical screening program to encourage women from ages of about 18 to 70 to have a biennial Pap smear. General practitioners and pathology providers play a vital role in the delivery of the program.

This research aims to examine the impact of out-of-pocket (OOP) costs on the use of screening services and the distribution of use amongst various income groups. The hypotheses to be tested are that higher OOP costs lead to a fall in cervical screening participation, and that participation will decrease more amongst low income women than amongst women in higher income groups. Longitudinal data from the ALSWH will be especially powerful for this analysis because they enable the analysis to focus on changes over time in terms of both cervical screening behaviour and OOP costs.

Preparation for both the survey and administrative data has now been completed and analysis is well underway. Several visits to the University of Newcastle have been made to conduct analysis of the administrative data, and a paper was presented at the *International Health Economics Association World Congress* in Beijing in July 2009.

Project: A253	Social support in older women
Masters student:	• Nazim Khan (University of Queensland)
Supervisors:	• Professor Annette Dobson (School of Population Health, University of Queensland)
Expected completion:	2010

The project began with the selection of those variables from Surveys 2 and 4 of the 1921-26 cohort that were hypothesized to measure or affect social support in older women. Exploratory analysis has been completed, and the suggestions and recommendations made in the first draft are being incorporated into the second draft, which should be ready for final submission by early December.

1.2.4 Student projects completed

Project: W042	Childlessness and the role of choice in childless women's reproductive outcome
PhD Candidate:	• Heather McKay (Key Centre for Women's Health in Society, School of Population Health, University of Melbourne)
Supervisors:	• Assoc. Professor Jane Fisher (Key Centre for Women's Health in Society, School of Population Health, University of Melbourne). • Professor Christina Lee (School of Psychology, University of Queensland)
Funding source:	Melbourne Research Scholarship (Faculty-Based MRS). The Victorian component of data collection for this study is supported by a grant from the Helen Macpherson Smith Trust.

Since the 1960's significant economic, political, social and cultural changes have occurred in Australia that have affected the nature of families and family values. At the same time there has been a decline in our fertility rate and an increase in lifetime childless rates. It is now predicted that between 20 and 25% of Australian women will not give birth to a child and that increasingly women are choosing this reproductive outcome.

This study aims to investigate why women remain biologically childless, the role of choice in this reproductive outcome, and its impact on women's lives. In doing so it also seeks to develop and enhance knowledge of voluntary childlessness.

ALSWH participants from the 1946-51 cohort were chosen for this study because although their childless status is unchangeable, they are young enough to have lived their childbearing years after the baby boom (1961) and since effective contraception became widely available.

Data for the project were obtained in two ways: firstly via secondary analysis of existing relevant information collected as part of the main ALSWH project, and secondly via a sub-study survey sent to a subset of the ALSWH 1946-51 cohort participants who indicated in Survey 1 that they had never given birth to a child. The latter method was the main focus of this study.

Secondary Analysis Phase: Motherhood status for the ALSWH 1946-51 cohort participants was determined - of the 14 099 women in this cohort, 339 had inconsistent or missing data, and 119 were biologically childless, but performed a social mothering role (as a step or adoptive mother). This left an eligible sample of 13,641 and, when the standard study area weightings were applied, 91% of them were biological mothers and 9% childless. At mid-age, childless women were found to have higher levels of education and were more extensively engaged in the paid workforce than mothers. There were no differences in the health status between mothers and childless women; however, life satisfaction differences between the two groups were complex.

Sub-Survey Phase: Five hundred and thirty five sub-study surveys were sent with a response rate of 80%. Women responded well to being questioned about their choice in remaining childless, the priority they gave to having a child, and the reasons for their biological childlessness. Their answers allowed three categories of childless women to be formed according to the degree of choice women felt they had in this reproductive outcome. Although women's reasons for remaining biologically childless were quite different, they generally recognised that there were numerous positive outcomes for themselves and others associated with their non-motherhood. However, women with less choice in the reproductive outcome were more likely to see negatives associated with their resultant lives.

Women who believed they had some choice in their childlessness also reflected on their decision. Some indicated other people were involved in their choice and this other party was usually their male partner; however, women's comments revealed there was a spectrum of involvement by these men in the decision to remain childless.

Project: A044	Psychological adjustment after breast cancer diagnosis and treatment
PhD Candidate:	• Lisa Beatty (School of Psychology, Flinders University)
Supervisors:	• Assoc. Professor Tracey Wade (School of Psychology, Flinders University) • Professor Christina Lee (School of Psychology, University of Queensland)
Funding source:	Australian Postgraduate Award, and the FMC Foundation Lyn Wrigley Award

The overall aim of this project was to identify factors (using data from the ALSWH 1946-51 cohort) that impact women's adjustment to breast cancer (BC) diagnosis or treatment in order to develop an intervention workbook that addresses these issues.

The project had two objectives:

- To explore group differences in quality of life, as measured by the eight SF-36 domains, between women who developed breast cancer at each survey and those who did not.
- To determine if perceived stress mediates the relationship between initial life events and change in quality of life over time, using a subsample of women who did not have breast cancer at Survey 1, but who subsequently developed breast cancer at either Survey 2 or 3.

Four non-overlapping groups of women were derived, with a final sample size of 10 543 women.

The four groups of women were statistically compared over time for the eight quality of life outcomes using a multivariate analysis of variance (MANOVA). Significant interactions were found for bodily pain, general health, role physical, physical functioning and social functioning, suggesting that changes in functioning over time differ between groups. Further examination suggested that each BC group experienced significantly worse quality of life (QoL) functioning at the respective time points they had been diagnosed with BC compared with women who had never been diagnosed. The only exception to this was physical functioning, for which no differences were found.

In order to prospectively test the hypothesis that perceived stress mediates the relationship between initial life events and change in QoL over time, the two groups of women who did not have breast cancer in Survey 1 but had developed breast cancer subsequently by Surveys 2 and 3 (BC-T2 and BC-T3) were combined for prospective analyses (n=140). Longitudinal modelling was then used to test the relationship between life events, stress and change over time in the eight SF-36 QoL domains. Initial life events and perceived stress predicted change in four QoL domains. There was prospective evidence for the predicted mediational relationship for the domains of role emotional and social functioning. Pre-BC life events and particularly stress have therefore been identified as important predictive factors for poorer outcomes in certain areas of functioning following diagnosis of BC. Future research can build upon current findings by implementing and systematically evaluating a stress-management intervention for women at risk of poorer outcomes.

Project: A126	Coping with miscarriage: Young women's experiences
PhD Candidate:	• Ingrid Rowlands (School of Psychology, University of Queensland)
Supervisors:	• Professor Christina Lee (School of Psychology, University of Queensland) • Assoc. Professor Nancy Pachana (School of Psychology, University of Queensland)
Funding source:	University of Queensland Joint Research Scholarship

This project combines quantitative and qualitative methods to examine both women's psychological well-being after miscarriage and the specific coping strategies that are associated with coping well with this event. Longitudinal analyses using Surveys 1, 2 and 3 of the 1973-78 cohort of the Australian Longitudinal Study on Women's Health showed that miscarriage negatively affected women's mental health and well-being. Women who reported miscarriage had greater stress, less optimism and poorer general mental health than women who had never miscarried. Because miscarriage had significant effects on women's mental health and well-being, the next part of the thesis was dedicated to examining the predictors of, and coping strategies related to, coping well after miscarriage. Using the ALSWH data, we examined the predictors of Mental Health among 998 young women reporting miscarriage. Higher education and satisfaction with the general practitioner were associated with better Mental Health. Stress and negative life events were associated with poor Mental Health, as was a history of medically diagnosed depression or anxiety.

In order to gain a more in-depth understanding of how women cope with miscarriage, nine Australian women who had experienced miscarriages in the previous two years were interviewed. While women's stories differed at a personal level, common themes were identified. Women described a complex and difficult range of emotions, including shock and disbelief; they talked about the process of searching for a cause for the miscarriage or an underlying meaning for the miscarriage; and they talked about the significant emotional, physical and social impact that the miscarriage had on their lives. Women were particularly anxious about falling pregnant again for fear of future miscarriage, but had hopes for future babies. Overall, the loss the women experienced was significant, with grief still present among some women at the time of the interview. Miscarriage was a significant part of a woman's life story, long after the medical issues had been resolved.

As part of this study, we also explored what might help or hinder women's mental health and well-being after miscarriage. The interviews showed that engagement, acknowledgment and support from families, health care providers and the community facilitated better mental health outcomes for women after miscarriage. Unfortunately, the medical management of miscarriage was often described as poor, and a lack of information received, in combination with insensitive comments and lack of empathy while being treated in hospital, contributed to poor mental health and well-being for miscarrying women. Support and acknowledgement from family, community and health care providers was important for women.

Taking all the results into consideration, it appears that changes to social norms and attitudes regarding miscarriage may help women to cope with this challenging and distressing experience. Interventions to help women cope with miscarriage need to be grounded in an understanding of women's need for social and family support, and understanding from health professionals. However, it is essential that interventions should be comprehensively evaluated, and future research in this area is warranted.

In 2009, a paper from this project was published in the *Journal of Reproductive and Infant Psychology*

Project: A213	Cardiovascular drugs utilisation in diabetic women
Masters Student:	• Nur Hikmayani (School of Medicine & Public Health, University of Newcastle)
Supervisor:	• Professor Julie Byles (ALSWH, Research Centre for Gender, Health and Ageing, University of Newcastle)

Diabetes patients are at high risk for cardiovascular disease. Evidence and guidelines recommending the use of multiple cardiovascular medications to support the management of diabetes have been well-established. It is nevertheless of growing concern that the benefits conferred by combination of the drugs are potentially offset by perceived deterioration on health-related quality of life (HRQoL) attributable to pill burden.

This thesis sought to determine the extent of use of cardiovascular medications in elderly Australian women with diabetes–either individually or in combination–for primary and secondary prevention of cardiovascular disease. This study further examined whether usage patterns of cardiovascular medications have effects on their health-related quality of life.

A subset of the 1921-26 cohort who completed Survey 4 and who self-reported to have been diagnosed with diabetes and/or use medications indicative of diabetes were selected as study subjects. Self-report was used to identify use of cardiovascular medications and also prevention stage of cardiovascular disease. Patterns of cardiovascular drug use were classified as no use, using any antihypertensives, lipid lowering agents or antiplatelet drugs, using any two combinations, and using all the three classes of medications. Quality of life was measured with the use of the SF-36, focusing on the physical functioning, general health, vitality and mental health subscales. The extent of medication use was summarised as prevalence. Linear regression analyses of survey data evaluated the associations between usage patterns of cardiovascular medication and individual subscales of the SF-36 while controlling for other sociodemographic, health behaviour and health service utilisation characteristics.

Of the 7,158 women retained at Survey 4, 885 were identified as having diabetes, and of these, 390 (46.8%) had macrovascular disease. Twenty-three percent of the diabetic women used any one category of antihypertensives, lipid lowering drugs or antiplatelets, 37.5% reported use of a combination of any two and 29.1% were on all three categories of medicines. Using at least one cardiovacular drug was shown to be associated with higher HRQoL scores. After adjustment for other covariates, being on triple combination of cardiovascular drugs was significantly associated with increased scores on physical functioning, general health and mental health subscales. Being on any dual combination was significantly associated with increased scores on physical functioning and general health, whereas using a single cardiovascular drug is only significantly associated with increased score on physical functioning. A negative association was found between using three cardiovascular drugs and vitality score albeit modest and statistically nonsignificant.

The use of cardiovascular medications in elderly Australian women with diabetes was reasonably high particularly for the secondary prevention of cardiovascular disease. Use of multiple cardiovascular drugs was demonstrated to be subjectively beneficial in terms of perceived physical functioning, general health and mental health. There remains a possibility that being on more intensive regimens with more cardiovascular drugs will diminish patients' HRQoL since the remaining subscales of the SF-36 were not evaluated. If HRQoL in diabetics is to be more comprehensively assessed, there may be value in employing a diabetes-specific instrument as an add-on to the generic HRQoL instrument.

Project: A218	Marriage and de facto relationships: Is there a difference?
PhD Candidate:	• Nicole Arthur (School of Psychology, University of Queensland)
Supervisors:	• Professor Christina Lee (School of Psychology, University of Queensland)
Funding source:	APA Scholarship

Social ties are integral to health and well-being, with marital relationship status being one of the most important predictors of health and well-being. Although contemporary research usually treats cohabiting relationships as equivalent to marriage, research suggests that significant differences in health and well-being may exist between married and cohabiting individuals. Because the majority of this research is cross-sectional, however, it is not clear whether pre-existing differences lead individuals to select marriage or cohabitation, or whether the differences arise from the nature of the relationships. Additionally, evidence suggests that differences exist between men and women in the health and well-being correlates of various relationship states.

These findings are important at both methodological and clinical levels. If these two groups are meaningfully distinct then it is important that they are treated separately in research. Secondly, if cohabiting relationships are different from marriages, or if different individuals move into them, this has relevance for both couple and individual therapy and potentially in the prevention of relationship breakdown.

The Australian Longitudinal Study on Women's Health (ALSWH) provides an opportunity to examine marriage and cohabitation longitudinally within a national sample of women. Women who were single at Survey 2 (N = 3868, aged 22-27) were divided into three groups – those who would still be single at Survey 3, three years later, those who would be married, and those who would be in cohabiting relationships. Firstly, the study explores pre-existing differences at Survey 2, when all women were single, in sociodemographic, physical health, health behaviours and psychological variables. Secondly, it explores whether differences exist on these same variables at Survey 3, after the transition, and thirdly it explores whether post-transition differences can be explained by pre-existing differences between the groups of women.

Using a selection of variables assessing sociodemographic status, health behaviours, physical health, and mental health, results suggest that there are both pre-existing differences between these three groups of women and differences that are apparent after the transition. Statistical adjustment for pre-existing differences attenuates, but does not completely remove, the post-transition differences. These findings suggest that both selection and social integration processes may be influential in determining women's relationship status and health and well-being.

These results have implications at both a methodological and clinical level. The findings would suggest that women who go on to cohabit are a meaningfully distinct group of individuals from those who marry, and thus need to be treated as a separate population in future research. Secondly, in terms of clinical practice, increased recognition of and understanding that pre-existing differences between women with different relationship status as well as differences in social interaction processes within the relationship environments may impact on the efficacy of individual and couple relationship therapy should be an important consideration in the delivery and structuring of an efficacious treatment program.

Project: A144	The impact of trauma on young women's health behaviours
Professional Doctorate Candidate:	• Toni Lindsay (School of Behavioural Sciences, University of Newcastle)
Supervisors:	• Dr Jenny Bowman (School of Behavioural Sciences, University of Newcastle) • Dr Deborah Loxton (Research Centre for Gender, Health and Ageing, University of Newcastle)

This project examining the role of trauma on the health behaviours of young women has been completed. Using the Generalised Estimating Equations model, the study showed that there was a relationship between exposure to major traumatic events and the utilisation of negative health behaviours of dependent smoking, risky drinking, illicit drug use, unhealthy eating behaviours, self harming and suicidal ideation. In addition to this, there was also found to be a relationship between increasing life events and participation in the above behaviours. The thesis arising from these findings was approved in August 2009. The findings of this study are currently being developed for publication.

Project: A265	The lived experience of drought: The story from the qualitative data of the Australian Longitudinal Study on Women's Health
Honours Student:	• Jane Rich (University of Newcastle)
Supervisors:	• Dr Deborah Loxton (ALSWH, University of Newcastle) • Dr Sarah Wright (School of Environmental and Life Sciences, University of Newcastle)
Other Collaborators	• Lyn Adamson (Research Centre for Gender Health and Ageing, University of Newcastle)

This analysis explored experiences of living in drought for women in Australia. The investigation sought to draw out the relationships between the mental health and well-being of women as they age in drought. 217 free text comments from the ALSWH 1946-51 cohort were subject to a narrative analysis. The project is now complete, and the thesis has been submitted to the University of Newcastle's Faculty of Science and IT for the award of Bachelor of Development Studies (Hons).

Project: A224	Miscarriage or termination of pregnancy in young and middle-aged Australian women: Are they infertile?
PhD Candidate:	• Danielle Herbert (School of Population Health, University of Queensland)
Supervisors:	• Professor Annette Dobson (School of Population Health, University of Queensland) • Dr Jayne Lucke (School of Population Health, University of Queensland)

The main focus of this project was to identify the factors associated with seeking medical advice for infertility and using fertility hormones and/or *in vitro* fertilisation (IVF).

Phase 1: A historical perspective on infertility in Australia circa 1980

For women born in 1946-51, 92% had ever been pregnant and 8% had never been pregnant. For women who had ever been pregnant: 56% had given birth and never had a pregnancy loss; 40% had given birth and had at least one pregnancy loss; 4% had pregnancy losses but had never given birth to a child. Among women born in 1946-51, 1-in-10 reported infertility and four of these women used treatment. Women who had a history of pregnancy losses only (never given birth) or had never been pregnant were the most likely to report a lifetime experience of infertility and to have used treatment.

Women with infertility who reported the birth of their first child from 1980 onwards were more likely to have used treatment. As women born in 1946-51 aged into the 1980s, an awareness of infertility issues and the availability of IVF became more widespread.

Phase 2: Seeking medical advice and using hormonal/IVF treatment for infertility

Seventy-two percent of women with infertility sought medical advice, but after receiving the advice, only 50% used hormonal/IVF treatment. Women with infertility who were obese or daily smokers were less likely to seek medical advice compared with infertile women of healthy weights or non-smokers. In comparison with women who had never been pregnant, women with a history of miscarriages only were more likely to seek medical advice than women who had births only. Infertile women who had sought medical advice were most likely to also report a diagnosis of polycystic ovary syndrome (PCOS) or endometriosis, compared with women without either condition. Infertile women who used hormonal/IVF treatment were most likely to report a diagnosis of PCOS. The majority of women with fertility problems do seek advice but two-thirds of these women will not use treatment.

This study has been completed. Most recently, the findings from this study were presented within the University of Queensland, School of Population Health (April & July 2009) and to the Mother and Baby Research Group at the Royal Brisbane and Women's Hospital. In 2009, one paper was published in, and another is in press for, the *Australian and New Zealand Journal of Public Health.*

Project: A247	A longitudinal investigation of the relationship between tobacco smoking and poor mental health in a cohort of young Australian women
Honours Student:	• Janni Leung (School of Population Health, University of Queensland)
Supervisors:	• Professor Wayne Hall (School of Population Health, University of Queensland) • Dr Coral Gartner (School of Population Health, University of Queensland) • Professor Annette Dobson (School of Population Health, University of Queensland)

Firstly, we investigated the prevalence of tobacco smoking in young women with poor mental health (according to cut-off points of the MCS, MHI, and CES-D mental health scales) cross-sectionally using waves 1, 2, 3 and 4 of the 1973-78 cohort. This revealed that the prevalence of smoking was higher amongst women with poor mental health (compared with those with good mental health), where the relationship was similar across the four waves. Secondly, we used longitudinal analysis methods to examine the direction of the relationship between tobacco smoking and poor mental health. As expected, a bi-directional relationship was found, such that a history of smoking can predict poorer mental health, and a history of poor mental health can predict tobacco smoking. The thesis was due on 30 October 2009. This project is now complete.

1.2.5 Student theses completed

Project: A170	The aspirations and life goals of young women during the period of emerging adulthood
PhD Candidate:	• Melissa Johnstone (School of Psychology, University of Queensland)
Supervisors:	• Professor Christina Lee (School of Psychology, University of Queensland) • Assoc. Professor Nancy Pachana (School of Psychology, University of Queensland)
Funding source:	APA Scholarship

Objectives

- To examine young Australian women's aspirations for work and family, with reference to recent contemporary theories on women's work and family choices, and recent theories on early adult life.
- To identify and understand young Australian women's aspirations/goals/life plans and uncertainties, regarding employment, family, relationships, residence, living and finance, during their transition into adulthood.
- To understand how young women successfully navigate and subjectively experience the passage into early adult life, and start to think about work and family roles.
- To contribute to the evidence base on work-family balance for generations of Australian women, by understanding their aspirations in these areas.

Phase 1

Quantitative analyses of the data collected from Surveys 1, 2 and 3 of the 1973-78 cohort of the ALSWH were conducted, both cross-sectionally and longitudinally, focusing on responses to the questions regarding young women's aspirations for employment, motherhood and relationship status at age 35. Two papers have been published in 2009 from this analysis. The first paper on the cross-sectional and longitudinal trends on women's aspirations was published in *Family Matters,* which is the principal means by which the Australian and international community is informed about Australian, family-related research. A second paper tests and refutes a highly contentious contemporary theory (*Lifestyle Preference Theory)* on the work and family choices made by Australian women, by examining the individual and sociodemographic factors that shape women's work and family aspirations and plans. This paper was published by the international interdisciplinary behavioural science journal, *Sex Roles.*

A third, submitted paper continues to discuss the limitations of Lifestyle Preference Theory as a model for explaining young women's aspirations and life plans for work and family; as it was found that young women could not be easily categorised into Lifestyle Preference Groups, they were not consistently aspiring to a particular 'type' of lifestyle and they were not aligning their behaviour at Survey 3 with their earlier aspirations. The findings contribute to the evidence base informing work and family policy recommendations and challenge influential social theories about the extent to which women's life choices are freely and individually chosen, as opposed to embedded in complex sociocultural contexts.

Phase 2

The second phase of the project involved analysing the written comments obtained from Surveys 1, 2 and 3 of the 1973-78 cohort of the ALSWH. This analysis focussed on young women's comments related to the topic of aspirations and the transition into adulthood; particularly comments regarding employment, family, relationships, living, finance and lifestyle.

The comments from all three surveys were read and the comments relevant to aspirations and the transition to adulthood were identified. A thematic analysis of the identified comments was conducted using a grounded-theory approach. The qualitative analysis provided contextual understanding to the younger cohort of women's aspirations for work and family, and their transition into early adulthood and the commencement of the roles of mother and paid worker. Initially, the women demonstrated similarities to certain characteristics of the new developmental period of the lifespan, known as Emerging Adulthood. These similarities included characteristics of instability and change as the women developed and revised their plans for work and family in response to their experiences and circumstances. Across the surveys, women from the 1973-78 cohort started to seriously contemplate the challenges ahead and were actively planning lives that they hoped would enable them to combine family and meaningful paid work. Two manuscripts are in preparation, for submission to international peer-reviewed journals.

Project: A235	A shift in thinking: Comparing baby boomer narrative over time
Doctoral Candidate:	• Meredith Tavener (School of Medicine & Public Health, University of Newcastle)
Supervisors:	• Professor Julie Byles (Centre for Research and Education in Ageing, University of Newcastle) • Dr Deborah Loxton (Centre for Research and Education in Ageing, University of Newcastle) • Dr Penny Warner Smith

Five key criteria which defined the popular baby boomer stereotype were identified:

i. being married or in a defacto relationship
ii. living with that person
iii. managing easily on income
iv. living in a house/ apartment/ or villa that they own
v. having self-reported health which is excellent or very good

These criteria were tested initially against a sample of 765 women who completed an ALSWH sub-survey on retirement in 2006. The women's responses against the five key popular stereotype criteria identified four distinct categories of baby boomer women:

- **Healthy haves** – women who met all five criteria
- **Unhealthy haves** – women who met all the criteria except for good health
- **Healthy have-nots** – women who had good health but did not meet one of the remaining four criteria
- **Unhealthy have-nots** – women who dropped two or more of the five criteria

Survey data indicated that differences existed between women who fitted the popular stereotype and those women who did not. Further exploration of women's identities was conducted, using women's narrative from surveys 1 to 4 (1996 to 2004). Making use of Wenger's framework of identification and negotiation, the 'healthy have' women were contrasted against the 'unhealthy have not' women. The framework proposes three levels of identity construction, based upon 'engagement' with others, 'imagination' of one's own social and personal space, and 'alignment' with group energy. The resulting coding system provided a sense of how the women created meaning from their life experiences and developed their own sense of self. Differences were evident between the two groups of women. Firstly, the 'healthy have' women reported a strongly positive identity: expressing greater levels of positive engagement with others and greater levels of positive participation. Their narrative also

indicated a greater ability to negotiate meaning from their experiences, either positive or negative. In contrast, the ‘unhealthy have not’ women reported a more negative identity. Their narrative did not provide evidence of positive negotiation of their experiences. They experienced greater levels of stress and adversity, and greater levels of negative participation with others.

The thesis was submitted in September 2009. Presentations of this material were made at the 15th Qualitative Health Research Conference in Vancouver in October and the 42nd Australian Association of Gerontology National Conference in Canberra in November.

2. CONDUCT OF SURVEYS

2.1 1921-26 cohort Survey 5 – Final response rate

Survey 5 of the 1921-26 cohort was carried out in 2008, when the women were aged between 82 and 87. The planning, development and piloting were described in Reports 28 and 29, while the mailout and collection of the surveys was described in Reports 30 and 31 (see Table 2-1). Table 2-2 details the final response rates to Survey 5 of the 1921-26 cohort.

Table 2-1 Reporting of the 1921-26 cohort Survey 5

	Report 28 Jun-07	Report 29 Dec-07	Report 30 Jun-08	Report 31 Dec-08	This Report Dec-09
Planning and development	O5				
Pilot		O5			
Mailout and data collection			O5		
Data collection				O5	
Final response rate					O5

Table 2-2 Response rates for the 1921-26 cohort Survey 5 (at 13th October 2009)

	N	%
Completed surveys	5560	77.4
Deceased	188	2.6
Withdrawn	382	5.3
Not this time	643	8.9
No response	414	5.8
Total mailed	**7187**	**100**

2.2 1973-78 cohort Survey 5 – Data collection

Following the process of planning, development and piloting described in Reports 30 and 31, the 1973-78 cohort Survey 5 was finalised in December 2008. Questions identified as no longer useful or of interest, or with very low response rates were deleted, and questions on topics of current interest for government policy, or mentioned in participant comments were added. Table 2-7 tabulates changes from Survey 4 to Survey 5 and from Pilot Survey 5 to Survey 5, Table 2-8 lists deletions from Survey 4 to Survey 5, and Table 2-9 lists deletions from Pilot Survey 5 to Survey 5. University of Newcastle and University of Queensland Human Research Ethics Committees approval was obtained and surveys were mailed out according to the timetable in Table 2-3. Copies of the survey, thank you leaflet and targeted reminder leaflet appear in Appendix 10.2.

Table 2-4 gives the response rates for the 1973-78 cohort Survey 5 at 13th October 2009. The response rate of 54% of the number mailed is low compared with the figure of 66% for 1973-78 cohort Survey 4 reported at a similar date in Report 27. The telephone reminder to non-respondents is in progress, and staff report that when contacted, participants say they have moved and did not receive the survey, or are willing to participate but are finding it difficult to find time to complete the survey. Permission has been obtained from University of Newcastle Human Research Ethics Committee to send a reminder message to participants' mobile phones and to conduct a telephone reminder should these be necessary.

Tracking is being conducted on those participants whose survey or reminder leaflet has been 'returned to sender' or who are not contactable in the telephone reminder. Extra surveys will continue to be mailed as participants are found. Completed questionnaires will continue to be received and the data incorporated into the dataset until the cut off date of 31st August 2010.

Table 2-3 Timetable for the 1973-78 cohort Survey 5 (at 13th October 2009)

Date	Mailout	Items	Number
31 Mar 2009	Mailout 1	Package mailed including survey, reply-paid envelope, letter of invitation and change of details card	12,183 mailed
4 May 2009	Mailout 2	First reminder leaflet mailed to all non-respondents	8873 mailed
2 Jun 2009	Mailout 3	Second reminder leaflet mailed to all non-respondents	6400 mailed
Jun - Oct 2009	Extra mailouts	Packages mailed (as for Mailout 1)	2015 mailed*
Nov - Dec 2009	Extra mailouts	Packages to be mailed (as for Mailout 1)	As required
Jul – Oct 2009	Phone reminder	Reminder phone calls to all non-respondents in progress	8142 attempted calls to 2516 participants

*197 of these were first packages sent to participants who had not been mailed a package in the initial mailout. This gave a total of 12 380 participants who were mailed at least one survey package.

Table 2-4 Response rates for the 1973-78 cohort Survey 5 (at 13th October 2009)

	N	%
Completed surveys	6713	54.2
Deceased	0	0
Withdrawn	52	0.4
Not this time	187	1.5
Not completed	5428	43.8
Total mailed	**12,380**	**100**

2.3 1946-1951 cohort Survey 6 – Pilot

Preparation for the 1946-51 cohort Survey 6, which is scheduled to be mailed in March 2010, began in January 2009. These women will be aged between 59 and 64 when they receive this survey.

As there have generally been few life stage changes in the 1946-51 cohort since the last survey additional questions have not been added. Table 2-10 lists the items in the 1946-51 cohort Pilot Survey 6 and their corresponding item in Survey 5, while Table 2-11 shows the deletions from Survey 5 to Pilot Survey 6 and the reasons for the deletion.

Approval for the pilot testing of the sixth survey of the pilot cohort born between 1946 and 1951 was obtained from the University of Newcastle and University of Queensland Human Research Ethics Committees. The pilot survey was mailed to 347 women in the pilot cohort group. Copies of the survey, the information brochure, the evaluation questionnaire for obtaining feedback, the reminder leaflet and the thank you leaflet appear in Appendix 2. Table 2-5 outlines the timeline for this survey, and Table 2-6 summarises the response rate at 13th October 2009.

Table 2-5 Timetable for the 1946-51 cohort Pilot Survey 6 (at 13th October 2009)

Date	Mailout	Items	Number
11 August 2009	Mailout 1	Package mailed including survey, reply-paid envelope, letter of invitation and change of details card	347 mailed
9 Sep 2009	Mailout 2	First reminder leaflet mailed to all non-respondents	157 mailed
21 Oct 2009	Mailout 3	Second reminder leaflet to be mailed to all respondents	As required
Oct - Nov 2009	Extra mailouts	Packages to be mailed (as for Mailout 1)	As required
Oct – Nov 2009	Phone reminder	Reminder phone calls to all non-respondents	As required

Table 2-6 Response rates from the 1946-1951 cohort Pilot Survey 6 (at 13th October 2009)

	N	%
Completed surveys	262	75.5
Deceased	1	0.3
Withdrawn	1	0.3
Not this time	1	0.3
No response	82	23.6
Total mailed	347	100

Table 2-7 1973-78 cohort Survey 5 changes table

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
1	Consultations	WHA				
2	Consultations (allied health)	Modified from ABS (1991) 1989-1990 National Health Survey Users' Guide. Canberra: ABS. Cat No. 4363.0				
3	Alternate therapies	WHA				
4	Hospital admissions	WHA				
5	GP visits	WHA				
6	GP satisfaction	Modified from Davies, A.R., & Ware, J.E.J. (1991). GHAA's consumer satisfaction survey and user's manual (2nd Edn). Washington DC: The Group Health Association of America (GHAA).				
7	Female GP	WHA				
8	Health care satisfaction	Modified from Davies, A.R., & Ware, J.E.J. (1991). GHAA's consumer satisfaction survey and user's manual (2nd Edn). Washington DC: The Group Health Association of America (GHAA).			'Access to maternal and child health services' was added.	
9	Health care card	WHA				
10-11	Private health insurance	WHA - AUHS				
12	Diagnosis	Modified from ABS (1991) 1989-1990 National health	'Postnatal depression', 'Gestational diabetes' and 'Hypertension during pregnancy' moved to q42.			'Please specify' was changed back to Y4 format as was 'Other

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
		survey users' guide. Canberra: ABS. Cat No. 4363.0	'A Sexually Transmitted Infection (e.g. Chlamydia, genital herpes, etc)' was deleted 'None of these conditions' was made bold. 'Chlamydia', 'Genital herpes', 'Genital warts (HPV)', 'HIV or AIDS', 'Hepatitis B or C' were added. These were the STI questions from y2. Cancer was replaced with two new items - 'skin cancer' and 'other cancer'. A response of 'other please write on line' was added. 'Other than during pregnancy' was removed from option d. 'Not postnatal' was removed from option h. In the question stem a prompt regarding pregnancy related question was added: 'Please record conditions related to pregnancy (gestational diabetes, hypertension during pregnancy, antenatal depression and postnatal depression) in the section relating to pregnancy later in the survey'.			major physical illness' and 'Other major mental illness'. A response of 'other please write on line' was changed back to Y4 format.
13	Symptoms	WHA	'Indigestion (heart burn)' and 'Breathing difficulties' were added			
14	Date of Birth					
15	Residential and postal postcode					Inserted an option 'Mark here if living overseas'
16	Sun protection	National skin cancer campaign evaluation survey (conducted over summer 06-07 & 07-08).			This item was added as skin cancer is one of the most prevalent cancers amongst women. Determining the preventative strategies women take in their 30's could help predict future cancer trends.	
17	Pap Test	Modified from Australian	Changed to 'When did you last have			

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
		Bureau of Statistics (1991) 1989-1990 National health survey users' guide. Canberra: ABS. Cat No. 4363.0	- A pap test? - Your blood pressure checked? Your skin checked? (e.g. spots, lesions, moles)' With response options: 'Less than 2 years', '2 to less than 3 years ago', '3-5 years ago', 'More than 5 years ago', 'Never', 'Not sure'.			
18	HPV Vaccine	WHA			This item was added as a HPV Vaccine has recently become available to women of this age group.	
19	Medication List	WHA			This item was added in a format similar to m5q43 to obtain information on the medications and 'over the counter' vitamins and therapies that these women are taking.	
20-30	SF-36	Ware, J.E., & Sherbourne, C.D. (1992) The MOS 36-Item Short-Form Health Survey (SF-36):1. Conceptual framework and item selection, Medical Care, 30(6): 473-483				
31	Fertility	WHA				
32	Procedures	Modified from WHA (survey 1), then revised according to national estimates for females aged 72-76 in Quality in Australian Health Care Study database (1995)			As this cohort ages it is important to introduce procedure questions.	New procedures item added as pilot participants had experienced gall stones. Procedures are an important issue for the participants as they age.
33	Pregnancy problems	WHA	'I have found out' was removed as the prefix to 'I cannot have children' and 'My partner cannot have children'. 'My partner has a low or zero sperm count' was added.			Switch order of questions with Contraception question to enable women to answer tubal ligation/partners vasectomy separately to answering contraception questions.
34-34	Current	WHA	Option (a) was split into three:			The free text line was deleted

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
	Contraception		- 'I use a combined oral contraceptive pill (The Pill)' - 'I use a progestogen only oral contraceptive pill (The Mini Pill)' - 'I use the oral contraceptive pill but I don't know what type'. Further additional items include, 'I use a copper intrauterine device (IUD)', 'I use a progestogen intrauterine device (IUD) (eg Mirena)', 'I use an injection (e.g. Depo-Provera)', 'I use the safe period method (eg natural family planning, rhythm method, Billings method, body temperature method, periodic abstinence)', 'I use a vaginal ring (e.g. Nuvaring)'.			from the 'other method of contraception' as was the instructions 'please write on the line'.
35	Currently pregnant	WHA				
36	Ever been pregnant	WHA		New item added to replace the instructions accompanying the pregnancy and child birth questions.		This change was made after the pilot.
37	Childbirth miscarriage	WHA	Response A) 'Live birth' and response B) 'Live premature birth' were combined into A) 'Live birth'.			
38	Pregnancy and emotional well being - information	Beyond Blue			This item was added to ascertain the assistance women have received or been offered during their pregnancy with regard to emotional wellbeing. They were designed to inform program developers in this area.	
39	Ever given birth	WHA		New item added to replace the instructions accompanying the pregnancy and child birth questions.		This change was made after the pilot.
40	DOB Children		Added a box for 9th child.			

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
41-42	Childbirth complications & pregnancy diagnosis	WHA and beyondblue	This question was split into two sections. Q41 childbirth complications and Q42 pregnancy diagnosis. 'Premature birth' and 'Emotional distress' was added to Q41. 'Antenatal depression', 'Postnatal depression', 'Antenatal anxiety', 'Postnatal anxiety', 'Gestational diabetes', 'Hypertension (high blood pressure) during pregnancy' were all added. The question stem for childbirth complications was kept the same but the question stem for pregnancy diagnosis was changed to 'Were you diagnosed or treated 'Mark all that apply on each line'			
43	Breastfeeding	WHA	Responses were changed to 9 text boxes for entry of the number of months for each child and the instructions changed to 'please write number of months in the boxes'.			
44-47	Maternity leave	WHA	Q47 Was moved from under the skip so that people who had not yet given birth but were on maternity leave could answer it.			Items were modified after data analysis conducted.
4-49	Children living with you	WHA				
50-51	Child Care	WHA	'Do you ever use childcare (formal or informal)' was deleted as well as 'In general how satisfied are you with your child care arrangements'.			
52	Height	WHA	Feet and inches boxes were removed so there is now only an option to write in centimetres.			
53	Weight	WHA	Response boxes for stones and pounds were removed leaving only the kilogram option.			
54	Waist circumference	WHA			It has been argued that waist measurement is more accurate than BMI at predicting health outcomes and has therefore been introduced to Y5	Instruction and response boxes for inches were removed so participants could only answer in centimetres.
55-57	Like to weigh/ diet/ satisfaction	Modified from French, SA, Story, M, Downes, B, Resnick, MD, Blum, RW (1995).		Dieting question was replaced with Q57, the weight control		

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
		Frequent dieting among adolescents: psychosocial and health behaviour correlates. American Journal of Public Health, 85(5): 695-701 and WHA		strategies from M5.		
58-63	Smoking	Modified from Australian Institute of Health and Welfare (AIHW) (1997) National Health Data Dictionary, Version 6.0. Standard questions on the use of tobacco among adults.	"What age did you start smoking daily" was deleted because it became evident that the women in this cohort were not taking up smoking at this age.			Additional item added because it was evident that not many young cohort women started to smoke cigarettes. "Have you tried to quit smoking in the last six months?" Smoking uptake question was deleted after pilot.
64-66	Alcohol	Modified from National Heart Foundation of Australia (1990). Risk factor prevalence study Survey no. 3 1989. National Heart Foundation of Australia and Australian Institute of Health.				
67-68	Youth alcohol patterns	WHA			This item has been added as alcohol consumption in late teens and early twenties presented a gap in the data we have collected.	
69	Drugs	National Drug Strategy household survey: survey report 1995 (1996) pending	Questions collapsed to two options due to low responses.			Ice and crystal meth were added as alternative names for amphetamines. GHB, Fantasy Liquid ecstasy were added as examples of designer drugs, these items were deleted after the pilot. Questions were collapsed into

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
						two options after the pilot.
70	Physical Activity	Active Australia Armstrong, T, Bauman A, Davies J. Physical activity patterns of Australian Adults: results of the 1999 National Physical Activity Survey. AIHW Canberra 2000				
71	Sitting	WHA				
72-89	FFQ - in the same format as Y3.	Ireland P, Jolley D, Giles G, O'Dea K et al. Development of the Melbourne FFQ: a food frequency questionnaire for use in an Australian prospective study involving an ethnically diverse cohort. Asia Pacific J Clin Nutr 1994; 3:19-31.			The FFQ is being used every second survey as it provides useful information about nutritional intake.	
90	Soft drinks	WHA			This item was introduced to compliment the FFQ by providing additional information on soft drink intake from a cohort of high soft drink consumers.	
91	Stress	WHA				
92	Social support	Sherbourne, C.D., & Stewart, A.L. (1991). The MOS social support survey. Social Science and Medicine, 32(6), 705-714				

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
93	Approach to life	Revised and reduced Revised Life Orientation Test (LOT-R) Scheier M.F., Carver, C.S., Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self esteem): a re-evaluation of the life orientation test. Journal of Personality and Social Psychology, 67, 1063-1078.				
94	Life events	Modified from Norbeck, J.S. (1984). Modification of live event questionnaires for use with female respondents. Research in Nursing and Health, 7, 61-71.	‘			‘You or a family member involved in problem gambling’ was added as this is an important contemporary social issue for women.
95-96	Life isn’t worth living/ Self harm	Modified from Beck A, Schuyler D & Herman, I. (1974) Development of the Suicide Intent Scale. In AT Beck, HLP Resnick, & DJ Lettieri (Eds.) The prediction of suicide. Bowie, MD: Charles Press Publishers				
97	CES-D	Andresen, E.M., Carter, W.B., Malmgren, J.A., & Patrick, D.L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. American Journal of Preventative Medicine, 10(2), 77-82.				
98	GADS	Anxiety and depression scales from: Goldberg, D., Bridges, K., Duncan-Jones, P., & Grayson, D. (1988). Detecting				

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
		anxiety and depression in general medical settings. British Medical Journal, 297, 897-899.				
99	Care for others	Modified from Australian Bureau of Statistics (1993) Disability, Ageing and Carers Australia. Canberra: ABS. Cat. No. 4432.0				
100	Need for care	Modified from Australian Bureau of Statistics (1993) Disability, Ageing and Carers Australia. Canberra: ABS. Cat. No. 4432.0				
101	Partner	WHA	Changed to 'Have you ever had a partner or spouse?'			
102	Abuse	Modified from Hegarty KL, Sheehan M, Schonfeld C. (1999) A multidimensional definition of partner abuse: development and preliminary validation of the Composite Abuse Scale. J Fam Violence, 14, 399-414.	Q93 deleted Response options for Q102 changed to 'In the last 12 months', 'More than 12 months ago' and 'Never'. The stem in question was changed to 'This question asks about situations you may have experienced with current or past partners'.			
103	Violent relationship	Hwalek, M.A., & Sengstock, M.C. (1986). Assessing the probability of abuse of the elderly: Toward development of a clinical screening instrument. Journal of Applied Gerontology, 5(2), 153-173.				
104	Managing time	Modified from Statistics Canada, Housing Family and Social Statistics Division (1987) General social survey analysis series. Ottawa: Canadian Government Publication Centre. ISSN 0836-043X				

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
105	Time use	Modified from Australian Bureau of Statistics (1993) Time use survey, Australia, 1992: user's guide. Canberra: ABS. Cat No. 4150.0.	The explanation of option e 'Casual paid work' was removed to avoid confusion.			
106-108	Sitting on work day and non-work day	WHA			Additional item added to ascertain differing levels of physical activity over work days and non-work days	This item was added after the pilot.
109	Sleep	WHA				New item added as sleep patterns are an important part of women's health.
110	Employment	WHA	'None of the above' was made bold.			
111	Job security	WHA				
112	Happy with job hours	Modified from Australian Bureau of Statistics (1993) Time use survey, Australia, 1992: user's guide. Canberra: ABS. Cat No. 4150.0.				
113	Occupation	Modified from M2 and Australian standard classification of occupations. Second Edition. (1997). Catalogue No. 1220.0 (from the web).				
114	Unemployed	WHA				
115	Education	Modified from ABS (1993) 1996 Census of population and housing: Nature and content of the census. Canberra: ABS. Cat No. 2008.0.				
116	Income	Modified from ABS (1996) Census Dictionary. Canberra: Australian Government Publishing Service. Cat No 2901.0, p240	'Each week' was added to option b. Four additional tax brackets were added. '$1,500-$1,999 ($78,000- $103,999 annually)', '$2,000-$2,499 ($104,000-$129,999 annually)', '$2,500-$2,999 ($130,000-$155,999 annually)' and '$3,000 or more ($156,000 or more annually)'.			116a and 116b (Before tax) was inserted into question 116 in keeping with other income questions.

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
117	People dependent on income	Modified from Australian Bureau of Statistics (1996) Australian Social Trends 1996. Canberra: ABS. Cat No. 4102.0.				
118	Manage on income	WHA				
119	Percent of income on housing	WHA			This item was included as it is a contemporary issue that affects women.	
120	Housing situation	WHA			This item was included as it is a contemporary issue that affects women.	'Living with parents/in-laws' was added in response to participant comments. 'Departments of Defence, Education and Health public rental' was replaced with 'Houses that comes with employment (e.g. Department of Defence, Department of Education, mining company etc' this captures all women who have housing supplied by employment rather than state supplied housing. Options Owned home with a mortgage and owned home without a mortgage were combined into one response as answering Q119 will clarify if pays a mortgage or not.
121	Marital status	Modified from ABS (1993) 1996 Census of population and housing: Nature and content of the census. Canberra: ABS. Cat No. 2008.0.				

Y5 Item No	Topic	Source	Y4 Main to Y5 Main			Has the item changed from Y5 Pilot to Y5 Main? Why?
			Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
122	Who lives with you	Modified from ABS (1994) Australian Housing Survey: User Guide. Canberra: ABS. Cat No. 4180.0				
123	Satisfaction	WHA				
124	Proxy	WHA	Changed to the same format as O5 being two questions that ask the participant if someone helped them fill in the survey and the reason for needing help as opposed to asking the proxy to provide their details if they filled the survey in on behalf of someone.			
125	Reason for assistance in completing survey					

Table 2-8 Deleted items from 1973-78 cohort Survey 4 to 1973-78 cohort Survey 5

Y4 item number	Topic	Source	Deletion
26	Abnormal pap test	WHA	ENTIRE QUESTION DELETED As it is no longer considered useful for policy purposes. This was replaced with 'Have you ever had a vaccination for HPV'.
29	Pill (total years)	Modified from NCEPH (1992) Project Health Check. Ref: CS3310, ACT.	ENTIRE ITEM DELETED.This item was initially used as long term use of contraceptives has been linked to endocrinology problems. This question however is unable to measure dosage which would be necessary for analysis, so it is no longer considered useful.
30	Emergency contraception	WHA	ENTIRE ITEM DELETED. At Y4 only 10% of the women reported using emergency contraception and of these women only 0.7% reported difficulties obtaining it therefore this question is no longer necessary.
43 & 45	Childcare	WHA	Q43 and Q45 were deleted, leaving 3 of the 5 original questions in the current survey. Change to the format of the childbirth items meant these items were no longer necessary.

Y4 item number	Topic	Source	Deletion
50	Like to weigh/ diet/ satisfaction	Modified from French, SA, Story, M, Downes, B, Resnick, MD, Blum, RW (1995). Frequent dieting among adolescents: psychosocial and health behaviour correlates. American Journal of Public Health, 85(5): 695-701.	Q50 was deleted leaving 2 of the original 3 questions in the current survey. It was replaced in the current survey with a more comprehensive weight loss question which asked specific techniques.
52	Medications	WHA	ENTIRE ITEM DELETED. The question listed various types of medications and gave some examples of these medications. It was decided that this could be confusing as the medications could be administered for many different reasons therefore this question was deleted and replaced with Q18 which asks the same thing but offers an open ended response line for answers.
62-63	Fruit and vegetables	WHA	ENTIRE ITEM DELETED. This item was deleted as the same information is covered in the Food Frequency Questionnaire.
67	PA in main job	WHA	ENTIRE ITEM DELETED. These items were deleted as a new item (Q93) has been added that more comprehensively covers this area.
68	PA other activities	WHA	ENTIRE ITEM DELETED. These items were deleted as a new item (Q93) has been added that more comprehensively covers this area.
79	Share of activities	WHA	ENTIRE ITEM DELETED. This item showed little variability across longitudinal analysis.
90	Living overseas	WHA	ENTIRE ITEM DELETED. One of the main purposes of these questions was to see if overseas travel could explain non response to surveys. The majority of long term and permanent overseas travel is between the ages of 20-29. The women have now passed this age so retention of this question is not necessary.
93	Abuse	Modified from Australian Bureau of Statistics (1996) Women's Safety Australia. Canberra: ABS. Cat No. 4128.0	ENTIRE ITEM DELETED. Q93 was deleted leaving 2 of the original 3 Abuse questions in the current survey. This item only needed to be asked once as it asks about the participant's childhood should not be variable.
95	Sense of well-being	WHA	ENTIRE ITEM DELETED. Due to the impending burden of the increase in size of the current survey, these questions were removed.
96	Internet for medical information	WHA	ENTIRE ITEM DELETED. It is suggested that the patterns of usage would be strongly correlated to the availability of broadband. At this point in time this question is limited due to limited broadband availability.
97	Main form of transport	WHA	ENTIRE ITEM DELETED. This item was deleted as analysis from Y4 showed a close link with availability of public transport.
103-106	Aspirations	Modified from Hakim, C. (1991). Grateful slaves and self-made women: in women's work orientations. European Sociological Review, 7(2), 101-121.	ENTIRE ITEM DELETED. This question was deleted because some of the women have already reached, and others are soon approaching the target age for their aspirations.

Table 2-9 Deleted items from 1973-1978 cohort Pilot Survey 5 to 1973-1978 cohort Survey 5

Y5 pilot item number	Topic	Source	Deletion
31	Sexual Partners	WHA	ENTIRE ITEM DELETED. During evaluation participants commented that the question was too personal
32	Sexual Orientation	WHA	ENTIRE ITEM DELETED. Little change in sexual orientation over time
39	Emotional Health in Pregnancy – experiences	WHA and Beyond Blue	ENTIRE ITEM DELETED. High missing data.
42	Breast milk offered after birth	WHA	ENTIRE ITEM DELETED. Deleted due to low priority and space constraints.
52	Child care satisfaction		ENTIRE ITEM DELETED. Deleted after analysis and review of items.
64	Smoking	Modified from National Heart Foundation of Australia (1990). Risk factor prevalence study survey no. 3 1989. National Heart Foundation of Australia and Australian Institute of Health.	ENTIRE ITEM DELETED. 'At what age did you start smoking daily?' was deleted as there has been little uptake of smoking from women within this cohort.
93	Daily time allocation	WHA	ENTIRE ITEM DELETED. Deleted due to poor responses regarding the time spent within in 24 hour period.
122	Additional survey on emotional health in pregnancy question	Beyond Blue	ENTIRE ITEM DELETED. The Beyond Blue Foundation has expressed interest in conducting a substudy with women who participate in ALSWH to examine emotional wellbeing during pregnancy. The item was included to ascertain the willingness of the participants to take part in a substudy, however a different sampling method will be used instead.

Table 2-10 Details of all items in the 6th Pilot Survey of the 1946-51 cohort, including all changes (deletions, additions) from the 5th Survey to the 6th Survey

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
1-11	1 -11	How to complete SF-36	Ware, J.E., & Sherbourne, C.D. (1992) The MOS 36-Item Short-Form Health Survey (SF-36):1. Conceptual framework and item selection, *Medical Care*, 30(6):473-483.			
12	12	GP Consultations	Modified from ABS (1991) *1989-1990 National health survey users' guide*. Canberra: ABS. Cat No. 4363.0			
13	13	Specialists Consultations	WHA			

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
14	14	Alternative Therapies	WHA			
15	15	GP Continuity of Care	WHA			
16	16	GP Costs	Modified from Davies, A.R., & Ware, J.E.J. (1991). *GHAA's consumer satisfaction survey and user's manual* (2nd Edn). Washington DC: The Group Health Association of America (GHAA).			
17	17	Health care card	WHA			
18a, b	18a,b	Private Health Insurance	Modified from ABS (1991) *1989-1990 National health survey users' guide.* Canberra: ABS. Cat No. 4363.0			
19	19	Hospital Admissions	Modified from ABS (1991) *1989-1990 National health survey users' guide.* Canberra: ABS. Cat No. 4363.0			
20a, b	20a,b	Pap Test / Mammogram	Modified from ABS (1991) *1989-1990 National health survey users' guide.* Canberra: ABS. Cat No. 4363.0			
21	21	Abnormal Pap Test / Mammogram	WHA – modified from Mid 1			
22	22	Screening – BP, Cholesterol, BSL, Skin	WHA			
23	23	Screening – breasts, bones, bowels, reminders	WHA			
24	24	Lifestyle Information Sources	WHA			
25, b	25	HRT/Pill	Modified from ABS (1991) *1989-1990 National health survey users' guide*. Canberra: ABS. Cat No. 4363.0			
26	26	Hysterectomy	WHA			
27	27	Menstrual Frequency	Modified from Brambilla, DJ., McKinlay, SM., Johannes, CB. (1994) Defining the perimenopause for application in epidemiological investigations. *American Journal of Epidemiology*, 140(2), 1091-95			
28	28	Periods ceased	WHA			
29	29	Gestational Diabetes	Modified from ABS (1991) *1989-1990 National health survey users' guide.* Canberra: ABS. Cat No. 4363.0			

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
30	30	Health Service Utilisation	Modified from Davies, A.R., & Ware, J.E.J. (1991). *GHAA's consumer satisfaction survey and user's manual* (2nd Edn). Washington DC: The Group Health Association of America (GHAA).			
31	31	Dentists	Adapted from Anne Young's Health Care Access ALSWH? Substudy			
32-36	32-36	Oral Health Care	Modified from Carter, K.D., & Stewart, J.F. (2002). *National Dental Telephone Interview Survey 2002.* The AIHW Dental Statistics and Research Unit, University of Adelaide.			
37	37	Falls	Modified from DVA trial (1997)			
38	38	Diagnoses	Modified from ABS (1991) *1989-1990 National health survey users' guide.* Canberra: ABS. Cat No. 4363.0			
39	39	Memory	Crook III, T. M., Feher, E. P., & Larrabee, G. J. (1992). Assessment of memory complaint in age-associated memory impairment: The MAC-Q. International *Psychogeriatrics*, 4(2), 165-176. (Revised by WHA for Australian sample)			
40	40	Operations/Procedures	WHA			
41	41	Sleeping problems	Baum, F.E. & Cooke, R.D. (1989). Community-health needs assessment: use of the Nottingham health profile in an Australian study. *The Medical Journal of Australia*, Vol. 150, pp 581-590.			
42-43	42-43	Medications/ Vitamins/ Supplements	WHA			
44	44	Symptoms & Seeking Help	WHA (Survey 1) with revisions.			
45-46	45-46	Life isn't worth living / self harm	Modified from Beck A, Schuyler D & Herman, I. (1974) Development of the Suicide Intent Scale. In AT Beck, HLP Resnick, & DJ Lettieri (Eds.) *The prediction of suicide*. Bowier, MD: Charles Press Publishers			
47	47	Stress	WHA			
48	48	Life Control Scale	Bobak, M., Pikhart, H., Hertaman, C., Rose, R. & Marmot, M. (1998) Socioeconomic factors, perceived control and self-reported health in Russia. A cross-sectional survey. *Social Science Medicine,* 47(2), 269-279.			

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
49	49	Life Orientation Test-Revised	Revised and reduced Revised Life Orientation Test (LOT-R) Scheier M.F., Carver, C.S., Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self esteem): a re-evaluation of the life orientation test. *Journal of Personality and Social Psychology*, 67, 1063-1078.			
50	50	Postcode	WHA			
51	51	Life Events	Modified from Norbeck, J.S. (1984). Modification of live event questionnaires for use with female respondents. *Research in Nursing and Health*, 7, 61-71. Then revised and extended			
52	52	Depression (CES-D)	Andresen, E.M., Carter, W.B., Malmgren, J.A., & Patrick, D.L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. American Journal of Preventative Medicine, 10(2), 77-82.			
53	53	Goldberg Anxiety and Depression Scale	Anxiety and depression scales from : Goldber, D., Bridges, K., Duncan-Jones, P., & Grayson, D. (1988). Detecting anxiety and depression in general medical settings. British Medical Journal, 297, 897-899.			
54	54	Need help with daily tasks	Modified from ABS (1993) Disability, Aging and Carers Australia. Canberra: ABS. Cat. No. 4432.0			
55	55	Weight / Height	WHA			
56	56	Waist measurement	WHA			
57	57	Weight loss or gain	WHA - Modified from Mid Phase 2			
58	58	Weight Control Strategies	French, S.A., Story, M., Downes, B., Resnick, M.D., Blum, R.W. (1995) Frequent dieting among adolescents: Psychosocial and health behavior correlates. American Journal of Public Health, 85(5): 695-701.	Trade mark symbol added to commercial diet options.		
59-61	59-61	Alcohol Status	Modified from National Heart Foundation of Australia (1990). Risk factor prevalence study Survey no. 3 1989. National Heart Foundation of Australia and AIHW			
	62	Alcohol Consumption (during different stages in life)	WHA	Deleted. Item only asked once, should not be variable.		
62	63	Non alcoholic drinks	WHA			

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
63-73	64-74	Food Frequency Questionnaire	Ireland P, Jolley D, Giles G, O'Dea K et al. Development of the Melbourne FFQ: a food frequency questionnaire for use in an Australian prospective study involving an ethnically diverse cohort. *Asia Pacific J Clin Nutr* 1994;3:19-31.			
74-78	75-79	Smoking	Modified from National Heart Foundation of Australia (1990). Risk factor prevalence study survey no.3 1989. National Heart Foundation of Australia and AIHW Also: Modified from AIHW (1997) National Health Data Dictionary, Version 6.0. Standard questions on the use of tobacco among adults.			
79-81	80-82	Exercise Status (Physical activity)	WHA Substudy on weight gain at mid-life			
82	83	Occupational Activity	WHA			
107	84	Date of Birth	WHA			
83	85	Time Use	Modified from ABS (1993) *Time use survey, Australia, 1992: user's guide.* Canberra: ABS. Cat No. 4150.0.			
84	86	Time pressure	Modified from Statistics Canada, *Housing Family and Social Statistics Division* (1987) General social survey analysis series. Ottawa: Canadian Government Publication Centre. ISSN 0836-043X			
85	87	Share of Tasks	WHA			
86	88	Caring for grandchildren	WHA			
87	89-92	Care for other people	Modified from ABS (1993) *Disability, Aging and Carers Australia.* Canberra: ABS. Cat. No. 4432.0			
91	93	Paid work	WHA			
92	94	Occupation Self and Partner	Modified from Mid Phase 2 and *Australian standard classification of occupations.* Second Edition. (1997). Catalogue No. 1220.0 (from the web page)			
93	95	Manage on Income	WHA			
94	96	Dependents on household income	WHA			
95	97	Retirement Status	Modified from the HILDA Survey - Continuing Person Questionnaire, Wave 3, question L2a.			
96	98	Date of retirement	Modified from the HILDA Survey - Continuing Person Questionnaire, Wave 3, question L2b.			

Survey 6 Item No	Survey 5 Item No	Topic	Source	Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?
97	99	Expect to retire	Modified from the HILDA Survey - Continuing Person Questionnaire, Wave 3, question L17.			
98	100	Retirement age choice	Modified from the HILDA Survey - Continuing Person Questionnaire, Wave 3, question L18.			
99a, b	101a,b	Current/ expected sources of income	Modified from the HILDA Survey - Continuing Person Questionnaire, Wave 3, question L22.			
100	102	Retirement activity plans	WHA			
101	103	Retirement manage on money	WHA			
102	104	Elder Abuse	Hwalek, M.A., & Sengstock, M.C. (1986). Assessing the probability of abuse of the elderly: Toward development of a clinical screening instrument. *Journal of Applied Gerontology,* 5(2), 153-173.			
	105	Partner Abuse	Modified from Hegarty KL, Sheehan M, Schonfeld C. (1999) A multidimensional definition of partner abuse: development and preliminary validation of the Composite Abuse Scale. *J Fam Violence*, 14, 399-414.	Deleted. Only asked once as responses will not change over time.		
103	106	Marital Status	Modified from ABS (1993) 1996 Census of population and housing: Nature and content of the census. Canberra: ABS. Cat No. 2008.0.			
104	107	Who lives with you	Modified from ABS (1994) Australian Housing Survey: User Guide. Canberra: ABS. Cat No. 4180.0			
105	108	Social Support	Sherbourne, C.D., & Stewart, A.L. (1991). The MOS social support survey. *Social Science and Medicine,* 32(6), 705-714.			
	109	Twin	WHA	Deleted. Only asked once, response will not change over time.		
106	110	Achievements	WHA			
	111-113	Proxy	WHA			
30	Page 30	Have we missed anything? Comments	WHA			
31	Consent Page		WHA	Changed to Y5 format		

Table 2-11 Deletions from the 5th Survey to the 6th Pilot survey of the 1946-51 cohort

Survey5 Item No	Topic	Source	Was item in previous surveys of 1946-51 cohort?	Main Survey 5 to Main Survey 6			Has the item changed from M6 Pilot to M6 Main? Why?
				Has the item changed? Why?	Is it replacing an item? Why?	Is it an additional item? Why?	
58	Weight Control Strategies	French, S.A., Story, M., Downes, B., Resnick, M.D., Blum, R.W. (1995) Frequent dieting among adolescents: Psychosocial and health behavior correlates. American Journal of Public Health, 85(5): 695-701.	M5	Trade mark symbol added to commercial diet options.			
62	Alcohol Consumption (during different stages in life)	WHA	M5	Deleted. This item only needed to be asked once as it asks about the participant's alcohol consumption during different life stages and should not be variable.			
105	Partner Abuse	Modified from Hegarty KL, Sheehan M, Schonfeld C. (1999) A multidimensional definition of partner abuse: development and preliminary validation of the Composite Abuse Scale. J Fam Violence, 14, 399-414.	M5	Deleted. Only needed to be asked once as responses will not change over time.			
109	Twins	WHA	M5	Item deleted as only needed to be asked the once, response would not change over time.			
	Consent Page	WHA		Changed to Y5 format			

3. METHODOLOGICAL ISSUES

3.1 Matching hysterectomy cases with controls in a conditional logistic regression analysis: A case - control study using ALSWH data

Background

Data from the Australian Longitudinal Study of Women's Health (ALSWH) were used to investigate whether overweight women were more likely to have a hysterectomy and whether hysterectomy led to increased weight gain. The details of the study have been published elsewhere (Fitzgerald, Berecki-Gisolf, Hockey & Dobson, 2009). Here we examine the technical aspects of matching the cases (women who had had a recent hysterectomy) and controls (women who had not had a hysterectomy.)

1946-51 Cohort Surveys and Hysterectomy

Data were from Surveys 1 to 4 of the 1946-51 cohort, when the women were at ages when hysterectomies are reasonably common. At the first survey the women were aged 45-50 years and were asked whether they had ever had a hysterectomy. At each subsequent survey, women were asked if they had had a hysterectomy in the last 2 or 3 years, depending on the time since the previous survey. Around 200 women had hysterectomies between each survey. For Surveys 2 and 3, there was information on both recent hysterectomy and future weight change, which could be calculated from the next survey. Therefore, matching was done at both Survey 2 and 3 when the women were aged from 47 to 58 years.

Matching Cases with Controls

The aim of the study was to analyse weight change in women who had had a hysterectomy compared with weight change of similar women who had not had a hysterectomy. The percentage increase in Body Mass Index (BMI) was used to measure weight gain. The variables that were matched were:

- Educational status
- Menopause status
- Height
- Weight

These factors are known to be, or likely to be, associated with weight gain. Educational status is a useful indicator of socio-economic status. Education status was divided into two categories: no education or school education only; and any education beyond school. As the women in this cohort were going through menopause, they could be classified as pre, peri, and post-menopausal. The fourth menopausal category, surgical menopausal, was not used, as women in this category have already had a hysterectomy. Table 3-1 shows the number of women in each Education and Menopause category at Survey 2. There were other possible confounders for weight gain, and these were adjusted for in the analysis rather than used in the matching. These other co-variates were:

- Area of residence
- Energy intake
- Exercise
- Smoking status
- Age
- Parity (number of children)
- Age at birth of last child

Table 3-1 Frequency of menopause and educational status

	Education		Menopause		
	School or nothing	Beyond School	Pre	Peri	Post
Cases (n=212)	99	113	110	90	12
Controls (n=5317)	2288	3029	2940	1953	385

Profiling the cases

At Survey 2 there were 212 eligible cases, that is women with a recent hysterectomy. For each case the education, menopause status, and weight and height profile was matched to a control with the same profile, where possible. Most cases, 175 out of 212, had a unique profile, and the rest shared their profile with either one or two other cases. The existence of more than one woman per profile did not cause problems, as the modelling could account for both multiple cases and multiple controls in each stratum. That is, the numbers of cases and controls within the match did not need to be the same (n to m matching).

A unique counter for each profile

For ease of working with a profile of four variables, 'counters' were derived for each profile. There were two counters, one for grouping the women into height groups, and the other for grouping into weight groups. Each counter was unique for each profile. The counters were calculated by adding a multiple of education/menopause status with a multiple of the weight and height. Since education and menopause were categorical they could be combined into a single 6-value category, ed_men. The two counters were calculated as follows:

*Counter 1= c1*ed_men + c2*weight + height*

*Counter2 = c1*ed_men + c3*height + weight*

The coefficients c1 to c3 must be carefully chosen to ensure each profile has a unique counter. To ensure uniqueness c2 had to be at least the range of the heights and c3 the range of the weights. The coefficient c1 was calculated as the multiple of the range of the heights and weights. Further, the weight and height was be scaled down by subtracting the minimum weight or height, which prevented the counters from getting too large. In the example below, it can be deduced that the minimum height was 147 cm and the minimum weight was 46 kg. Also, the range of heights was 34 cm and the range of weights was 98 kg.

An example of calculation and use of the counters

To demonstrate calculation and use of counters, a case (a woman who had received a hysterectomy) who had no education beyond school and was pre-menopausal, would have an educational-menopausal (ed_men) status of 1. If this case was also 160 cm tall and weighed 71 kg, her counter values, calculated using these formulae:

counter1 = **3332***(ed_men -**1**) + **34***(weight-**46**) + height

counter2 = **3332***(ed_men -**1**) + **98***(height-**147**) + weight

would result in counter1 = 1010 and counter2 = 1345.

Another woman with exactly the same profile would have the same counter1 and counter2 values, while another women with a similar profile, but with minor differences, would have different counters. For example, a woman with the same profile, except that her height is one centimetre higher would

have counter1 = 1011, and a woman with the same profile except for being one kilogram heavier would have counter2 = 1346. Therefore, the counters can be used to match cases that do not have a perfect match to any control.

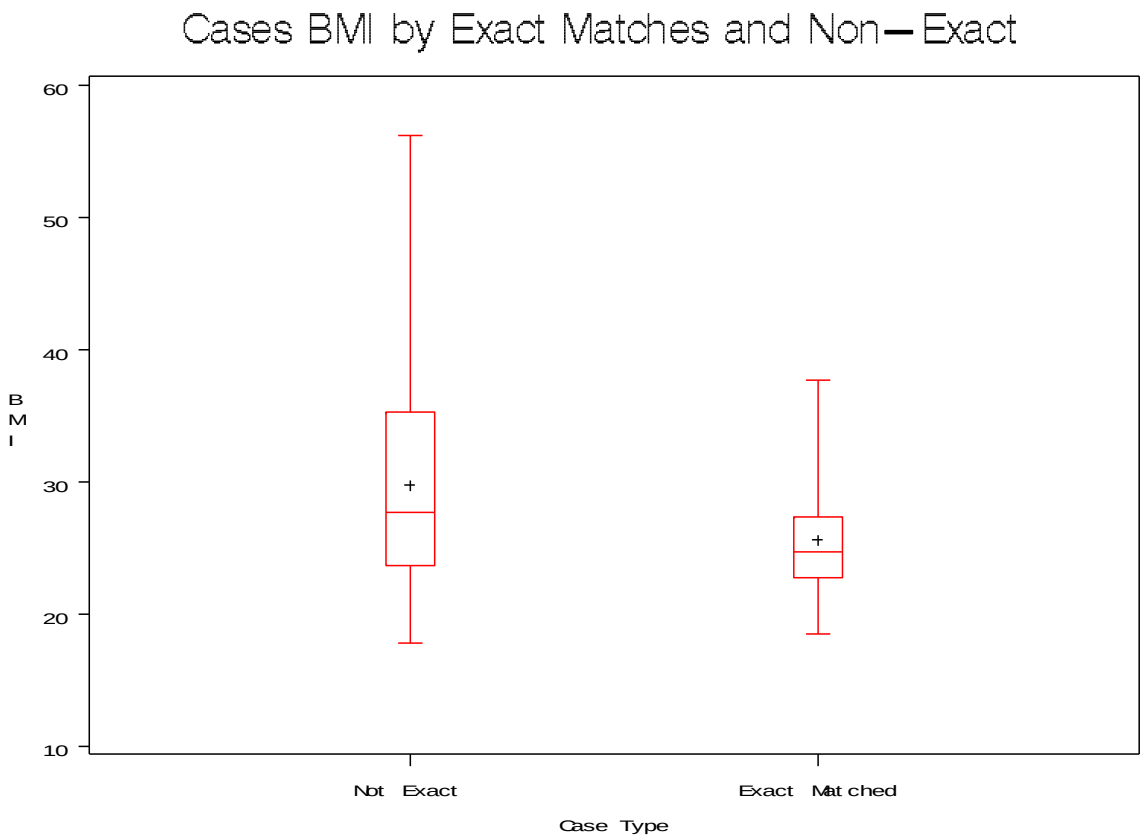
Controls

There were 5317 controls, and each was given a profile using the method used for the cases. 1030 out of 5317 controls had a unique profile, but most did not. The same counters that were used for the cases were used for the controls to enable matching.

Matching

Of the 212 cases, 150 were matched to a control with an identical profile. The 41 unmatched cases were found to be less typical of the first matched group and if they were dropped from the analysis there would be clear bias. Figure 3-1 shows box plots of BMI for the cases that were matched, alongside a box plot of BMI for those not matched. The unmatched cases had a higher median BMI and a greater variability.

Figure 3-1 BMI of Cases Exact Matched and Not Exact Matched



To confirm the apparent differences in the BMI a *t*-test with unequal variances for the difference in BMI between the matched and unmatched women showed a significance difference of 4.14 BMI units, $p = 0.0003$ (Table 3-2). The unmatched women had a higher BMI than the non-matched women. It was essential to include these unmatched cases in the analysis to avoid bias.

Table 3-2 *T*-test BMI for Cases

Variable	Type	N	Lower CL	Mean	Upper CL	Std Dev	Min.	Max.
BMI	**Case not matched**	62	27.63	29.72	31.81	8.1614	17.782	56.191
BMI	**Matched**	150	24.923	25.581	26.239	4.094	18.443	37.638
BMI	**Diff (1-2)**		5.805	4.139	2.474	5.5681		

To match the unmatched cases one of the four profile variables had to be allowed to be slightly different. As each had only a few categories, education and menopause were not changed. As they could easily be changed by units, the continuous variables, height and weight, were changed. Height was chosen as the first variable to alter - it was allowed to increase by one, and then a match was done on this, then decrease by one, with a match, and then with height increasing by 2 cm and then decreasing by 2 cm. This was achieved by adjusting the Counter1 variable by 1 or 2 for the cases and then matching to a control. This process was repeated with weight increasing by one kg, and decreasing by one kilogram, and increasing and decreasing by 2 kilograms. This was done by adjusting counter2. A match was attempted after each adjustment to the weight in the same way as the height (Table 3-3).

Table 3-3 Numbers of Cases matched at each stage

Match	Freq	Cum	%	Remaining Unmatched
				212
Exact	150	150	70.75	62
Height + 1	19	169	79.72	43
Height – 1	8	177	83.49	35
Weight + 1	6	183	86.32	29
Weight – 1	3	186	87.74	26
Height + 2	6	192	90.57	20
Height – 2	3	195	91.98	17
Weight + 2	3	198	93.40	14
Weight – 2	0	198	93.40	14
BMI same	14	212	100	0

The last 14 were matched with the same integer BMI value and the same education/menopause status, but weight and height were not necessarily the same (otherwise these cases would not be in the analysis). This was done by visual examination of the records. In summary, 71% were matched exactly with the profile, and a further 22% were matched with alterations to weight or height of only 2 kilograms or centimetres, and a final 7% were matched with the same BMI. In all matches the menopause and education status were the same.

The controls were taken from a population of potential controls. Table 3-4 shows the numbers of controls selected from the larger population of potential controls.

Table 3-4 Numbers of Controls matched at each stage

Match	Freq	Cum	%	Remaining
				5317
Exact	591	591	11.12	4726
Height + 1	48	639	13.52	4678
Height – 1	12	651	13.92	4666
Weight + 1	8	659	14.12	4658
Weight - 1	7	666	14.30	4651
Height + 2	5	671	14.43	4646
Height – 2	4	675	14.53	4642
Weight + 2	3	678	14.61	4639
Weight - 2	0	678	14.62	4639
BMI same	14	692	14.92	4625

Only 15% of the potential controls were used. All the potential controls that had a match with a case were included. The relative ease of getting controls for the cases suggests the ALSWH data is a good source for other case-control analyses. To investigate whether the controls used had different BMIs from the unused potential controls a *t*-test could be used. Figure 3-2 shows that the distributions of BMIs for the two groups were similar. The long whiskers for the controls not matched were not surprising because there were a lot more unused controls than used controls. The *t*-test for group mean difference was not significant ($p = 0.53$) see

Table 3-5.

Figure 3-2 BMI of Controls and Unused Potential Controls

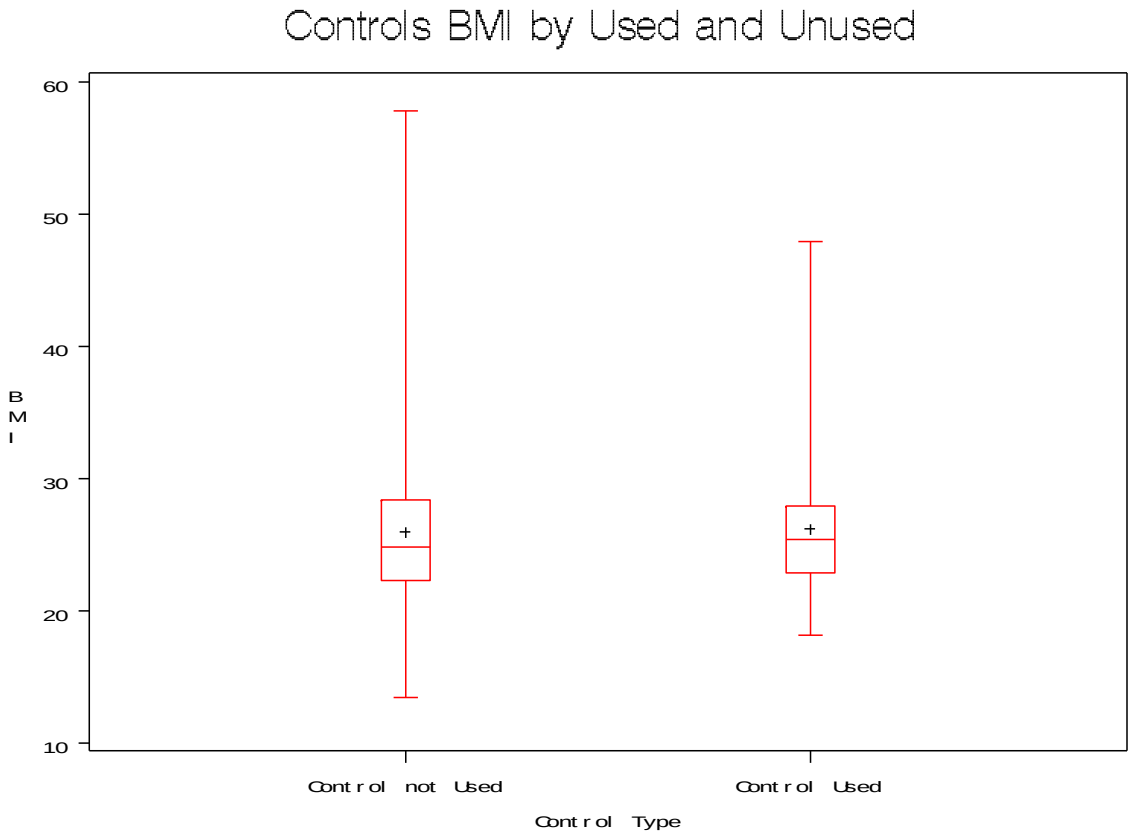


Table 3-5 T-test for BMI by Controls

Type	N	Lower CL	Mean	Upper CL	Std Dev	Min.	Max.
Control not matched	4639	25.692	25.839	25.987	5.1301	13.385	57.856
Matched	150	24.964	25.625	26.286	4.0953	18.443	37.638
Diff (1-2)		-0.615	0.2145	1.0441	5.101		

Matches as Strata

There were 199 matched sets which the modelling considers as strata. In four of these groups the mean BMI change in the hysterectomy group and the non-hysterectomy was the same. In 96 of the strata, the women with hysterectomies had a larger average increase in BMI. In the remaining 99 of the strata, the non-hysterectomised women had a larger average increase in BMI. This exploratory analysis suggests that hysterectomies do not lead to greater than expected weight gain.

Case-control matching for weight gain from Survey 3 to Survey 4

The case-control matching and analysis was repeated for weight gain from Survey 3 to 4 as a possible predictor for a recent hysterectomy between Surveys 2 and 3. Matching was performed in the same way as previously - the method and programming code used in the earlier matching was very easily adapted, and no problems were encountered. The tables and numbers from this matching are not repeated here as they do not provide any additional information.

Modelling Outcome: Conditional logistic regression was used in the analysis. The model's outcome was hysterectomy status, and the explanatory variable of interest was weight gain measured by percentage BMI change. At Survey 2, subsequent weight gain to Survey 3 was not associated with whether a woman had a recent hysterectomy. The modelling was repeated at Survey 3, and there was some suggestion that weight gain could predict hysterectomy status. That is, weight gain was weakly associated with a recent hysterectomy (p = 0.02).

Using ALSWH Data for Case-Control Analyses

The size of the dataset and its longitudinal nature make the ALSWH data very suitable for this type of analysis. Organising the data and then matching requires considerable initial work - however once done, it will be straightforward to repeat the analysis for other studies. The work described here was published in Menopause in 2009, and generated interest in the media and the wider community.

References.

Fitzgerald, D. M., Berecki-Gisolf, J., Hockey, R. L., & Dobson, A. J. (2009). Hysterectomy and weight gain. *Menopause, 16(*2):279-85.

3.2 Comparison of the ALSWH cohorts with women of the same ages in the 2006 Census and the 2004/2005 National Health Survey.

The purpose of this report is to identify the nature and extent of response and attrition bias in the ALSWH cohorts using the 2006 Australian Census and the 2004/2005 National Health Survey.

3.2.1 Background

In 1996, more than 40,000 women enrolled in the Australian Longitudinal Study on Women's Health (ALSWH). Women in three age groups (born in 1973-78 aged 18-23 years, born in 1946-51 aged 45-50 years, and born in 1921-26 aged 70-75 years in 1996) were selected from the national health insurance database, Medicare, which covers all Australian citizens and permanent residents. Sampling was random within each age group, with women from rural and remote areas sampled at twice the rate of women in urban areas. Response rates in the three cohorts cannot be specified exactly due to uncertainties about the accuracy of the Medicare database. Thus estimated response rates were 41-42% of the 1973-78 cohort, 53-56% of the 1946-51 cohort and 37-40% of the 1921-26 cohort in 1996 (Brown et al., 1999).

It is important, in view of the initial response rates and ongoing attrition through non-response and death, that the generalisability of the study is assessed. To this end, comparisons have been made of the initial cohorts to the 1996 census, and of the second survey of the 1973-78 cohort and third surveys of the 1946-51 and 1921-26 cohorts to the 2001 census (Brown et al., 1999; Powers, 2004).

The initial participants in each of the cohorts were reasonably representative of the general population of Australian women of the same age, but respondents were more likely to be Australian born and to have a post-school qualification (certificate, diploma or university degree), particularly women in the 1973-78 and 1946-51 cohorts. The later comparison with the 2001 census showed similar differences.

The aim of this report is to update the previous studies using data from the most recent census (2006) and data from Survey 4 of the 1973-78 and 1921-26 cohorts and Survey 5 of the 1946-51 cohort. In addition, comparisons of health related behaviours using data from the 2004/2005 National Health Survey, and Survey 4 of all three ALSWH cohorts are made.

3.2.2 Methods

At the fourth survey, 9145 women responded from the 1973-78 cohort, 10,905 from the 1946-51 cohort, and 7158 from the 1921-26 cohort. 10,626 women from the 1946-51 cohort responded to the fifth survey. Retention rates for eligible respondents of Survey 1 for the three cohorts at each survey are given in Table 3-6. In the 1921-26 cohort, 15% of the original cohort have been lost through death and a further 6% due to frailty. Not unexpectedly, only a small proportion of the other cohorts have been lost for these reasons. Note that losses due to death or withdrawal are not reflected in the figures in Table 3-6.

Table 3-6 Retention rates for 1973-78, 1946-51 and 1921-26 cohorts at each survey (age at survey in parenthesis)

Cohort	Survey 2	Survey 3	Survey4	Survey5
1973-78	69% (22-27)	65% (25-30)	68% (28-33)	-
1946-51	91% (47-52)	84% (50-55)	84% (53-58)	84% (56-61)
1921-26	91% (73-78)	85% (76-81)	84% (79-84)	-

Customised tables were requested from the Australian Bureau of Statistics (ABS) for data from the 2006 Census for women in the age groups corresponding to participants in the ALSWH at the time of the 2006 Census (28-33, 55-60 and 80-85 years). The characteristics requested were:

- indigenous status
- marital status
- country of birth
- language spoken
- education
- labour force status
- occupation
- household composition

In previous comparisons the results were presented by geographical area categorised by RRMA. The ABS is no longer able to provide data using this classification, which was based on the 1991 census data. Also, as a matter of policy, ALSWH has now standardised all geographical comparisons on the newer ARIA+ (AIHW, 2004). Hence, all the comparisos in this report are presented using the 5 categories of ARIA+ collapsed into 4 groups: Major Cities, Inner Regional, Outer Regional, and Remote/Very Remote.

Data from the 2004/2005 National Health Survey were obtained using a Confidentialised Unit Record File (CURF) supplied by the ABS (ABS, 2006). As these data are available by single ages it was possible to produce tables of women for ages corresponding to the three ALSWH cohorts in 2005 (27-32, 54-59 and 79-84 years). Characteristics tabulated were self rated health (SF1), BMI, smoking, alcohol and exercise. It was not possible to tabulate these characteristics by geographic area.

A full list of the ALSWH, Census and NHS questions used in each of the comparisons is given in Appendix B.

3.2.3 Results

Indigenous status (Table 3-7, Table 3-8, Table 3-9)

The question used by ALSWH and the 2006 census for indigenous status is virtually identical, the only difference being that the census allows respondents to be both Aboriginal and Torres Strait Islander. However, as the tabulations used are not categorised by particular indigenous status it is thought to be of little consequence in this instance.

Indigenous women were under–represented across all cohorts and geographical areas. This was particularly evident in the 1973-78 cohort and in Remote and Very Remote areas. The under-representation of Indigenous women in the 1973-78 cohort appears to have worsened since the previous comparison with the 2001 census (1.2% in 2001 to 0.9% in 2006).

Table 3-7 Indigenous status, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Indigenous	28	0.5%	6314	1.1%
Non-Indigenous	6066	99.2%	560086	93.4%
Not stated	21	0.3%	33018	5.5%
Total	**6116**	**100.0%**	**599418**	**100.0%**
Inner Regional				
Indigenous	25	1.5%	3739	2.9%
Non-Indigenous	1589	97.8%	120134	93.4%
Not stated	11	0.7%	4788	3.7%
Total	**1624**	**100.0%**	**128661**	**100.0%**
Outer Regional				
Indigenous	22	2.6%	4026	6.1%

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Non-Indigenous	820	97.0%	59033	89.1%
Not stated	3	0.4%	3219	4.9%
Total	**845**	**100.0%**	**66278**	**100.0%**
Remote/Very Remote				
Indigenous	5	2.5%	5027	25.9%
Non-Indigenous	210	97.3%	13085	67.4%
Not stated	1	0.2%	1308	6.7%
Total	**216**	**100.0%**	**19420**	**100.0%**
Australia				
Indigenous	85	0.9%	19176	2.4%
Non-Indigenous	9001	98.7%	754128	92.4%
Not stated	38	0.4%	42523	5.2%
Total	**9124**	**100.0%**	**815827**	**100.0%**

Table 3-8 Indigenous status, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Indigenous	30	0.5%	2605	0.5%
Non-Indigenous	6646	98.6%	455766	94.6%
Not stated	63	0.9%	23419	4.9%
Total	**6740**	**100.0%**	**481790**	**100.0%**
Inner Regional				
Indigenous	17	0.7%	1672	1.1%
Non-Indigenous	2436	98.8%	147286	94.9%
Not stated	13	0.5%	6162	4.0%
Total	**2466**	**100.0%**	**155120**	**100.0%**
Outer Regional				
Indigenous	9	0.9%	1930	2.7%
Non-Indigenous	1016	98.6%	66393	92.7%
Not stated	5	0.5%	3299	4.6%
Total	**1029**	**100.0%**	**71622**	**100.0%**
Remote/Very Remote				
Indigenous	6	3.8%	1928	14.6%
Non-Indigenous	147	95.9%	10427	78.9%
Not stated	0	0.3%	858	6.5%
Total	**153**	**100.0%**	**13213**	**100.0%**

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Australia				
Indigenous	64	0.6%	8165	1.1%
Non-Indigenous	10385	98.6%	681712	94.2%
Not stated	83	0.8%	33892	4.7%
Total	**10532**	**100.0%**	**723769**	**100.0%**

Table 3-9 Indigenous status, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
Indigenous	16	0.3%	298	0.2%
Non-Indigenous	4644	94.5%	175779	91.7%
Not stated	254	5.2%	15626	8.2%
Total	**4913**	**100.0%**	**191703**	**100.0%**
Inner Regional				
Indigenous	7	0.4%	172	0.3%
Non-Indigenous	1439	93.2%	54616	91.7%
Not stated	98	6.3%	4740	8.0%
Total	**1543**	**100.0%**	**59528**	**100.0%**
Outer Regional				
Indigenous	4	0.6%	206	0.9%
Non-Indigenous	584	91.6%	20860	90.9%
Not stated	50	7.8%	1889	8.2%
Total	**638**	**100.0%**	**22955**	**100.0%**
Remote/Very Remote				
Indigenous	1	0.9%	276	10.2%
Non-Indigenous	76	87.3%	2222	82.5%
Not stated	10	11.9%	196	7.3%
Total	**87**	**100.0%**	**2694**	**100.0%**
Australia				
Indigenous	28	0.4%	952	0.3%
Non-Indigenous	6745	93.9%	253601	91.5%
Not stated	411	5.7%	22474	8.1%
Total	**7184**	**100.0%**	**277027**	**100.0%**

Country of birth (Table 3-10, Table 3-11, Table 3-12)

The questions for country of birth followed a similar form for both ALSWH and the census. Both sets of data were categorised into Australian born, Main English Speaking countries, and Non-English Speaking Countries. Women born in non-English speaking countries were under-represented in all cohorts especially the 1973-78 cohort and in the Major Cities.

Table 3-10 Country of birth, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Australia	5451	89.1%	389545	65.0%
Main English Speaking Countries	275	4.5%	49463	8.3%
Non-English Speaking Countries	343	5.6%	120839	20.2%
Not stated	48	0.8%	39573	6.6%
Total	**6116**	**100.0%**	**599420**	**100.0%**
Inner Regional				
Australia	1547	95.3%	111277	86.5%
Main English Speaking Countries	47	2.9%	5784	4.5%
Non-English Speaking Countries	20	1.2%	5040	3.9%
Not stated	11	0.7%	6556	5.1%
Total	**1624**	**100.0%**	**128657**	**100.0%**
Outer Regional				
Australia	815	96.4%	55236	83.3%
Main English Speaking Countries	18	2.1%	3201	4.8%
Non-English Speaking Countries	7	0.8%	3697	5.6%
Not stated	5	0.6%	4150	6.3%
Total	**845**	**100.0%**	**66284**	**100.0%**
Remote/Very Remote				
Australia	204	94.3%	15949	82.1%
Main English Speaking Countries	8	3.5%	1021	5.3%
Non-English Speaking Countries	3	1.3%	899	4.6%
Not stated	2	0.9%	1550	8.0%
Total	**216**	**100.0%**	**19419**	**100.0%**
Australia				
Australia	8296	90.9%	573263	70.3%
Main English Speaking Countries	368	4.0%	59731	7.3%
Non-English Speaking Countries	393	4.3%	130798	16.0%
Not stated	67	0.7%	52034	6.4%
Total	**9124**	**100.0%**	**815826**	**100.0%**

Table 3-11 Country of birth, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Australia	4475	66.4%	259893	53.9%
Main English Speaking Countries	1183	17.6%	66579	13.8%
Non-English Speaking Countries	1006	14.9%	123250	25.6%
Not stated	75	1.1%	32071	6.7%
Total	**6740**	**100.0%**	**481793**	**100.0%**
Inner Regional				
Australia	1971	79.9%	116314	75.0%
Main English Speaking Countries	320	13.0%	17839	11.5%
Non-English Speaking Countries	157	6.4%	11344	7.3%
Not stated	19	0.8%	9622	6.2%
Total	**2466**	**100.0%**	**155119**	**100.0%**
Outer Regional				
Australia	845	82.1%	53531	74.7%
Main English Speaking Countries	116	11.3%	7483	10.4%
Non-English Speaking Countries	58	5.6%	5545	7.7%
Not stated	11	1.0%	5061	7.1%
Total	**1029**	**100.0%**	**71620**	**100.0%**
Remote/Very Remote				
Australia	123	80.1%	10081	76.3%
Main English Speaking Countries	18	11.9%	1225	9.3%
Non-English Speaking Countries	9	5.8%	790	6.0%
Not stated	3	2.2%	1114	8.4%
Total	**153**	**100.0%**	**13210**	**100.0%**
Australia				
Australia	7496	71.2%	441118	60.9%
Main English Speaking Countries	1668	15.8%	93502	12.9%
Non-English Speaking Countries	1259	12.0%	141091	19.5%
Not stated	110	1.0%	48059	6.6%
Total	**10532**	**100.0%**	**723770**	**100.0%**

Table 3-12 Country of birth, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
Australia	3434	69.9%	107915	56.3%
Main English Speaking Countries	685	13.9%	22797	11.9%
Non-English Speaking Countries	554	11.3%	40144	20.9%
Not stated	241	4.9%	20847	10.9%

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Total	**4913**	**100.0%**	**191703**	**100.0%**
Inner Regional				
Australia	1197	77.6%	43385	72.9%
Main English Speaking Countries	169	11.0%	5647	9.5%
Non-English Speaking Countries	90	5.9%	3927	6.6%
Not stated	86	5.6%	6573	11.0%
Total	**1543**	**100.0%**	**59532**	**100.0%**
Outer Regional				
Australia	495	77.6%	16708	72.8%
Main English Speaking Countries	69	10.9%	1829	8.0%
Non-English Speaking Countries	28	4.4%	1834	8.0%
Not stated	46	7.2%	2584	11.3%
Total	**638**	**100.0%**	**22955**	**100.0%**
Remote/Very Remote				
Australia	72	82.4%	2083	77.4%
Main English Speaking Countries	6	7.1%	182	6.8%
Non-English Speaking Countries	4	5.1%	136	5.1%
Not stated	5	5.4%	291	10.8%
Total	**87**	**100.0%**	**2692**	**100.0%**
Australia				
Australia	5186	72.4	170173	61.4
Main English Speaking Countries	927	12.9	30472	11.0
Non-English Speaking Countries	624	8.7	46064	16.6
Not stated/Other	427	6.0	30318	10.9
Total	**7165**	**100.0**	**277027**	**100.0**

Language spoken at home (Table 3-13, Table 3-14, Table 3-15)

Like country of birth, the wording of the question on language spoken at home was similar in both ALSWH and the census. The individual languages were grouped into English, and non-English languages for comparison. As would be expected those women who speak a language other than English were under-represented across all cohorts. This difference was more evident in Major Cities and Remote/Very Remote Areas.

Table 3-13 Language spoken at home, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
English	5373	87.9%	425618	71.0%
Language Other Than English	665	10.9%	141544	23.6%
Not stated	77	1.3%	32255	5.4%
Total	**6116**	**100.0%**	**599417**	**100.0%**
Inner Regional				
English	1571	96.7%	119044	92.5%
Language Other Than English	34	2.1%	5004	3.9%
Not stated	19	1.1%	4611	3.6%
Total	**1624**	**100.0%**	**128659**	**100.0%**
Outer Regional				
English	821	97.2%	59249	89.4%
Language Other Than English	19	2.2%	3724	5.6%
Not stated	5	0.6%	3309	5.0%
Total	**845**	**100.0%**	**66282**	**100.0%**
Remote/Very Remote				
English	209	96.8%	14653	75.5%
Language Other Than English	6	2.6%	3247	16.7%
Not stated	1	0.6%	1520	7.8%
Total	**216**	**100.0%**	**19420**	**100.0%**
Australia				
English	8275	90.7%	620083	76.0%
Language Other Than English	744	8.1%	153854	18.9%
Not stated	105	1.2%	41888	5.1%
Total	**9124**	**100.0%**	**815825**	**100.0%**

Table 3-14 Language spoken at home, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
English	6003	89.1%	361942	75.1%
Language Other Than English	620	9.2%	98988	20.5%
Not stated	117	1.7%	20868	4.3%
Total	**6740**	**100.0%**	**481798**	**100.0%**
Inner Regional				
English	2369	96.1%	143715	92.7%
Language Other Than English	65	2.6%	5703	3.7%
Not stated	32	1.3%	5695	3.7%
Total	**2466**	**100.0%**	**155113**	**100.0%**
Outer Regional				
English	986	95.8%	65134	90.9%
Language Other Than English	29	2.8%	3377	4.7%
Not stated	15	1.5%	3107	4.3%
Total	**1029**	**100.0%**	**71618**	**100.0%**
Remote/Very Remote				
English	149	97.6%	11017	83.4%
Language Other Than English	1	0.8%	1324	10.0%
Not stated	2	1.6%	873	6.6%
Total	**153**	**100.0%**	**13214**	**100.0%**
Australia				
English	9628	91.4%	583570	80.6%
Language Other Than English	733	7.0%	109495	15.1%
Not stated	171	1.6%	30704	4.2%
Total	**10532**	**100.0%**	**723769**	**100.0%**

Table 3-15 Language spoken at home, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
English	4160	84.7%	141219	73.7%
Language Other Than English	383	7.8%	33563	17.5%
Not stated	370	7.5%	16918	8.8%
Total	**4913**	**100.0%**	**191700**	**100.0%**
Inner Regional				
English	1363	88.3%	51560	86.6%
Language Other Than English	53	3.4%	2673	4.5%
Not stated	127	8.3%	5300	8.9%
Total	**1543**	**100.0%**	**59533**	**100.0%**

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Outer Regional				
English	560	87.8%	19731	86.0%
Language Other Than English	18	2.8%	1355	5.9%
Not stated	60	9.4%	1868	8.1%
Total	**638**	**100.0%**	**22954**	**100.0%**
Remote/Very Remote				
English	75	86.1%	2213	82.2%
Language Other Than English	4	4.5%	250	9.3%
Not stated	8	9.4%	228	8.5%
Total	**87**	**100.0%**	**2691**	**100.0%**
Australia				
English	6160	85.8%	214835	77.5%
Language Other Than English	458	6.4%	37853	13.7%
Not stated	565	7.9%	24341	8.8%
Total	**7184**	**100.0%**	**277029**	**100.0%**

Marital status (Table 3-16, Table 3-17, Table 3-18)

There are major differences between ALSWH and the census in how marital status is derived. The main difference is how 'de facto' is derived. In the ALSWH surveys it is asked directly, while in the census it is derived indirectly from the woman's relationship to person 1 on the census form. Due to this dependence on the ordering of persons on the census form, there is undercounting of 'de facto' in the census. In the 1946-51 and 1921-26 cohorts there is some under representation of women in the single categories, especially the widowed category of the 1921-26 cohort.

Table 3-16 Marital status, 1973-78 cohort

	ALSWH 1273-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Married	3122	51.0%	303782	50.7%
Defacto	1122	18.3%	86832	14.5%
Widowed	5	0.1%	1318	0.2%
Separated	132	2.2%	17178	2.9%
Divorced	115	1.9%	17876	3.0%
Never married	1589	26.0%	172429	28.8%
Not classified/not stated	31	0.5%	0	0.0%
Total	**6116**	**100.0%**	**599415**	**100.0%**
Inner Regional				
Married	950	58.5%	67724	52.6%
Defacto	282	17.4%	21610	16.8%

	ALSWH 1273-78 cohort		2006 Census	
	N	%	N	%
Widowed	4	0.2%	352	0.3%
Separated	45	2.8%	4528	3.5%
Divorced	40	2.4%	3664	2.8%
Never married	298	18.4%	30781	23.9%
Not classified/not stated	5	0.3%	0	0.0%
Total	**1624**	**100.0%**	**128659**	**100.0%**
Outer Regional				
Married	469	55.5%	33946	51.2%
Defacto	201	23.8%	12460	18.8%
Widowed	1	0.1%	193	0.3%
Separated	23	2.7%	2077	3.1%
Divorced	13	1.6%	1699	2.6%
Never married	138	16.3%	15908	24.0%
Not classified/not stated	1	0.1%	0	0.0%
Total	**845**	**100.0%**	**66283**	**100.0%**
Remote/Very Remote				
Married	133	61.7%	9449	48.6%
Defacto	49	22.6%	3847	19.8%
Widowed	0	0.0%	115	0.6%
Separated	5	2.5%	461	2.4%
Divorced	1	0.2%	313	1.6%
Never married	27	12.7%	5239	27.0%
Not classified/not stated	1	0.2%	0	0.0%
Total	**216**	**100.0%**	**19424**	**100.0%**
Australia				
Married	4788	52.5%	414901	51.0%
Defacto	1730	19.0%	124749	15.3%
Widowed	9	0.1%	1978	0.2%
Separated	208	2.3%	24244	3.0%
Divorced	173	1.9%	23552	2.9%
Never married	2174	23.8%	224357	27.6%
Not classified/not stated	42	0.5%	0	0.0%
Total	**9124**	**100.0%**	**813781**	**100.0%**

Table 3-17 Marital status, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Married	4657	69.1%	318838	66.2%
Defacto	368	5.5%	18107	3.8%
Widowed	316	4.7%	27743	5.8%
Separated	246	3.7%	19914	4.1%
Divorced	861	12.8%	72375	15.0%
Never married	247	3.7%	24818	5.2%
Not classified/not stated	45	0.7%		0.0%
Total	**6740**	**100.0%**	**481795**	**100.0%**
Inner Regional				
Married	1821	73.8%	108894	70.2%
Defacto	150	6.1%	7165	4.6%
Widowed	113	4.6%	8163	5.3%
Separated	85	3.5%	5666	3.7%
Divorced	214	8.7%	19282	12.4%
Never married	64	2.6%	5949	3.8%
Not classified/not stated	19	0.8%		0.0%
Total	**2466**	**100.0%**	**155119**	**100.0%**
Outer Regional				
Married	783	76.1%	51009	71.2%
Defacto	60	5.8%	3626	5.1%
Widowed	47	4.6%	4119	5.8%
Separated	32	3.1%	2511	3.5%
Divorced	78	7.6%	7915	11.1%
Never married	19	1.9%	2436	3.4%
Not classified/not stated	10	0.9%		0.0%
Total	**1029**	**100.0%**	**71616**	**100.0%**
Remote/Very Remote				
Married	114	74.2%	8829	66.8%
Defacto	9	5.8%	789	6.0%
Widowed	7	4.8%	1035	7.8%
Separated	2	1.1%	519	3.9%
Divorced	17	11.3%	1277	9.7%
Never married	4	2.4%	764	5.8%
Not classified/not stated	1	0.5%		0.0%
Total	**153**	**100.0%**	**13213**	**100.0%**
Australia				
Married	7459	70.8%	487570	67.6%
Defacto	599	5.7%	29687	4.1%
Widowed	489	4.6%	41060	5.7%
Separated	372	3.5%	28610	4.0%

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Divorced	1186	11.3%	100849	14.0%
Never married	340	3.2%	33967	4.7%
Not classified/not stated	87	0.8%		0.0%
Total	**10532**	**100.0%**	**721743**	**100.0%**

Table 3-18 Marital status, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
Married	1762	35.9%	53695	28.0%
Defacto	10	0.2%	590	0.3%
Widowed	2692	54.8%	118100	61.6%
Separated	31	0.6%	1691	0.9%
Divorced	210	4.3%	9386	4.9%
Never married	180	3.7%	8241	4.3%
Not classified/not stated	28	0.6%	0	0.0%
Total	**4913**	**100.0%**	**191703**	**100.0%**
Inner Regional				
Married	545	35.3%	17435	29.3%
Defacto	6	0.4%	211	0.4%
Widowed	869	56.3%	37106	62.3%
Separated	15	1.0%	439	0.7%
Divorced	57	3.7%	2269	3.8%
Never married	40	2.6%	2070	3.5%
Not classified/not stated	11	0.7%	0	0.0%
Total	**1543**	**100.0%**	**59530**	**100.0%**
Outer Regional				
Married	234	36.6%	6427	28.0%
Defacto	3	0.5%	80	0.3%
Widowed	365	57.2%	14869	64.8%
Separated	6	1.0%	180	0.8%
Divorced	17	2.7%	720	3.1%
Never married	9	1.5%	680	3.0%
Not classified/not stated	3	0.5%	0	0.0%
Total	**638**	**100.0%**	**22956**	**100.0%**
Remote/Very Remote				
Married	30	34.8%	742	27.6%
Defacto	0	0.6%	21	0.8%
Widowed	49	56.7%	1715	63.8%
Separated	1	0.9%	19	0.7%
Divorced	1	0.9%	81	3.0%

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Never married	4	4.5%	109	4.1%
Not classified/not stated	1	1.7%	0	0.0%
Total	**87**	**100.0%**	**2687**	**100.0%**
Australia				
Married	2572	35.8	78299	28.3
Defacto	19	0.3	902	0.3
Widowed	3977	55.4	171790	62.0
Separated	53	0.7	2329	0.8
Divorced	286	4.0	12456	4.5
Never married	233	3.2	11100	4.0
Not classified/not stated	44	0.6	0	0.0
Total	**7184**	**100.0**	**276876**	**100.0**

Single person households (Table 3-19, Table 3-20, Table 3-21)

Whether a woman usually lived alone was asked directly in the ALSWH surveys, while for the census it was derived from the questions regarding the woman's relationship to person 1. Lone person households were over-represented in the 1973-78 and 1921-26 cohorts, but more so in the latter.

Table 3-19 Single person households, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Lone person household	560	9.2%	46620	7.8%
Other households	5556	90.9%	544198	90.8%
Not stated		0.0%	8594	1.4%
Total	**6116**	**100.0%**	**599412**	**100.0%**
Inner Regional				
Lone person household	113	6.9%	7421	5.8%
Other households	1511	93.1%	119186	92.6%
Not stated		0.0%	2059	1.6%
Total	**1624**	**100.0%**	**128666**	**100.0%**
Outer Regional				
Lone person household	66	7.8%	3669	5.5%
Other households	780	92.2%	61174	92.3%
Not stated		0.0%	1432	2.2%
Total	**845**	**100.0%**	**66275**	**100.0%**
Remote/Very Remote				
Lone person household	12	5.6%	1064	5.5%
Other households	204	94.4%	17513	90.2%

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Not stated		0.0%	844	4.3%
Total	**216**	**100.0%**	**19421**	**100.0%**
Australia				
Lone person household	793	8.7%	59079	7.2%
Other households	8332	91.3%	743394	91.1%
Not stated		0.0%	13350	1.6%
Total	**9124**	**100.0%**	**815823**	**100.0%**

Table 3-20 Single person households, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Lone person household	1042	15.5%	70915	14.7%
Other households	5677	84.2%	403292	83.7%
Not stated	20	0.3%	7591	1.6%
Total	**6740**	**100.0%**	**481798**	**100.0%**
Inner Regional				
Lone person household	335	13.6%	22310	14.4%
Other households	2126	86.2%	129782	83.7%
Not stated	5	0.2%	3024	1.9%
Total	**2466**	**100.0%**	**155116**	**100.0%**
Outer Regional				
Lone person household	125	12.2%	9742	13.6%
Other households	902	87.7%	60297	84.2%
Not stated	2	0.2%	1583	2.2%
Total	**1029**	**100.0%**	**71622**	**100.0%**
Remote/Very Remote				
Lone person household	24	15.6%	1614	12.2%
Other households	129	84.2%	11023	83.4%
Not stated	0	0.3%	573	4.3%
Total	**153**	**100.0%**	**13210**	**100.0%**
Australia				
Lone person household	1555	14.8%	104871	14.5%
Other households	8941	84.9%	605970	83.7%
Not stated	36	0.3%	12931	1.8%
Total	**10532**	**100.0%**	**723772**	**100.0%**

Table 3-21 Single person households, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
Lone person household	2562	52.1%	81811	42.7%
Other households	2309	47.0%	83391	43.5%
Not stated	42	0.8%	26501	13.8%
Total	**4913**	**100.0%**	**191703**	**100.0%**
Inner Regional				
Lone person household	831	53.9%	26216	44.0%
Other households	691	44.8%	24576	41.3%
Not stated	21	1.4%	8739	14.7%
Total	**1543**	**100.0%**	**59531**	**100.0%**
Outer Regional				
Lone person household	339	53.2%	10251	44.7%
Other households	292	45.8%	9485	41.3%
Not stated	7	1.0%	3220	14.0%
Total	**638**	**100.0%**	**22956**	**100.0%**
Remote/Very Remote				
Lone person household	49	55.8%	1094	40.6%
Other households	38	44.2%	1236	45.9%
Not stated	0	0.0%	363	13.5%
Total	**87**	**100.0%**	**2693**	**100.0%**
Australia				
Lone person household	3783	52.7%	119385	43.1%
Other households	3332	46.4%	118771	42.9%
Not stated	69	1.0%	38872	14.0%
Total	**7184**	**100.0%**	**277028**	**100.0%**

Highest educational qualification (Table 3-22, Table 3-23, Table 3-24)

In the Census, education was inadequately described, particularly among the 1921-26 cohort. Census data comparable to the ALSWH surveys regarding highest educational qualification obtained was derived by combining data from two questions in the census on highest year of schooling attended and highest educational qualification obtained. Compared with the general population the ALSWH women tended to be better educated, particularly amongst the 1973-78 cohort.

Table 3-22 Highest educational qualification, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
No formal qualifications	37	0.6%	18142	3.0%
Year 10 or equivalent	292	4.8%	69138	11.5%
Year 12 or equivalent	786	12.9%	122204	20.4%
Certificate/ diploma	1539	25.2%	148189	24.7%
Bachelor degree	2253	36.8%	156883	26.2%
Higher degree	1190	19.5%	45358	7.6%
Not stated/inadequate description	18	0.3%	39505	6.6%
Total	**6116**	**100.0%**	**599419**	**100.0%**
Inner Regional				
No formal qualifications	20	1.2%	5694	4.4%
Year 10 or equivalent	184	11.4%	26670	20.7%
Year 12 or equivalent	297	18.3%	27980	21.7%
Certificate/ diploma	507	31.2%	36226	28.2%
Bachelor degree	425	26.2%	21385	16.6%
Higher degree	185	11.4%	4167	3.2%
Not stated/inadequate description	4	0.3%	6535	5.1%
Total	**1624**	**100.0%**	**128657**	**100.0%**
Outer Regional				
No formal qualifications	8	0.9%	2774	4.2%
Year 10 or equivalent	76	9.0%	13999	21.1%
Year 12 or equivalent	185	21.9%	15335	23.1%
Certificate/ diploma	241	28.5%	17213	26.0%
Bachelor degree	247	29.3%	10760	16.2%
Higher degree	87	10.3%	1855	2.8%
Not stated/inadequate description	1	0.1%	4345	6.6%
Total	**845**	**100.0%**	**66281**	**100.0%**
Remote/Very Remote				
No formal qualifications	2	0.9%	1990	10.2%
Year 10 or equivalent	18	8.1%	3995	20.6%
Year 12 or equivalent	45	21.0%	3905	20.1%
Certificate/ diploma	61	28.5%	4188	21.6%
Bachelor degree	54	25.2%	2839	14.6%
Higher degree	32	14.8%	553	2.8%
Not stated/inadequate description	3	1.5%	1948	10.0%
Total	**216**	**100.0%**	**19418**	**100.0%**

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Australia				
No formal qualifications	70	0.8%	28678	3.5%
Year 10 or equivalent	581	6.4%	114060	14.0%
Year 12 or equivalent	1329	14.6%	169749	20.8%
Certificate/ diploma	2387	26.2%	206263	25.3%
Bachelor degree	3134	34.3%	192425	23.6%
Higher degree	1590	17.4%	52086	6.4%
Not stated/inadequate description	33	0.4%	52564	6.4%
Total	**9124**	**100.0%**	**815825**	**100.0%**

Table 3-23 Highest educational qualification, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
No formal qualifications	925	13.7%	51554	10.7%
Year 10 or equivalent	1845	27.4%	144457	30.0%
Year 12 or equivalent	1200	17.8%	89605	18.6%
Certificate/ diploma	1373	20.4%	85974	17.8%
Bachelor degree	779	11.6%	49716	10.3%
Higher degree	552	8.2%	24562	5.1%
Not stated/inadequate description	67	1.0%	35928	7.5%
Total	**6740**	**100.0%**	**481796**	**100.0%**
Inner Regional				
No formal qualifications	397	16.1%	14842	9.6%
Year 10 or equivalent	809	32.8%	60158	38.8%
Year 12 or equivalent	371	15.0%	22880	14.8%
Certificate/ diploma	510	20.7%	28393	18.3%
Bachelor degree	249	10.1%	13177	8.5%
Higher degree	119	4.8%	5416	3.5%
Not stated/inadequate description	10	0.4%	10252	6.6%
Total	**2466**	**100.0%**	**155118**	**100.0%**
Outer Regional				
No formal qualifications	194	18.9%	7760	10.8%
Year 10 or equivalent	317	30.8%	28145	39.3%
Year 12 or equivalent	174	16.9%	10888	15.2%
Certificate/ diploma	212	20.6%	11882	16.6%
Bachelor degree	81	7.9%	5419	7.6%
Higher degree	44	4.3%	1960	2.7%
Not stated/inadequate description	8	0.7%	5565	7.8%
Total	**1029**	**100.0%**	**71619**	**100.0%**

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Remote/Very Remote				
No formal qualifications	27	17.7%	2189	16.6%
Year 10 or equivalent	52	34.1%	4495	34.0%
Year 12 or equivalent	25	16.5%	2032	15.4%
Certificate/ diploma	27	17.9%	1916	14.5%
Bachelor degree	10	6.6%	938	7.1%
Higher degree	7	4.7%	343	2.6%
Not stated/inadequate description	4	2.4%	1296	9.8%
Total	**153**	**100.0%**	**13209**	**100.0%**
Australia				
No formal qualifications	1576	15.0%	76518	10.6%
Year 10 or equivalent	3058	29.0%	237968	32.9%
Year 12 or equivalent	1790	17.0%	125733	17.4%
Certificate/ diploma	2153	20.4%	128539	17.8%
Bachelor degree	1130	10.7%	69394	9.6%
Higher degree	734	7.0%	32351	4.5%
Not stated/inadequate description	91	0.9%	53266	7.4%
Total	**10532**	**100.0%**	**723769**	**100.0%**

Table 3-24 Highest educational qualification, 1921-26 cohort

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Major Cities				
No formal qualifications	1284	26.1%	52181	27.2%
Year 10 or equivalent	1809	36.8%	46753	24.4%
Year 12 or equivalent	711	14.5%	27750	14.5%
Certificate/ diploma	643	13.1%	12215	6.4%
Bachelor degree	196	4.0%	5150	2.7%
Higher degree	82	1.7%	1086	0.6%
Not stated/inadequate description	189	3.8%	46568	24.3%
Total	**4913**	**100.0%**	**191703**	**100.0%**
Inner Regional				
No formal qualifications	460	29.8%	18207	30.6%
Year 10 or equivalent	605	39.2%	14262	24.0%
Year 12 or equivalent	176	11.4%	7030	11.8%
Certificate/ diploma	178	11.5%	3222	5.4%
Bachelor degree	50	3.2%	1344	2.3%
Higher degree	9	0.6%	212	0.4%
Not stated/inadequate description	66	4.3%	15255	25.6%
Total	**1543**	**100.0%**	**59532**	**100.0%**

	ALSWH 1921-26 cohort		2006 Census	
	N	%	N	%
Outer Regional				
No formal qualifications	199	31.1%	7957	34.7%
Year 10 or equivalent	242	37.9%	5140	22.4%
Year 12 or equivalent	70	11.0%	2542	11.1%
Certificate/ diploma	68	10.7%	1039	4.5%
Bachelor degree	16	2.5%	517	2.3%
Higher degree	3	0.5%	50	0.2%
Not stated/inadequate description	40	6.2%	5714	24.9%
Total	**638**	**100.0%**	**22959**	**100.0%**
Remote/Very Remote				
No formal qualifications	34	39.1%	1094	40.6%
Year 10 or equivalent	29	33.7%	515	19.1%
Year 12 or equivalent	9	10.5%	312	11.6%
Certificate/ diploma	8	9.6%	119	4.4%
Bachelor degree	0	0.0%	49	1.8%
Higher degree	0	0.0%	12	0.4%
Not stated/inadequate description	6	7.1%	592	22.0%
Total	**87**	**100.0%**	**2693**	**100.0%**
Australia				
No formal qualifications	1977	27.5%	79470	28.7%
Year 10 or equivalent	2687	37.4%	66697	24.1%
Year 12 or equivalent	966	13.4%	37653	13.6%
Certificate/ diploma	898	12.5%	16604	6.0%
Bachelor degree	262	3.6%	7063	2.5%
Higher degree	94	1.3%	1360	0.5%
Not stated/inadequate description	301	4.2%	68182	24.6%
Total	**7184**	**100.0%**	**277029**	**100.0%**

Labour force status (Table 3-25 Table 3-26)

The questions used to derive labour force status in ALSWH and the census are quite different. Other than the wording, the main difference was the time frame used. In the census it was 'last week' for the question relating to employment and four weeks for the unemployment question, while for ALSWH the corresponding periods were a 'usual week' and open ended for the unemployment question. This may have resulted in quite different responses. In both the 1973-78 and 1946-51 cohorts women were more likely to be in employment than the corresponding women in the general population.

Table 3-25 Labour force status, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Employed	5091	83.2%	398707	66.5%
Unemployed	127	2.1%	19210	3.2%
Not in the labour force	893	14.6%	146498	24.4%
Not stated	6	0.1%	35004	5.8%
Total	**6116**	**100.0%**	**599419**	**100.0%**
Inner Regional				
Employed	1223	75.3%	78010	60.6%
Unemployed	70	4.3%	5376	4.2%
Not in the labour force	327	20.1%	39982	31.1%
Not stated	3	0.2%	5288	4.1%
Total	**1624**	**100.0%**	**128656**	**100.0%**
Outer Regional				
Employed	684	81.0%	40201	60.7%
Unemployed	30	3.5%	2418	3.6%
Not in the labour force	129	15.3%	19973	30.1%
Not stated	2	0.2%	3687	5.6%
Total	**845**	**100.0%**	**66279**	**100.0%**
Remote/Very Remote				
Employed	176	81.6%	11041	56.8%
Unemployed	6	2.6%	580	3.0%
Not in the labour force	34	15.6%	6042	31.1%
Not stated	1	0.2%	1759	9.1%
Total	**216**	**100.0%**	**19422**	**100.0%**
Australia				
Employed	7458	81.7%	528905	64.8%
Unemployed	237	2.6%	27765	3.4%
Not in the labour force	1414	15.5%	213216	26.1%
Not stated	16	0.2%	45940	5.6%
Total	**9124**	**100.0%**	**815826**	**100.0%**

Table 3-26 Labour force status, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Employed	4579	67.9%	254671	52.9%
Unemployed	59	0.9%	8243	1.7%
Not in the labour force	2058	30.5%	194678	40.4%
Not stated	44	0.7%	24203	5.0%
Total	**6740**	**100.0%**	**481795**	**100.0%**
Inner Regional				
Employed	1552	63.0%	75604	48.7%
Unemployed	27	1.1%	3223	2.1%
Not in the labour force	874	35.4%	69741	45.0%
Not stated	12	0.5%	6553	4.2%
Total	**2466**	**100.0%**	**155121**	**100.0%**
Outer Regional				
Employed	678	65.9%	36794	51.4%
Unemployed	8	0.8%	1471	2.1%
Not in the labour force	333	32.3%	29785	41.6%
Not stated	10	1.0%	3568	5.0%
Total	**1029**	**100.0%**	**71618**	**100.0%**
Remote/Very Remote				
Employed	112	72.9%	7426	56.2%
Unemployed	1	0.5%	192	1.5%
Not in the labour force	40	26.1%	4586	34.7%
Not stated	1	0.5%	1006	7.6%
Total	**153**	**100.0%**	**13210**	**100.0%**
Australia				
Employed	7004	66.5%	374933	51.8%
Unemployed	99	0.9%	13212	1.8%
Not in the labour force	3351	31.8%	300123	41.5%
Not stated	77	0.7%	35499	4.9%
Total	**10532**	**100.0%**	**723767**	**100.0%**

Occupation (Table 3-27, Table 3-28)

In ALSWH the woman were asked directly (with examples) which occupational group they belonged to, while in the census, respondents were asked their actual occupation as well as the task or duties they performed. On the basis of their responses to these two questions they were categorised into the main occupational groups. This difference may result in some misclassification of unknown direction or magnitude. In general women with lower status occupations are under-represented in all ALSWH cohorts, especially in the younger cohort.

Table 3-27 Occupation, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Managers and Administrators	589	11.4%	26934	6.8%
Professionals	2256	43.5%	125837	31.6%
Associate Professionals	474	9.1%	54672	13.7%
Tradespersons and Related Workers	114	2.2%	10211	2.6%
Advanced Clerical and Service Workers	691	13.3%	25054	6.3%
Intermediate Clerical, Sales and Service Workers	627	12.1%	99334	24.9%
Intermediate Production and Transport Workers	19	0.4%	6933	1.7%
Elementary Clerical, Sales and Service Workers	206	4.0%	30621	7.7%
Labourers and Related Workers	101	1.9%	13355	3.3%
Inadequately described/not stated	109	2.1%	5764	1.4%
Total	**5185**	**100.0%**	**398715**	**100.0%**
Inner Regional				
Managers and Administrators	92	7.6%	3430	4.4%
Professionals	424	35.1%	17964	23.0%
Associate Professionals	74	6.1%	11264	14.4%
Tradespersons and Related Workers	42	3.4%	3070	3.9%
Advanced Clerical and Service Workers	155	12.9%	4630	5.9%
Intermediate Clerical, Sales and Service Workers	224	18.5%	21206	27.2%
Intermediate Production and Transport Workers	12	1.0%	1914	2.5%
Elementary Clerical, Sales and Service Workers	82	6.8%	8508	10.9%
Labourers and Related Workers	67	5.6%	5100	6.5%
Inadequately described/not stated	35	2.9%	919	1.2%
Total	**1207**	**100.0%**	**78005**	**100.0%**
Outer Regional				
Managers and Administrators	55	8.4%	2331	5.8%
Professionals	233	35.6%	8998	22.4%
Associate Professionals	55	8.4%	5772	14.4%
Tradespersons and Related Workers	16	2.5%	1525	3.8%
Advanced Clerical and Service Workers	89	13.6%	2266	5.6%
Intermediate Clerical, Sales and Service Workers	98	15.1%	10330	25.7%
Intermediate Production and Transport Workers	3	0.5%	1058	2.6%
Elementary Clerical, Sales and Service Workers	46	7.1%	4401	10.9%
Labourers and Related Workers	42	6.4%	2992	7.4%
Inadequately described/not stated	15	2.3%	525	1.3%
Total	**653**	**100.0%**	**40198**	**100.0%**
Remote/Very Remote				
Managers and Administrators	10	5.9%	884	8.0%
Professionals	67	40.1%	2440	22.1%
Associate Professionals	8	4.8%	1543	14.0%
Tradespersons and Related Workers	3	2.0%	377	3.4%
Advanced Clerical and Service Workers	23	13.7%	497	4.5%

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Intermediate Clerical, Sales and Service Workers	25	15.0%	2653	24.0%
Intermediate Production and Transport Workers	2	1.3%	340	3.1%
Elementary Clerical, Sales and Service Workers	8	5.0%	1007	9.1%
Labourers and Related Workers	16	9.4%	1058	9.6%
Inadequately described/not stated	4	2.6%	245	2.2%
Total	**168**	**100.0%**	**11044**	**100.0%**
Australia				
Managers and Administrators	782	10.4%	33624	6.4%
Professionals	3160	42.1%	155536	29.4%
Associate Professionals	621	8.3%	73375	13.9%
Tradespersons and Related Workers	179	2.4%	15216	2.9%
Advanced Clerical and Service Workers	979	13.0%	32492	6.1%
Intermediate Clerical, Sales and Service Workers	996	13.3%	133721	25.3%
Intermediate Production and Transport Workers	37	0.5%	10275	1.9%
Elementary Clerical, Sales and Service Workers	348	4.6%	44615	8.4%
Labourers and Related Workers	230	3.1%	22586	4.3%
Inadequately described/not stated	173	2.3%	7468	1.4%
Total	**7505**	**100.0%**	**528908**	**100.0%**

Table 3-28 Occupation, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Managers and Administrators	346	7.6%	14412	5.7%
Professionals	1276	27.9%	58724	23.1%
Associate Professionals	465	10.2%	29317	11.5%
Tradespersons and Related Workers	137	3.0%	5756	2.3%
Advanced Clerical and Service Workers	487	10.7%	21155	8.3%
Intermediate Clerical, Sales and Service Workers	726	15.9%	68963	27.1%
Intermediate Production and Transport Workers	20	0.4%	6477	2.5%
Elementary Clerical, Sales and Service Workers	287	6.3%	26569	10.4%
Labourers and Related Workers	248	5.4%	19112	7.5%
Inadequately described/not stated	580	12.7%	4185	1.6%
Total	**4573**	**100.0%**	**254670**	**100.0%**
Inner Regional				
Managers and Administrators	145	9.5%	6324	8.4%
Professionals	404	26.5%	16233	21.5%
Associate Professionals	142	9.3%	9705	12.8%
Tradespersons and Related Workers	53	3.5%	2189	2.9%
Advanced Clerical and Service Workers	90	5.9%	5175	6.8%

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Intermediate Clerical, Sales and Service Workers	235	15.4%	18002	23.8%
Intermediate Production and Transport Workers	14	0.9%	1621	2.1%
Elementary Clerical, Sales and Service Workers	108	7.1%	7879	10.4%
Labourers and Related Workers	115	7.5%	7254	9.6%
Inadequately described/not stated	219	14.4%	1216	1.6%
Total	**1524**	**100.0%**	**75598**	**100.0%**
Outer Regional				
Managers and Administrators	94	14.3%	5536	15.0%
Professionals	139	21.1%	6419	17.4%
Associate Professionals	55	8.3%	4584	12.5%
Tradespersons and Related Workers	22	3.3%	1181	3.2%
Advanced Clerical and Service Workers	34	5.2%	2133	5.8%
Intermediate Clerical, Sales and Service Workers	109	16.4%	7825	21.3%
Intermediate Production and Transport Workers	7	1.0%	836	2.3%
Elementary Clerical, Sales and Service Workers	36	5.4%	3455	9.4%
Labourers and Related Workers	63	9.5%	4170	11.3%
Inadequately described/not stated	102	15.5%	665	1.8%
Total	**660**	**100.0%**	**36804**	**100.0%**
Remote/Very Remote				
Managers and Administrators	16	14.9%	1304	17.6%
Professionals	25	22.8%	1222	16.5%
Associate Professionals	9	8.7%	993	13.4%
Tradespersons and Related Workers	4	4.1%	275	3.7%
Advanced Clerical and Service Workers	8	7.0%	367	4.9%
Intermediate Clerical, Sales and Service Workers	14	12.7%	1308	17.6%
Intermediate Production and Transport Workers	0	0.0%	199	2.7%
Elementary Clerical, Sales and Service Workers	7	6.6%	661	8.9%
Labourers and Related Workers	9	8.6%	937	12.6%
Inadequately described/not stated	16	14.7%	151	2.0%
Total	**108**	**100.0%**	**7417**	**100.0%**
Australia				
Managers and Administrators	612	8.8%	27587	7.4%
Professionals	1862	26.8%	82693	22.1%
Associate Professionals	681	9.8%	44629	11.9%
Tradespersons and Related Workers	220	3.2%	9412	2.5%
Advanced Clerical and Service Workers	625	9.0%	28848	7.7%
Intermediate Clerical, Sales and Service Workers	1089	15.7%	96207	25.7%
Intermediate Production and Transport Workers	41	0.6%	9143	2.4%
Elementary Clerical, Sales and Service Workers	444	6.4%	38614	10.3%
Labourers and Related Workers	445	6.4%	31566	8.4%
Inadequately described/not stated	940	13.5%	6229	1.7%
Total	**6960**	**100.0%**	**374928**	**100.0%**

Hours of work (Table 3-29, Table 3-30)

Hours worked in the last week was asked directly in the census, while for ALSWH, respondents were asked to choose from a range of values for a usual week. As a consequence, it is possible for the census respondents to enter 'zero' hours (last week was not a usual week). Between five and six per cent of women responded with 'zero' hours in the census. As well, the ALSWH variable is derived from the sum of four separate questions on type of work (fulltime, part-time, casual and unpaid) which would tend to inflate the reported total hours. The comparison of the ALSWH and census women tends to support this, in that the ALSWH women consistently report higher numbers of hours worked.

Table 3-29 Hours of work, 1973-78 cohort

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Major Cities				
Hours worked 0			23176	5.8%
Hours worked 1-15	571	11.2%	42144	10.6%
Hours worked 16-24	512	10.1%	43921	11.0%
Hours worked 25-34	489	9.6%	41430	10.4%
Hours worked 35-40	1636	32.1%	152912	38.4%
Hours worked 41-48	1186	23.3%	44562	11.2%
Hours worked 49+	697	13.7%	43468	10.9%
Not stated	6	0.1%	7101	1.8%
Total	**5096**	**100.0%**	**398714**	**100.0%**
Inner Regional				
Hours worked 0			4831	6.2%
Hours worked 1-15	231	18.8%	13343	17.1%
Hours worked 16-24	172	14.0%	12252	15.7%
Hours worked 25-34	171	14.0%	11010	14.1%
Hours worked 35-40	316	25.8%	23078	29.6%
Hours worked 41-48	189	15.4%	5982	7.7%
Hours worked 49+	144	11.7%	5949	7.6%
Not stated	3	0.3%	1565	2.0%
Total	**1226**	**100.0%**	**78010**	**100.0%**
Outer Regional				
Hours worked 0			2403	6.0%
Hours worked 1-15	122	17.7%	6409	15.9%
Hours worked 16-24	99	14.5%	5535	13.8%
Hours worked 25-34	71	10.3%	5504	13.7%
Hours worked 35-40	181	26.4%	12100	30.1%
Hours worked 41-48	111	16.1%	3323	8.3%
Hours worked 49+	100	14.6%	4030	10.0%
Not stated	2	0.3%	894	2.2%
Total	**686**	**100.0%**	**40198**	**100.0%**
Remote/Very Remote				
Hours worked 0			606	5.5%
Hours worked 1-15	34	19.2%	1598	14.5%

	ALSWH 1973-78 cohort		2006 Census	
	N	%	N	%
Hours worked 16-24	23	13.1%	1456	13.2%
Hours worked 25-34	24	13.7%	1379	12.5%
Hours worked 35-40	36	20.2%	3070	27.8%
Hours worked 41-48	25	14.3%	929	8.4%
Hours worked 49+	34	19.2%	1634	14.8%
Not stated	1	0.3%	364	3.3%
Total	**177**	**100.0%**	**11036**	**100.0%**
Australia				
Hours worked 0			31076	5.9%
Hours worked 1-15	975	13.0%	63579	12.0%
Hours worked 16-24	832	11.1%	63252	12.0%
Hours worked 25-34	784	10.5%	59410	11.2%
Hours worked 35-40	2243	30.0%	191510	36.2%
Hours worked 41-48	1588	21.2%	54913	10.4%
Hours worked 49+	1036	13.9%	55226	10.4%
Not stated	16	0.2%	9948	1.9%
Total	**7474**	**100.0%**	**528914**	**100.0%**

Table 3-30 Hours of work, 1946-51 cohort

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Major Cities				
Hours worked 0			11658	4.6%
Hours worked 1-15	779	17.1%	32920	12.9%
Hours worked 16-24	755	16.5%	38063	14.9%
Hours worked 25-34	765	16.8%	42204	16.6%
Hours worked 35-40	1261	27.6%	83729	32.9%
Hours worked 41-48	532	11.7%	17727	7.0%
Hours worked 49+	424	9.3%	23137	9.1%
Not stated	48	1.1%	5234	2.1%
Total	**4564**	**100.0%**	**254672**	**100.0%**
Inner Regional				
Hours worked 0			4171	5.5%
Hours worked 1-15	302	18.7%	12166	16.1%
Hours worked 16-24	334	20.7%	12084	16.0%
Hours worked 25-34	291	18.1%	12769	16.9%
Hours worked 35-40	358	22.2%	19919	26.3%
Hours worked 41-48	136	8.4%	4404	5.8%
Hours worked 49+	175	10.9%	8502	11.2%

	ALSWH 1946-51 cohort		2006 Census	
	N	%	N	%
Not stated	15	0.9%	1582	2.1%
Total	**1611**	**100.0%**	**75597**	**100.0%**
Outer Regional				
Hours worked 0			2054	5.6%
Hours worked 1-15	153	20.3%	5489	14.9%
Hours worked 16-24	129	17.1%	5175	14.1%
Hours worked 25-34	118	15.7%	5845	15.9%
Hours worked 35-40	148	19.7%	9325	25.3%
Hours worked 41-48	79	10.5%	2332	6.3%
Hours worked 49+	114	15.1%	5662	15.4%
Not stated	13	1.7%	920	2.5%
Total	**753**	**100.0%**	**36802**	**100.0%**
Remote/Very Remote				
Hours worked 0			403	5.4%
Hours worked 1-15	23	16.7%	949	12.8%
Hours worked 16-24	26	18.8%	912	12.3%
Hours worked 25-34	24	17.4%	924	12.4%
Hours worked 35-40	27	19.6%	1866	25.1%
Hours worked 41-48	14	10.1%	539	7.3%
Hours worked 49+	23	16.7%	1616	21.8%
Not stated	2	1.4%	220	3.0%
Total	**138**	**100.0%**	**7429**	**100.0%**
Australia				
Hours worked 0			18323	4.9%
Hours worked 1-15	1258	17.8%	51575	13.8%
Hours worked 16-24	1247	17.6%	56280	15.0%
Hours worked 25-34	1198	16.9%	61794	16.5%
Hours worked 35-40	1798	25.4%	114976	30.7%
Hours worked 41-48	765	10.8%	25042	6.7%
Hours worked 49+	738	10.4%	38977	10.4%
Not stated	77	1.1%	7964	2.1%
Total	**7082**	**100.0%**	**374931**	**100.0%**

National Health Survey 2004-2005

This section compares selected health related behaviours and indicators from the 2004/2005 National Health Survey with the corresponding data from the ALSWH surveys at the fourth survey for all cohorts. When considering these comparisons, it is important to recognise that the two surveys are conducted differently. The NHS is collected by trained interviewers in face-to-face interviews, while the ALSWH surveys are collected by postal survey. This difference may alter the way some respondents answer the questions, particularly those about health related behaviours. There are also differences in the way some questions were asked in the two surveys. Self-rated health, height and weight were all asked in almost exactly the same way in both surveys, while the other questions were

asked in some cases quite differently. In the case of exercise, the questions were the same, but the period covered was two weeks in the NHS and one week in ALSWH. The questions regarding smoking were similar although the derived variable for smoking status was different for each survey, requiring that it be collapsed into three categories: Current smoker, Ex-smoker, and Never smoked. The alcohol questions in the two surveys were quite different. In the ALSWH, usual amount and frequency of alcohol consumed was asked, while in the NHS only alcohol consumed in the last week was recorded, as well as how long ago they last consumed alcohol. The categories used by the NHS for low, medium and high risk match the ALSWH categories, but the other groups were estimated by combining 'never consumed alcohol' with 'consumed alcohol 12 months or more ago' (non-drinker), and equating 'consumed alcohol 1 week to less than 12 months ago' to 'rarely drinks'.

The comparisons show that the ALSWH women tend to report 'Very Good' or 'Good' self-rated health more often than the NHS respondents (Table 3-31, Table 3-32, Table 3-33). For the 1921-26 cohort and to a degree the 1946-51 cohort, those reporting 'Fair' or 'Poor' health are under-represented in the ALSWH data. For BMI, there was very little difference between the two surveys for all cohorts. Amongst the 1973-78 cohort there were less 'current smokers' and more 'never smokers' than for the corresponding NHS women, while in the 1946-51 cohort there was little difference between the surveys. In both the 1973-78 and 1946-51 cohorts there were more 'risky' and 'high risk' drinkers in the NHS and fewer 'low risk' drinkers compared with the ALSWH women. The ALSWH women from all cohorts appear to have reported higher levels of physical activity than those in the NHS - this difference is particularly evident at the two extremes of activity.

Table 3-31 Selected health behaviours, 1973-78 cohort

	ALSWH 1973-78 cohort		2004/05 NHS	
	N	%	N	%
Self Rated Health				
Excellent	1508	17%	231762	27%
Very good	3974	44%	337285	40%
Good	2893	32%	219946	26%
Fair	639	7%	52355	6%
Poor	99	1%	10765	1%
NS	12	0%	0	0%
Total	**9124**	**100%**	**852114**	**100%**
BMI				
Underweight	329	4%	37045	5%
Healthy weight	4989	58%	423336	54%
Overweight	1957	23%	206229	26%
Obese	1362	16%	112017	14%
NS	487	5%	73485	9%
Total	**9124**	**100%**	**852114**	**100%**
Smoking				
Never Smoked	5326	59%	417341	49%
Ex-smoker	2028	22%	198584	23%
Current smoker	1724	19%	236188	28%
NS	46	1%	0	0%
Total	**9124**	**100%**	**852114**	**100%**

	ALSWH 1973-78 cohort		2004/05 NHS	
	N	%	N	%
Alcohol				
Low risk drinker	5585	62%	377798	45%
Non-drinker	915	10%	138250	16%
rarely drinks	2238	25%	236594	28%
Risky drinker	304	3%	67004	8%
High risk drinker	39	0%	26814	3%
NS	44	0%	5653	1%
Total	**9124**	**100%**	**852114**	**100%**
Exercise				
Sedentary	941	11%	230326	27%
Low	3865	43%	353191	41%
Moderate	2667	30%	215792	25%
High	1422	16%	52652	6%
NS	230	3%	152	0%
Total	**9124**	**100%**	**852114**	**100%**

Table 3-32 Selected health behaviours, 1946-51 cohort

	ALSWH 1946-51 cohort		2004/05 NHS	
	N	%	N	%
Self Rated Health				
Excellent	1227	12%	126458	17%
Very good	3868	36%	236857	32%
Good	4091	38%	217794	30%
Fair	1294	12%	99517	14%
Poor	154	1%	52845	7%
NS	80	1%	0	0%
Total	**10716**	**100%**	**733471**	**100%**
BMI				
Underweight	113	1%	9826	2%
Healthy weight	4107	41%	288037	44%
Overweight	3390	34%	214457	33%
Obese	2429	24%	141410	22%
NS	677	6%	79743	11%
Total	**10716**	**100%**	**733471**	**100%**
Smoking				
Never Smoked	6321	59%	410914	56%
Ex-smoker	2894	27%	214501	29%
Current smoker	1444	14%	108057	15%

	ALSWH 1946-51 cohort		2004/05 NHS	
	N	%	N	%
NS	56	1%	0	0%
Total	**10716**	**100%**	**733471**	**100%**
Alcohol				
Low risk drinker	5879	56%	324004	45%
Non-drinker	1513	14%	172606	24%
rarely drinks	2479	23%	128828	18%
Risky drinker	617	6%	74015	10%
High risk drinker	101	1%	27079	4%
NS	127	1%	6938	1%
Total	**10716**	**100%**	**733471**	**100%**
Exercise				
Sedentary	1554	15%	227934	31%
Low	3315	33%	285640	39%
Moderate	3843	38%	201490	27%
High	1337	13%	18408	3%
NS	667	6%	0	0%
Total	**10715**	**100%**	**733471**	**100%**

Table 3-33 Selected health behaviours, 1921-26 cohort

	ALSWH 1921-26 cohort		2004/05 NHS	
	N	%	N	%
Self Rated Health				
Excellent	239	3%	19488	7%
Very good	1506	21%	70361	26%
Good	3044	43%	81474	30%
Fair	2024	28%	66320	24%
Poor	308	4%	36260	13%
NS	44	1%	0	0%
Total	**7164**	**100%**	**273903**	**100%**
BMI				
Underweight	275	4%	16074	7%
Healthy weight	3150	50%	121797	53%
Overweight	2069	33%	67002	29%
Obese	855	13%	23204	10%
NS	815	11%	45827	17%
Total	**7164**	**100%**	**273903**	**100%**
Exercise				
Sedentary	2820	43%	165450	60%

	ALSWH 1921-26 cohort		2004/05 NHS	
	N	%	N	%
Low	1886	29%	83587	31%
Moderate	1515	23%	24439	9%
High	328	5%	427	0%
NS	615	9%	0	0%
Total	**7165**	**100%**	**273903**	**100%**

Discussion

The current analysis largely confirms the findings of the previous comparisons to the 1996 and 2001 censuses. As was found previously, participants in the ALSWH are more likely to be married, Australian born, have higher education, to be employed, work longer hours and have a higher status occupation than women of the same age in the general population. The inclusion of comparisons to the NHS has however added another dimension to the current analysis. Women who participated in the ALSWH in general had more favourable health related behaviours and status than those in the NHS. This finding is not unexpected, given that the ALSWH women, although initially selected at random, participated voluntarily in the study. This healthy volunteer effect has been previously observed in similar longitudinal studies (Gordon et al, 1959; Linsted et al, 1996).

It must also be recognised that some of the observed differences are possibly due to differences in the questions asked, and how the three data sets were collected. However, to what degree these factors influenced the findings can be only speculative.

Recommendations

The fact that women in the ALSWH differ from the general Australian population for both their socio-economic profile, and their health behaviours and status, needs to be recognised by all those analysing and interpreting the results of the study. A summary statement of the findings of this and the previous comparisons should be included in all published research using ALSWH data. Also a section should be added to the 'Notes for collaborators' on the ALSWH website summarising these findings and their significance.

3.2.4 References

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4. MAINTENANCE OF COHORTS

Maintenance strategies

Cohort maintenance and tracking of 'return-to-sender' mail continues according to the strategies outlined in previous reports. The office team continues to track all women who responded to Survey 1 in 1996, and who are not known to have died or withdrawn from the project since then. This includes women who did not respond to Survey 2, Survey 3, Survey 4 or Survey 5. Participants for whom we have no current contact details remain in the tracking system unless they are positively identified as deceased, withdrawn, permanently emigrated, or otherwise ineligible or unwilling to participate. Secondary contacts, electoral rolls, and electronic white pages continue to be the main sources of information. Increasingly we are finding email addresses and mobile phone numbers to be useful, especially among the 1973-78 cohort of women. While in previous years, email addresses and mobile phone numbers seemed to be fairly short-lived and unstable, it now appears that individuals are likely to keep these for some years.

4.1 National Death Index

The National Death Index is used on an annual basis to identify women who are recorded as being deceased. This not only adds to information provided to us by family members, but also provides administrative data on causes of death. A list of 52,213 participants' details, including unconfirmed deceased participants and participants who have withdrawn from the project, was sent to AIHW in November 2008 for matching against the National Death Index (NDI). Where the maiden name for a participant exists, a second record for the participant was included in the list, substituting the surname with the maiden name. A list of 10,331 matches for 5420 participants was returned by AIHW in January 2009 for clerical review.

The records were coded according to the closeness of the match of the ALSWH project date of birth with the NDI date of birth, and the closeness of the match of the project surname, first name and middle name with those recorded on the NDI. Those with exactly matching dates of birth and all names were taken as deceased (404 records), while combinations of close date of birth matches and close name matches were selected for checking. From the records checked, a further 75 deceased matches were identified, and in cases where there was any doubt that the deceased person was one of the ALSWH participants, the match was rejected. Each match accepted was checked to see if they were a ALSWH known deceased participant, or a new deceased participant. Of the 479 matches identified, 187 deaths ALSWH knew about, 266 were new notifications and 26 were notification of deaths of participants who had withdrawn. The summary of results is shown in Table 4-1.

Table 4-1 Summary of National Death Index matching results

Confirmed deceased	187
New deceased	266
Withdrawn deceased	26
Doubtful match	338
Duplicate deceased record	492
Not checked	9022
TOTAL	10,331

The new deceased details were added to the table of deceased participants and the table recording the details of withdrawn and subsequently deceased participants in the ALSWH database. There were 3350 deceased participants after matching and 58 (1.7%) of these have never been confirmed with the NDI. 45 of the unconfirmed deaths occurred before 1st January 2007 and 13 after. This compares with last year's figures of a total number of 2946 deceased participants and 48 (1.6%) deaths unconfirmed with the NDI (See Figure 4-1 and Figure 4-2). There were 4858 withdrawn participants at the time of matching and of these 758 (16%) have been identified from the NDI

matching as being deceased. The next round of matching of the women in our project to the NDI will commence in November 2009.

Figure 4-1 Numbers of deceased women identified by the year of NDI matching

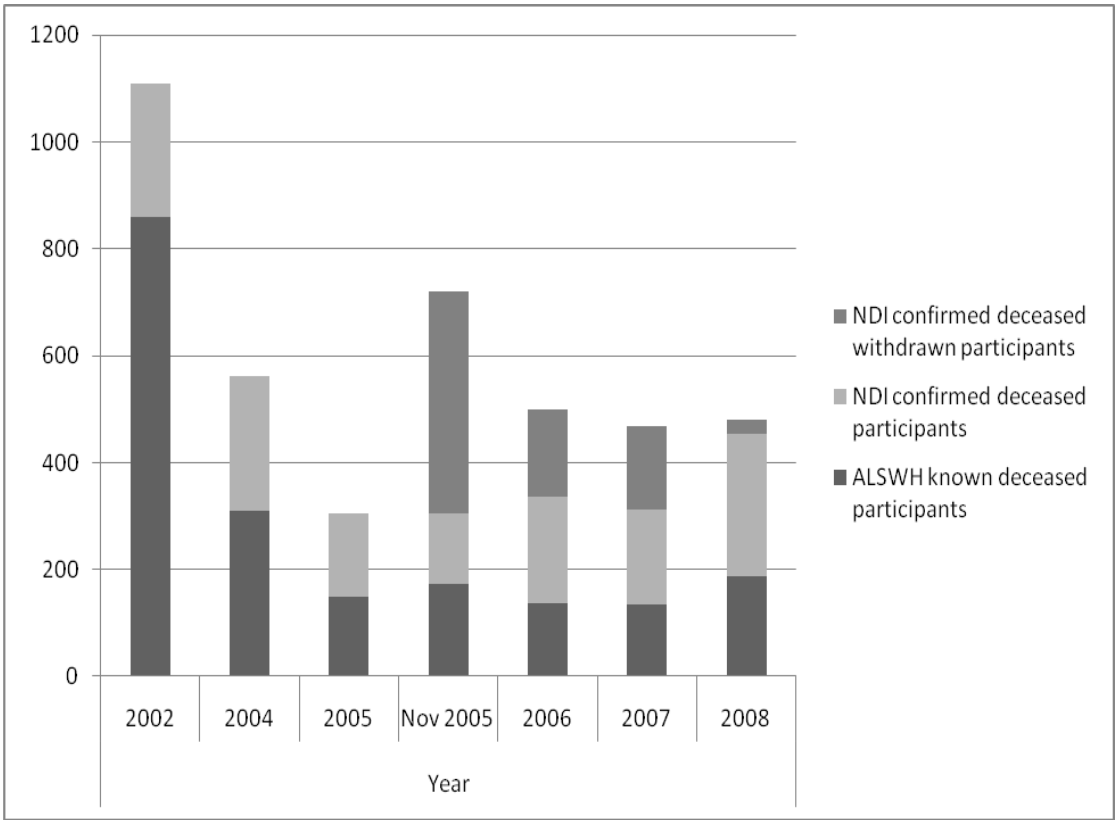
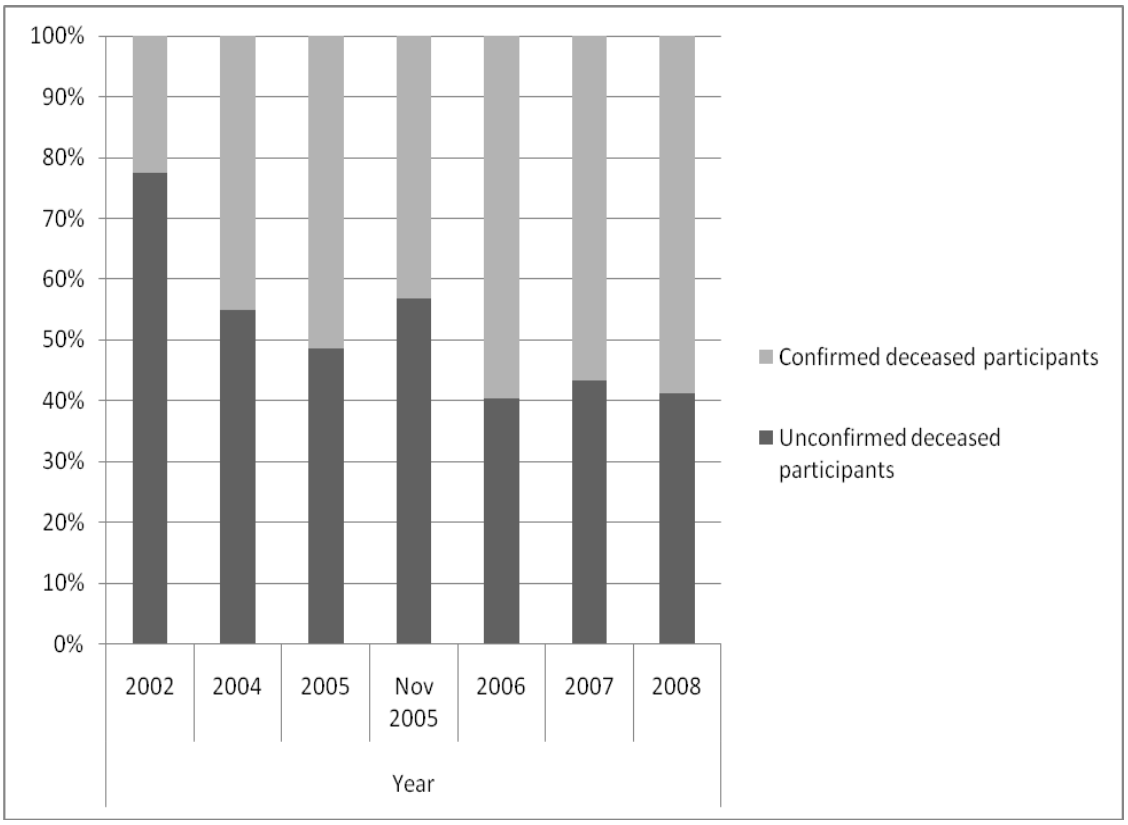


Figure 4-2 Comparison of the percentages of ALSWH known and NDI notified deaths by the year of NDI matching



4.2 Cause of Death Codes

Of the 4109 deaths confirmed with NDI over the years (including participants who have withdrawn) cause of death (COD) codes are available for 3191. Of the 918 deaths for which we have no COD information, all except 9 deaths occurred in the last two years. COD codes for these 918 should become available within the next two years as the availability of COD codes lag behind the registration of deaths by approximately 2 years.

Table 4-2 Confirmed deaths with and without COD codes by year of death

	Year of death				
	Before 2006	2006	2007	2008	**Total**
No COD Code	0	9	462	447	918
COD Codes	2744	447	0	0	3191
Deceased	2744	456	462	447	4109

There can be up to 19 causes of death. The first cause of death is the underlying cause of death. All others are additional causes of death. Multiple cause of death coding was used from 1997 onwards.

The codes for causes of death depend on when the person died and when their record was placed on the NDI. Those deaths that were registered in or before 1996 are recorded in ICD-9, those registered in 1997 and 1998 are a combination of ICD-9 and ICD-10 and those registered in 1999 and onwards are recorded in ICD-10.

4.3 Update of sample and response rates

4.3.1 Survey 1, 1996

Information provided in early reports has been repeated and updated here for completeness. The numbers provided in the following tables are up to date as at October 2009.

More than 40,000 women responded to Survey 1 of the main cohorts in 1996. Because of uncertainties about the accuracy of the Medicare database (which was used as the sampling frame for the stratified random samples), response rates cannot be exactly specified. We have estimated that 41-42%, 53-56%, and 37-40% of the 1973-78 cohort, the 1946-51 cohort, and the 1921-26 cohort of women, respectively, responded to the initial invitation to participate. Confidentiality restrictions meant that the names of the selected women were unknown to researchers. Usual methods of encouraging participation such as by telephone could not be used. The response rates were pleasing given that the invitation included a request for women to participate in the longitudinal study for up to 20 years.

In light of these response rates, it is important to assess any response bias so that the generalisability of the study findings can be determined. A comparison of the demographic characteristics of respondents and non-respondents was not possible because privacy guidelines prevented the researchers from having any information about women who were selected to receive an invitation but did not respond. We were able, however, to obtain aggregate data for non-respondents' use of health services (from the Australian Medicare database). These data suggest that there are small differences in use of health services among respondents and non-respondents, with non-respondents less likely, for example, to have visited a medical specialist in the last 2 years (The 1946-51 cohort, 49% versus 54%; the 1921-26 cohort, 65% versus 72%). There was not a significant difference in health service use between respondents and non-respondents from the 1973-78 cohort.

A proportion of this difference may be explained by the fact that some women who were selected may no longer be living in Australia or may have died, as the Medicare database is not routinely linked to emigration records or the National Death Index in Australia.

Although we were not able to ascertain reasons for non-response (because we were not allowed to know any details about the selected women), we were able, through comparison with the 1996 census data, to confirm that the participants in each of the cohorts are reasonably representative of the general population of women of the same age in Australia (see Table 4-3). There is some response bias in terms of overrepresentation of women with tertiary education and under-representation of some groups of immigrant women.

This information and Table 4-2 are taken from Brown, W. J., Dobson, A. J., Bryson, L., & Byles, J. E. Women's Health Australia: on the progress of the main cohort studies. *Journal of Women's Health & Gender-Based Medicine*, 1999; 8(5): 681-688.

4.3.2 Sample for the longitudinal study

Retention and representativeness of the sample

Some participants who completed Survey 1 in 1996 did not provide any contact details (532 women in the 1973-78 cohort, 383 women in the 1946-51 cohort and 508 women in the 1921-26 cohort). Hence, the numbers of women actually enrolled in the ALSWH were 14,247 in the 1973-78 cohort, 13,716 in the 1946-51 cohort and 12,432 in the 1921-26 cohort of women.

Table 4-3 Socio-demographic characteristics of the 1973-78 cohort, the 1946-51 cohort and the 1921-26 cohort respondents, and for women of the same age in the general population (ABS Census, 1996).

	Young (18 - 23 years)		Mid-age (45 - 50 years)		Older (70-75 years)	
	WHA %	ABS %	WHA %	ABS %	WHA %	ABS %
Number	14,762	759,680	14,072	734,155	12,804	377,152
Main current employment status						
Employed full-time	31.3	32.4	36.1	36.0	NA	
Employed part-time	19.2	26.4	30.1	28.5	NA	
Worked (without pay)/employed (other)	1.9	1.3	7.0	2.0	NA	
Unemployed	6.4	10.5	1.9	4.0	NA	
Total not in labour force	39.4	26.3	21.6	27.0	NA	
Not stated	1.8	2.7	3.3	2.5	NA	
Highest qualification completed						
No post school qualification	69.8	69.3	63.1	61.8	79.8	70.4
Trade/Apprenticeship	2.4	7.9	3.5	7.0	3.7	2.7
Certificate/Diploma	15.1	6.0	15.9	8.7	7.3	3.3
University degree	12.1	7.7	16.3	11.6	4.0	2.4
Other (not stated, inadequately described)	0.6	9.1	1.2	10.8	5.2	21.2
Aboriginal/Torres Strait Islander						
Non Indigenous	97.9	94.9	98.1	96.7	91.6	93.7
Aboriginal or TSI	1.6	2.7	0.8	1.1	0.3	0.4
Not stated	0.5	2.5	1.1	2.1	8.1	5.9
Country of birth						
Australia	88.6	77.8	69.0	62.6	68.5	66.4
Other English speaking	3.5	4.1	13.9	11.6	12.4	11.0
Other Europe	1.3	1.6	8.7	11.0	9.7	12.7
Asia	3.6	10.6	4.3	8.2	1.8	3.3
Other/not stated	3.0	6.0	4.2	6.5	7.6	6.5
Present marital status						
Married	8.2	9.0	75.1	73.0	54.7	48.9
Separated/divorced	0.0	1.1	13.2	18.7	6.3	6.8
Widowed	0.0	0.2	2.1	2.7	35.2	39.9
Never married	79.0	89.8	3.9	5.6	3.2	4.4
De Facto (not collected by ABS)	12.0	-	5.7	-	0.6	-
Present housing situation						
House	74.3	79.4	84.7	89.2	76.7	79.3
Flat/apartment/unit	20.0	14.0	7.1	6.5	19.4	12.9
Other	5.7	6.6	8.2	4.3	3.9	7.9

Among the 1973-78 cohort, 69% responded to Survey 2 in 2000, 65% to Survey 3 in 2003, and 67% responded to Survey 4 in 2006 (see Table 4-4). This retention compares well with other surveys of this highly mobile age group. The major reason for non-response among the 1973-78 cohort has been that the research team has been unable to contact the women (21% of eligible women at Survey 2, 28% at Survey 3, and 21% at Survey 4), despite using all possible methods of maintaining contact. Women in their twenties are characterised by high levels of mobility, change of surnames on marriage, often not having telephone listings, not being registered to vote, and making extended trips outside Australia for work, education, or recreation.

Table 4-4 Participation and retention of 1973-78 cohort of women

	Survey 1	Survey 2	Survey 3	Survey 4
Age in years	18-23	22-27	25-30	28-33
Eligible at previous survey		14247	14116	13886
Ineligible				
deceased between surveys		22	10	15
frailty (e.g. intellectual disability)		3	6	4
withdrawn before mailout survey date		106	213	311
Total ineligible		131	229	330
Eligible at current survey		14116	13887	13557
Non-respondents				
withdrawn from the project		124	200	171
contacted but did not return survey		1332	653	1371
unable to contact participant		2972	3953	2870
Total non-respondents		4428	4806	4412
Respondents				
completed survey	14247	9688	9081	9145
Retention rate as % eligible		68.6%	65.4%	67.5%

Demographic characteristics (country of birth, marital status, education, employment and lone person household) of the 1973-78 cohort respondents at Survey 1 (1996) and Survey 2 (2000) were compared with those of women of the same age in the Australian population, using data from the 1996 and 2001 Censuses respectively. The comparisons revealed few differences - however there was some under-representation of women from non-English language countries at both surveys, a not unexpected finding, given that Medicare routinely excludes overseas students. The disparity in education increased between 1996 and 2001. Whereas at the 1996 Census almost 70% of young women had no post school qualifications (ALSWH and the general population), 31% and 49% had no post school qualifications in the ALSWH sample in 2000 and the 2001 Census respectively. Some of these differences will be due to overseas graduates returning home and Australian graduates working overseas. ALSWH women were less likely to be employed compared with women of the same age in the 1996 Census (52% vs. 60%), but more likely to be employed than women of the same age in the 2001 Census (85% vs. 67%).

Retention has been much higher among the 1946-51 cohort of women; 91% responded to Survey 2 in 1998 and 84% responded to Survey 3 in 2001, Survey 4 in 2004 and Survey 5 in 2007 (see Table 4-4 and Table 4-5). The major reasons for non-response among the 1946-51 cohort has been that the research team has been unable to contact the women (6%, 7%, 8% and 7% of eligible women at Survey 2, Survey 3, Survey 4 and Survey 5 respectively), and non-return of questionnaires by women who could be contacted (2%, 8%, 7% and 8% of eligible women at the second, third, fourth and fifth Surveys). Women in the 1946-51 cohort typically lead busy lives, often working as well as caring for parents and their children. The women who could not be contacted were more likely to be separated, divorced or widowed.

Table 4-5 Participation and retention of 13,715 women in the 1946-51 cohort who were aged 45-50 years at Survey 1 in 1996

	Survey 2	Survey 3	Survey 4	Survey 5
Age in years	47-52	50-55	53-58	56-61
Eligible at previous survey	13715	13605	13310	12979
Ineligible				
deceased between surveys	50	65	88	99
frailty (e.g. dementia, stroke)	7	14	14	19
withdrawn before mailout survey date	53	216	229	167
Total ineligible	110	295	331	285
Eligible at current survey	13605	13310	12978	12694
Non-respondents				
withdrawn from the project	155	155	136	226
contacted but did not return survey	254	998	886	995
unable to contact participant	858	931	1052	835
Total non-respondents	1268	2084	2074	2056
Respondents				
completed survey	12338	11226	10905	10638
Retention rate as % eligible	90.7%	84.3%	84.0%	83.8%

Data from the 1996 and 2001 Censuses were used to compare demographic characteristics (country of birth, marital status, education, employment and lone person household) of women of the same age in the Australian population with the 1946-51 cohort respondents at Survey 1 (1996) and Survey 3 (2001). There were few differences, however there was some under-representation of women from non-English language countries and women who were separated or divorced at both surveys.

Of women from the 1921-26 cohort, 91% responded to Survey 2 in 1999, 85% to Survey 3 in 2002, 84% to Survey 4 in 2005 and 79% to Survey 5 in 2008 (see Table 4-6). Among the 1921-26 cohort the major reason for non-response was non-return of the questionnaire (4%, 8%, 7% and 9% of eligible women at Surveys 2, 3, 4 and 5 respectively), although increasingly the participant could not be contacted (3% at Surveys 2 and 3, 6% at Survey 4 and 9% at Survey 5). Non-respondent women tended to report poorer self-rated health at Survey 1 than respondents.

Table 4-6 Participation and retention of 12432 women in the 1921-26 cohort of women who were aged 70-75 years at Survey 1 in 1996

	Survey 2	Survey 3	Survey 4	Survey 5
Age in years	73-78	76-81	79-84	82-87
Eligible at previous survey	12432	11535	10184	8528
Ineligible				
deceased between surveys	529	570	770	848
frailty (e.g. dementia, stroke)	106	265	379	326
withdrawn before mailout survey date	262	516	507	336
Total ineligible	897	1351	1656	1510
Eligible at current survey	11535	10184	8528	7018
Non-respondents				
withdrawn from the project	311	383	267	161
contacted but did not return survey	481	860	592	642
unable to contact participant	309	294	511	655
Total non-respondents	1101	1537	1370	1458
Respondents				
completed survey	10434	8647	7158	5560
Retention rate as % eligible	90.5%	84.9%	83.9%	79.2%

Demographic characteristics (country of birth, marital status, education and lone person household) of the 1921-26 cohort respondents at Survey 1 (1996) and Survey 3 (2002) were compared with those of women of the same age in the Australian population, using data from the 1996 and 2001 Censuses respectively. Comparisons showed few differences. There was some under-representation of women from non-English speaking countries in the ALSWH sample at both surveys. Comparisons are difficult for marital status and educational qualifications due to the high level of missing data in the Census.

5. DATA LINKAGE

Author: Annette Dobson

5.1 Progress with data linkage

Progress has stalled towards gaining approval for linkage of ALSWH data with data from the Medicare Benefits Scheme (MBS) and the Pharmaceutical Benefits Scheme (PBS), together with the corresponding data for benefits provided by the Department of Veterans Affairs for all participants (except any women who have asked for their data not be used in this way). With a great deal of help from staff of the Department of Health and Ageing (DoHA), a protocol for linkage of de-identified data has been developed and has been approved by the DoHA Ethics Committee. At this stage, we are still waiting for advice from the DoHA about the appointment of a third-party organisation that could produce the linkage keys in accordance with the protocol.

6. MAJOR REPORTS

6.1 Reproductive health: Findings from the Australian Longitudinal Study on Women's Health

Authors: Deborah Loxton and Jayne Lucke on behalf of the Australian Longitudinal Study on Women's Health.

Report prepared for the Australian Government Department of Health and Ageing

6.1.1 Aims of the report

The report focuses on the reproductive health of women from the ALSWH, and was developed on the basis of discussions between the ALSWH research team and the staff of the Australian Government Department of Health and Ageing. It has the broad aim of examining reproductive health among Australian women of child bearing ages.

The ALSWH first collected data in 1996, from three cohorts of women then aged 18-23, 45-50 and 70-75. While some descriptive information concerning birthing patterns of the latter two cohorts is included in the report, the focus of analyses is on data collected from the youngest cohort, who were born 1973-78.

6.1.2 Childbearing among the cohorts

Data collected from all three cohorts clearly demonstrated generational differences in childbearing. A trend in decreasing family sizes was noted, with women from the 1921-26 cohort being more likely to have four or more children compared with the 1946-51 cohort, who were more likely to have two or three children. Most women in the 1973-78 cohort aspired to have two children but over time an increasing proportion of women aspired to have only one child.

Decisions to have fewer children could reflect the ages at which women are having their first children. About half of the 1946-51 cohort had their first child before 24 years of age, compared with less than 20% of the 1973-78 cohort. In 2006, when they were aged between 28 and 33 years, almost 60% of women in the 1973-78 cohort had not had children.

6.1.3 Use of contraception

Obviously the availability of a wide range of contraceptive choices has played a key role in the current patterns of childbearing. Among the 1973-78 ALSWH cohort, contraceptive use increased as women moved from their late teens to early twenties and became sexually active. Contraceptive use then decreased as women reached their mid to late twenties and started having children. The main reasons for not using contraception at Surveys 3 and 4, when women were aged 25 to 33, were pregnancy, trying to conceive, or having no male sexual partners. Women who used contraception were more likely to be in de facto relationships or single, be up to date with Pap tests and have had two or more births.

The oral contraceptive pill was the most commonly used method of contraception at each survey of the 1973-78 cohort. Of women who consistently used contraception, 40% used the oral contraceptive pill as their only method of contraception in at least three out of four surveys. However, use of the oral contraceptive pill decreased over time. Condoms were the next most common single method used; 15-18% of women used condoms only, although only 3% used condoms consistently across time. The proportion of women using both condoms and the oral contraceptive pill remained steady at 13-14% of all women from Survey 1 to 3 (ages 18-30) but decreased to 8% of all women at Survey 4 (ages 28-33), when the use of methods other than the oral contraceptive pill and/or condoms increased. Contraception changed in expected ways according to reproductive events: women who reported only miscarriages between surveys also stopped using contraception in the same period;

most women who did not report reproductive events continued to use the same method of contraception; and women who had a termination tended to switch methods.

The advent of long-acting reversible methods of contraception is likely to have an impact on the ways in which women manage their fertility as they complete their families. For example, 3% of the ALSWH 1973-78 cohort was using an implant (e.g. Implanon) at Survey 3, and one third of these women continued using an implant three years later. It will be important to assess the uptake of newer forms of contraception and to assess the reproductive and sexual health needs of women in this age group as they move into their late thirties in order to develop policy that supports best practice in women's reproductive health.

6.1.4 Aspirations

Another informative factor in women's health policy planning is the aspirations women hold for having children. The majority of the 1973-78 cohort want to have children, with the most popular aspiration being for two children, followed by three or more children, at all four surveys. Few women aspired to no children, and less than 2% of women consistently aspired to no children across all four surveys. However, the popularity of the single-child family increased across surveys as the women became older, while the popularity of larger families of two or more children started to decline.

Changes in aspirations were found to be dependent on circumstances. Approximately two-thirds of the 1973-78 cohort changed their motherhood aspirations at some time since the first survey, and changes were associated with having already started childbearing and being in a stable relationship. Differences were observed in aspirations between women who had started childbearing and those who hadn't; with childless women more dramatically reducing their aspirations for larger families of three or more children across surveys. Women who had experienced a first birth were more likely to revise their aspirations for children upwards compared with women who had no children.

The most common combination of aspirations was to be in a stable relationship, have some form of paid work, and to have at least one child. However, the details about the type of paid work and number of desired children changed over time. From Surveys 1 to 3, women most commonly aspired to marriage, one or two children and full time paid work but by Survey 4, more women aspired to marriage, one or two children and part time rather than full time paid work.

Although the majority of the 1973-78 cohort consistently aspire to having children, half had not had children by Survey 4, when they were aged 28-33 years, and 70% had not yet had their desired number of children. While the women in this cohort are still having children, there is some indication that despite their aspirations, they will have smaller families than previous generations. Furthermore, as they approach their mid to late thirties, issues to do with fertility and infertility will increase. By Survey 4, one in six of the 1973-1974 cohort had already had a problem with infertility.

6.1.5 Fertility and infertility

As women age they are more likely to experience infertility and, with little other data available, the ALSWH provides an important opportunity to examine this problem and the related use of health services. Reproductive history is an important factor in understanding fertility issues. Pregnancy losses are common, with half of the women in the 1973-78 cohort who reported a pregnancy outcome at Survey 4 having experienced a pregnancy loss. More than one third (39%) of women who had experienced a live birth by Survey 4 also experienced a pregnancy loss. For every ten women aged 28-33 years in 2006: four women had not been pregnant; five women had a live birth (with or without a recognised pregnancy loss); and one woman had a recognised pregnancy loss only. Recognised pregnancy losses are an important measure of fecundity, the findings of this study point to the value of a research approach that includes a complete reproductive history.

The inclusion of pregnancy losses also sheds light on the fertility rate of the 1973-78 cohort. While four in ten women reported never being pregnant, one in two women aged 28-33 were yet to report a live birth by 2006. Among women who had tried to conceive or had been pregnant, one-in-six had experienced infertility (i.e. tried unsuccessfully to get pregnant for 12 months or more). The most significant factors associated with having infertility, seeking advice and using treatment were: polycystic ovary syndrome, endometriosis and miscarriage. In all, of the women who reported

infertility, two-thirds sought advice but only half used treatment and most of the women who used fertility treatment had used low cost and non-invasive methods. However, not all women with infertility sought treatment, with smokers and those who were overweight or obese being the least likely to seek help.

6.1.6 Prenatal and maternal health behaviour

In addition to investigating the health behaviour of women trying to become pregnant, this report examined three key areas of prenatal and maternal health behaviour, including: a summary of past ALSWH work that examined diet and physical activity in women of childbearing age; new analyses of linked ALSWH and Pharmaceutical Benefits Scheme (PBS) data that investigated medications prescribed during the pre-pregnancy, pregnancy and post pregnancy periods; and the use of alcohol and tobacco during pregnancy.

Past ALSWH research has demonstrated that while women appear to make alterations to their diets while pregnant, many fail to meet nutrient recommendations that are important during this period (e.g. folate, iron). In addition, pregnant and post-partum women from the 1973-78 cohort were found to consume less than the recommended level of iodine. The findings support the importance of continuing to stress the recommended levels of nutrients during pregnancy and the post-partum period.

It is possible that the factors that prevent women from following dietary guidelines are similar to those barriers that impede women from undertaking the recommended levels of physical activity. Life events such as getting married (or moving into a de facto relationship) and having children are associated with decreases in physical activity among the 1973-78 cohort. ALSWH results reveal varied patterns of physical activity with similar percentages moving into and out of regular exercise. Overall, the findings suggest that there is a need for targeted interventions and public health messages that encourage women to adopt or maintain healthy diets and levels of physical activity throughout life transitions, particularly as they move into new personal relationships, during pregnancy and into motherhood, when the health benefits are great.

Dietary supplements might be recommended for pregnant women but there are other classes of drugs and medications that are contraindicated for women who are trying to become pregnant or who are pregnant. In Australia, the patterns of prescribing medication for pregnant women have not been examined in detail. Analyses of linked ALSWH and PBS data revealed that women who gave birth in 2005 were more likely to be prescribed medications in the pre- or post-pregnancy period than during the pregnancy period. Nevertheless, 17% of the 1973-78 cohort who had children in 2005 (and consented for their survey data to be linked with PBS data) had claims for prescription medication during the pregnancy period. The most commonly claimed medications during the pregnancy period were anti-depressants, with 4% of women pregnant in 2005 continuing the use of antidepressants during pregnancy. Results also indicated that claims made during the pregnancy period for medications that are known or suspected of harming fetal development were very rare.

Two other factors that are known to harm fetal development when used in sufficient quantities comprise the third health behaviour area examined by this report: tobacco and alcohol use. Of women who were smokers and not pregnant at any survey, 30% quit smoking over the ten years from 1996 to 2006. At least half the women who were smokers before pregnancy quit smoking during pregnancy, but 30% or more did not. There was a similar pattern for alcohol use: 40% of women who were drinking at risky levels (for pregnant women) but were not pregnant at any survey stopped risky drinking over the ten years from 1996 to 2006, and while more than half the women who were drinking at risky levels (for pregnant women) before pregnancy stopped drinking at those levels during pregnancy, 35% or more did not.

In summary, health behaviour during pregnancy was generally found to include an increase in healthy behaviours and a decrease in behaviours that potentially damage the health of the mother and/or fetus. However, while diets improved, physical activity increased and tobacco and alcohol use decreased during pregnancy, the overall results indicated that for a substantial number of women, pregnancy health behaviour was not optimal. These findings indicate an ongoing need for effective public health interventions that promote healthy behaviours and enable the discontinuation of unhealthy behaviours in the pre-pregnancy and pregnancy periods.

6.1.7 Maternal health

Women's health after birth is as important as their health during pregnancy. This report examines the data collected from the 1973-78 cohort in 2006, when the women were aged 28-33, to determine the general health, symptoms and mental health of mothers. While much policy and research has focused attention on the post-partum period, the current research found that women whose children were under 12 months had higher self rated physical and mental health than women whose children were older than 12 months, and higher than women without children. These findings indicate a need for more research into the health and wellbeing of mothers of older children who are potentially the least healthy of all women in this age group.

While women with children under 12 months had higher self rated health than other women, they were more likely to experience some symptoms (e.g. incontinence, severe tiredness). Furthermore, around 10% of the women who had given birth in a three year period reported a diagnosis of postnatal depression. Mothers with a history of depression and anxiety and those who had experienced more stressful life events were more likely to experience postnatal depression than other mothers. Those mothers who reported limited social support were also more likely to report experiencing postnatal depression, especially those who had limited affectionate support and positive social interactions.

6.1.8 Motherhood and paid work

Another factor that might influence the health and wellbeing of mothers is their attachment to the paid work force. The 1973-78 cohort have demonstrated interesting and varied patterns of paid employment over the ten year study period. Across the four surveys, 23% of women alternated between full-time paid and part-time paid employment while 63% of women were not in the paid labour force at least once across the four surveys. Having children is a pivotal factor in women's attachment to paid work. Compared with women with no children, women having a first birth were likely to change from full-time to part-time paid employment, or to change from full-time or part-time employment to not being in the labour force. Paid employment status prior to birth of the first child appears to influence women's paid employment after first birth. For instance, more women who worked full-time prior to their first birth remained in the paid labour force after having their first birth compared with women who worked part-time or who were not in the labour force before their first birth.

It is also likely that the availability of maternity leave plays an important role in patterns of mothers' paid employment. For employed 22-33 year old women who had their last child between 2000 and 2006, two thirds took paid or unpaid maternity leave and more than 70% of women with maternity leave took 12 weeks or more off work. Paid maternity leave was more common among women with university qualifications, while taking no maternity leave was more common among women who had other children.

While the benefits of available maternity leave have been the subject of much debate in the media, the potential impact of paid work and maternity leave on mothers' mental health warrants further research. Analysis of 1973-78 cohort data demonstrated the importance of viewing maternity leave in the more complete context of women's lives. Women with both paid and unpaid leave had the best mental health but this difference disappeared after adjusting for number of general practitioner visits prior to pregnancy, time since birth of the last child and number of other children. Women who took less than 6 weeks maternity leave had worse mental health and more stress than women who took 12 or more weeks maternity leave, but these differences disappeared after adjusting for number of general practitioner visits prior to pregnancy, time since birth of the last child and number of other children. Women who took less than 6 weeks maternity leave had less vitality than women who took 12 or more weeks maternity leave, even after adjusting for number of general practitioner visits prior to pregnancy and time since birth of the last child.

6.2 Carrying the load: Transitions, needs and service use of Australian women carers.

The Ageing and Aged Care Division of the Department of Health and Ageing contracted researchers in the ALSWH team at the University of Queensland to build on their previous research and provide further detailed analyses of caring by women born between 1946 and 1951, and 1921 and 1926, in three phases of research. The research investigated transitions into and out of caring, carer needs, and use of interventions and services. This second research stage involved three phases of research each with its own methodology and participant sample.

6.2.1 Phase 1

The first report (Phase 1) examined caring and use of services in women born between 1946 and 1951 (McKenzie et al. 2009a). The study was a pilot substudy of the ALSWH and included 296 women (97 carers, 199 noncarers) that participated in pilot surveys for the 1946-1951 cohort. We found that while carers were similar to noncarers on most demographic characteristics (age, marital status, residence, language spoken at home and level of education), they were less likely to be in the workforce than noncarers. Carers also had poorer mental health and less social support than noncarers. The detailed report also showed that carers were not a homogenous group. Women who were live-in carers reported higher carer strain and were more likely to be the main care provider, have been caring for a longer time, care for younger recipients (who were typically their husbands/ partners), perform more activities of daily living (particularly the more intensive activities of daily living) and work part-time, if in the labour force. However, carers who did not live with their care recipient were more likely to care for older recipients (who were typically their parents), perform only instrumental activities of daily living and work full-time, if in the labour force.

6.2.2 Phase 2

The second report (Phase 2) examined caring and use of services in women carers born between 1921 and 1926 (McKenzie et al. 2009b). The study was a nested cross-sectional substudy of the ALSWH, involving data from 280 carers who cared for someone who may have used community services. The detailed report showed that carers had poorer mental and physical health compared with the entire 1921-1926 cohort of the ALSWH. The carers who completed the survey provided the majority of the help for the care recipients compared with other unpaid carers or paid services. Use of services was low. However, when the services were used, the carers reported that they were easy to access, they were of a good quality, and that they received as much as they wanted. The use of services, particularly respite care, was strongly driven by care recipient preference. The most common themes of the positive aspects of caring were ‘characteristics of the relationship between the carer and care recipient,’ such as companionship, and ‘personal concerns or attitudes of the carers,’ such as the carers’ outlook on life and an appreciation for what they do have. The most discussed theme for the negative aspects of caring was ‘practicalities of the situation’ which included restrictions on everyday life and dissatisfaction with the present situation and repetitious routine.

6.2.3 Phase 3

The third report (Phase 3) described exploratory and longitudinal analysis of data from Surveys 2, 3, 4, and 5 of the 1921-1926 cohort of the ALSWH to examine carer needs and transitions (McKenzie et al. 2009c). Of the women who responded, 60% of them did not provide care at any survey from Survey 2 (1999) to Survey 5 (2008). The remaining women included those who provided care at all four surveys (2%) and women who provided care at some point across the four surveys (38%). Therefore, of the women who provided care at some point during the surveys, the majority (95%) transitioned into or out of their caring roles. The effect of ten factors (including transition groups, time of survey and sociodemographic and health factors), on seven health and community service outcomes (mental health, physical health, number of visits to the general practitioner (GP) and use of nursing or community health services, respite services, homemaking services and home maintenance

services) was investigated. Women who never provided care typically had better outcomes compared with carers who lived with their care recipients but worse outcomes compared with carers who lived elsewhere. Generally, women who used the services or had poorer health outcomes transitioned into or out of providing care for a care recipient who lived with them and women who had better mental health were more likely to have transitioned into or out of providing care for a care recipient who lived elsewhere. The combination of factors that was related to poorer health, visiting the GP five or more times and use of services, is:

- Transitioning into or out of providing care for a live-in care recipient,
- Reporting difficulties managing on available income,
- Not providing care for grandchildren,
- Needing care themselves,
- Reporting sleep difficulties, and
- More memory decline.

6.2.4 Conclusions of Stage 2

While carers may have willingly entered into a caring relationship, their lives were still impacted by their caring role and they had poorer mental health and less social support than noncarers. The reports of Stage 2 also highlighted the importance of knowing if the carer lived with the care recipient: women who provided care for recipients who lived with them had poorer health outcomes and were more burdened than women who provided care for someone who lived elsewhere.

Carers across all three phases reported minimal financial difficulties. However, women of the 1921-1926 cohort who did report financial difficulties were at risk of poorer outcomes. In addition, older women who were carers were at risk of poorer outcomes if they also did not provide care for grandchildren, needed care themselves, and reported sleep difficulties and memory decline. Therefore, while service use was generally low, carers of the 1921-1926 cohort who were using the services were more likely to have that combination of risk factors. Women with these characteristics would be potential candidates for appropriate policies and services. Furthermore, care recipient preferences associated with using services may have hindered women from using them. Improving acceptability of services for older care recipients may improve the use of services.

Carers' satisfaction with their social support may provide a buffer to their strain and burden. The good aspects of caring that were highlighted in Phase 2, such as companionship and an appreciation for what they do have, may have also moderated the burden and strain of caring. Further investigation is needed to determine the causality of these relationships.

Caring is transient in women born between 1921 and 1926. The majority of these women who were carers at some point across the four surveys from 1999 to 2008 did not provide care at all surveys. Instead, most women transitioned into or out of providing care. This has policy implications for timely services.

6.2.5 Possible policy implications

- Policies need to recognise that carers and their situations are different and may change over time.
- Due to the transient nature of caring, services should be provided in a timely manner.
- Results indicate that carers who provided care for a care recipient who lived with them, or transitioned into or out of this live-in caring role, had poorer health outcomes than carers who lived elsewhere. Policies should consider the particular needs of carers who live with the person for whom they care. As these carers may experience difficulty leaving their care recipient at home, adequate respite services to allow carers to visit health services, or in-home health visits, may be necessary to ensure adequate access to services.
- In particular, older women who are carers are at risk of poorer outcomes if they also have difficulties managing on their available income, do not provide care for grandchildren, need care themselves, and report sleep difficulties and memory decline. This finding emphasises the importance of adequate financial provision and health services for carers.
- Care recipient preference strongly drove the use of services, particularly respite care. Therefore, services should aim to improve acceptability and use of services by older care recipients.
- Framing the needs of the carer(s) and care recipient as a system where each affects the other may assist health services to provide for the needs of both in an efficient manner.
- Carers who were provided with services through the Department of Veterans' Affairs commended them highly. Other non-veterans service providers may be able to model their service delivery and availability after the Department of Veterans' Affairs.

6.2.6 References

McKenzie, S, Tooth, L, Lucke, J & Dobson, A 2009a, *Caring and use of services in women born between 1946 and 1951: Findings from the Australian Longitudinal Study on Women's Health. Detailed report for the Australian Government Department of Health and Ageing Carers Project, Stage 2, Phase 1*.

McKenzie, S, Tooth, L, Lucke, J, Hockey, R & Dobson, A 2009c, *Transitions into and out of caring and their effects on health and use of community services in women born between 1921 and 1926. Detailed report for the Australian Government Department of Health and Ageing Carers Project, Stage 2, Phase 3*.

McKenzie, S, Tooth, L, Lucke, J, Mendis, S & Dobson, A 2009b, *Caring for carers: Caring and use of services in women carers born between 1921 and 1926. Detailed report for the Australian Government Department of Health and Ageing Carers Project, Stage 2, Phase 2*.

7. DISSEMINATION OF STUDY FINDINGS

7.1 Website

The ALSWH study web site, maintained at the University of Newcastle, can be viewed at www.alswh.org.au. Each month the website content is updated with current lists of collaborators, ongoing and completed analyses, reports, and abstracts of all accepted and published papers. The password protected sections of the website for 'Collaborators' and 'Investigators and Staff' are also routinely revised with minutes of meetings, project notes and other internal documents.

7.2 Publications

7.2.1 Papers published

Adams J, Sibbritt D & Young A. A longitudinal analysis of older Australian women's consultations with complementary and alternative medicine (CAM) practitioners, 1996-2005. *Age & Ageing.* 2009; 38(1) 93-99.

Objective: To determine the factors associated with complementary and alternative medicine (CAM) use among older Australian women over time.

Methods: A longitudinal analysis of postal questionnaires completed in 1996, 1999, 2002, and 2005 as part of the Australian Longitudinal Study on Women's Health.

Results: The percentage of women who consulted a CAM practitioner in the years 1996, 1999, 2002 and 2005 were 14.6%, 12.1%, 10.9% and 9.9% respectively. Use of CAM increased as the number of reported symptoms increased, as physical health deteriorated, and for non-urban residents compared to urban residents.

Conclusion: Use of CAM amongst older women appears to be strongly influenced by poor physical health. There is also a suggestion that lack of access to conventional health care providers increases CAM use. There is also an overall decline in the use of CAM among older women as they age.

Ball K, Burton NW & Brown WJ. A prospective study of overweight, physical activity and depressive symptoms in young women. *Obesity.* 2009; 17(1) 66-71.

This study examined the prospective associations of BMI, physical activity (PA), changes in BMI, and changes in PA, with depressive symptoms. Self-reported data on height, weight, PA, selected sociodemographic and health variables and depressive symptoms (CESD-10) were provided in 2000 and 2003 by 6,677 young adult women (22–27 years in 2000) participating in the Australian Longitudinal Study on Women's Health (ALSWH). Results of logistic regression analyses showed that the odds of developing depressive symptoms at follow-up (2003) were higher in women who were overweight or obese in 2000 than in healthy weight women, and lower in women who were active in 2000 than in sedentary women. Changes in BMI were significantly associated with increased odds of depressive symptoms at follow-up. Sedentary women who increased their activity had lower odds of depressive symptoms at follow-up than those who remained sedentary. Increases in activity among initially sedentary young women were protective against depressive symptoms even after adjusting for BMI changes. These findings indicate that overweight and obese young women are at risk of developing depressive symptoms. PA appears to be protective against the development of depressive symptoms, but does not attenuate the depressive symptoms associated with weight gain. However, among initially sedentary young women, even small increases in PA over time may reduce the odds of depressive symptoms, regardless of weight status.

Bell S & Lee C. Transitions in emerging adulthood and stress among young Australian women. *International Journal of Behavioral Medicine.* 2008; 15(4) 280-288.

Background: Emerging adulthood involves major transitions in social roles and high levels of stress, which may affect later health.

Purpose: To examine cross-sectionally and longitudinally the relationships of stress to roles in four life domains - residential independence from family of origin, employment, relationships, and motherhood – among young adult women.

Method: 8,749 young women participating in the Australian Longitudinal Study on Women's Health provided data at Survey 1, aged 18-23, and Survey 2, aged 22-27.

Results: Contrary to expectation, major life transitions were associated with low and reducing levels of stress. Cross-sectionally, living independently, not being a student, being married, and being a mother were associated with the lowest stress. Normative transitions such as moving out of home, finding work, or motherhood, were associated with no change in stress, while marrying was associated with a decrease in stress. Three types of transition were associated with increases in stress: non-normative transitions to more "adolescent" statuses, no transition; and transitions occurring earlier than normative.

Conclusion: High levels of stress at this age are associated, with unusual changes, delays in changing, or changing earlier than one's peers. The normative transitions of young adulthood are not associated with high levels of stress.

Berecki J, Hockey R & Dobson A. Adherence to bisphosphonate treatement by elderly women. *Menopause.* 2008; 15(5) 984-990.

Objective: The aim of this study was to evaluate the relationship between adherence to bisphosphonate treatment by postmenopausal women, and demographic, health and lifestyle factors before treatment in a country with universal subsidies for pharmaceutical costs.

Design: Older women participating in the Australian Longitudinal Study on Women's Health who consented to linkage to Pharmaceutical Benefits Scheme claims data were included if they filled a bisphosphonate prescription between 2002 and 2005 after a medication-free interval or 180 days (N=788). A Cox proportional hazards model was used to assess association of baseline variables with duration of adherence to bisphosphonate treatment.

Results: The median time until discontinuation of bisphosphonate treatment was 170 days [95% CI 154-186]. Accounting for socioeconomic status, the baseline variables that were associated with adherence failure were use of acid-related medications (Hazard Ratio =1.25, 95% CI 1.01 - 1.55) and smoking (Hazard ration =1.82, 95% CI 1.26-2.64); reporting high levels of physical activity was associated with better adherence (Hazard Ratio =0.69, 95% CI 0.52-0.92).

Conclusion: Overall adherence to bisphosphonate treatment among older Australian women with a fracture history was poor. Inquiring about acid-related disorders and health behaviour such as smoking and lack of physical activity could help the prescribing physician to identify women at risk for nonadherence.

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.

Objective: To assess the test-retest reliability and validity of a modified self-administered version of the Active Australia physical activity survey.

Methods: One hundred and fifty-nine mid-age women (54-59 years) completed a mailed physical activity questionnaire before recording daily pedometer step counts for seven consecutive days. A random subsample (n=44) also wore an accelerometer during this period. Participants then completed the physical activity questionnaire again. Spearman's ρ and per cent agreement were used to assess test-retest reliability. Self-reported physical activity data (time 2) were compared with pedometer and accelerometer data using box plots and Spearman's correlations to assess validity.

Results: Median time between surveys was 13 days. Median frequency and duration of moderate and vigorous physical activity were the same at both surveys, but median walking frequency was slightly higher at time 2 than time 1. Reliability coefficients for frequency/time in each domain of physical

activity ranged from 0.56-0.64 and per cent agreement scores ranged from 40% to 65% for the physical activity categories, and 76% for 'meeting guidelines'. Correlations (ρ) between self-reported physical activity and 1) weekly pedometer steps and 2) accelerometer data for duration of at least moderate intensity physical activity were 0.43 and 0.52 respectively.

Conclusions: The measurement properties of this modified self-administered physical activity survey are similar to those reported for the original computer assisted telephone interview survey.

Implications: This modified version of the Active Australia survey is suitable for use in self-administered format.

Brown WJ, Heesch K & Miller Y. Life events and changing physical activity patterns in women at different life stages. *Annals of Behavioral Medicine.* 2009; 37(3) 294-305.

Background: The impact of life events on physical activity (PA) is little understood.

Purpose: The purpose of this study is to examine relationships between specific life events and changes in PA in three cohorts of Australian women.

Methods: Young (N = 7,173; age 22–27 years), mid-age (N = 8,762; 51– 56 years), and older (N = 6,660; 73–78 years) participants in the Australian Longitudinal Study on Women's Health completed surveys on two occasions, 3 years apart.

Results: About one third of the young and mid-age women and one quarter of the older women were 'active' at both times. Decreasing PA was associated with marriage and childbirth in young women and with declining health in older women. Increasing PA was associated with retirement and death of spouse in the mid-age women. Stressful events such as divorce, harassment at work, and violence were also associated with changing PA.

Conclusions: There were significant associations between age-specific life events and PA changes. Understanding these relationships could inform interventions for preventing declines in activity at specific life stages.

Byles J, Millar C, Sibbritt D & Chiarelli P. Living with urinary incontinence: A longitudinal study of older women. *Age and Ageing.* 2009; 38 (3) 333-338.

Background: Urinary incontinence carries major social burden and considerable costs for health care systems.

Objective: The aim of this study was to investigate changes in continence status among a large cohort of older women, and to identify factors associated with incidence of incontinence in later life.

Subjects: Participants of the Australian Longitudinal Study of Women's Health (ALSWH), aged 70–75 years in 1996 and who have completed four health surveys over the past 10 years.

Methods: Continence status across four survey periods, spanning 9 years, were defined according to women's reports of 'leaking urine' at each survey. Generalised estimating equation (GEE) models were used in longitudinal analyses of the factors associated with changing continence status over time.

Results: This study presents longitudinal data on the prevalence and incidence of incontinence from a large cohort of older women, over 9 years of follow-up. Over this time, 14.6% (95% CI 13.9–15.3) of the women in the study who had previously reported leaking urine 'rarely' or 'never' developed incontinence, and 27.2% (95% CI 26.2%, 28.3%) of women participating in Survey 4 (S4) in 2005 reported leaking urine 'sometimes' or 'often' at that survey, with women being twice as likely to report incontinence at S4 as they were 6 years earlier. Longitudinal models demonstrated the association between incontinence and dementia (P<0.001; OR = 2.34; 95% CI 1.64, 3.34), dissatisfaction with physical ability (P<0.001; OR = 1.70; 95% CI 1.52, 1.89), falls to the ground (P<0.001; OR=1.23; 95% CI 1.13, 1.33), BMI (P<0.001; OR=2.18; 95% CI 1.70, 2.80 for obese), constipation (P<0.001; OR 1.46; 95% CI 1.34–1.58), urinary tract infection (P<0.001; OR 2.07; 95% CI 1.89–2.28), history of prolapse (P≤0.001; OR = 1.53; 95% CI 1.35, 1.74) and prolapse repair (P=0.002; OR = 1.23; 95% CI 1.08, 1.40). Stroke (P = 0.01), parity (P = 0.017) and hysterectomy (P = 0.026) and number of visits to the general practitioner (P = 0.040) were less strongly associated with incontinence in the final

longitudinal model. Incontinence was not significantly associated with area of residence (P=0.344), education (P=0.768), smoking (P=0.055), diabetes (P=0.072), attending support groups (P= 0.464) or attending social groups (P = 0.022).

Conclusion: Strong associations between BMI, dysuria and constipation indicate key opportunities to prevent incontinence among older women.

Fitzgerald D, Berecki J, Hockey R & Dobson A. Hysterectomy and weight gain. *Menopause.* 2009; 16(2) 279-285.

Objective: To examine the prospective dose–response relationships between both leisure-time physical activity (LTPA) and walking with self-reported arthritis in older women.

Design, setting and participants: Data came from women aged 73–78 years who completed mailed surveys in 1999, 2002 and 2005 for the Australian Longitudinal Study on Women's Health. Women reported their weekly minutes of walking and moderate to vigorous physical activities. They also reported on whether they had been diagnosed with, or treated for, arthritis since the previous survey. General estimating equation analyses were performed to examine the longitudinal relationship between LTPA and arthritis and, for women who reported walking as their only physical activity, the longitudinal relationship between walking and arthritis. Women who reported arthritis or a limited ability to walk in 1999 were excluded, resulting in data from 3613 women eligible for inclusion in these analyses.

Main results: ORs for self-reported arthritis were lowest for women who reported ''moderate'' levels of LTPA (OR 0.78; 95% CI 0.67 to 0.92), equivalent to 75 to ,150 minutes of moderate-intensity LTPA per week. Slightly higher odds ratios were found for women who reported ''high'' (OR 0.81; 95% CI 0.69 to 0.95) or ''very high'' (OR 0.84; 95% CI 0.72 to 0.98) LTPA levels, indicating no further benefit from increased activity. For women whose only activity was walking, an inverse dose–response relationship between walking and arthritis was seen.

Conclusions: The results support an inverse association between both LTPA and walking with self-reported arthritis over 6 years in older women who are able to walk.

Heesch K & Brown W. Do walking and leisure-time physical activity protect against arthritis in older women? *Journal of Epidemiology and Community Health.* 2008; 62(12) 1086-1091.

Objective: To examine dose-response relationships between both leisure-time physical activity (LTPA) and walking and 6-year incidence of self-reported arthritis in older women.

Design, setting and participants: Older participants in the Australian Longitudinal Study on Women's Health (aged 73-78 years in 1999) completed mailed surveys in 1999, 2002 and 2005. LTPA and walking were measured in 1999. Women were classified as cases if they reported in 2002 or 2005 diagnosis of, or treatment for, arthritis over the previous 3 years. Logistic regression modeling was used to examine associations between first (1) all LTPA and then (2) only walking and self-reported arthritis.

Main results: Data from 3563 women who did not report arthritis in 1999 were included in these analyses. Over the 6-year follow up, 41.1% of respondents reported arthritis. There was a clear inverse relationship between both LTPA and walking with odds of self-reported arthritis. Women who reported low (75-<150 minutes of moderate-intensity LTPA per week), moderate (150-<300 minutes), and high (≥ 300 minutes) LTPA levels had 20%, 31%, and 34% lower odds of reporting arthritis, respectively, than those who were sedentary ($p<0.01$). There was a 40% reduced odds of arthritis in women who reported at least 200 minutes of walking per week and no other LTPA. Tests for linear trend revealed a dose-response relationship between each activity variable and the outcome ($p<0.001$).

Conclusions: The results support an inverse dose-response relationship between both LTPA and walking and 6-year incidence of self-reported arthritis in older women.

Herbert D, Lucke J & Dobson A. Pregnancy losses in young Australian women: Findings from the Australian Longitudinal Study on Women's Health. *Women's Health Issues*. 2009; 19, 21-29.

Introduction: Little research has examined recognized pregnancy losses in a general population. Data from an Australian cohort study provide an opportunity to quantify this aspect of fecundity at a population level.

Method: Participants in the Australian Longitudinal Study on Women's Health who were aged 28–33 years in 2006 (n=9145) completed up to 4 mailed surveys over 10 years. Participants were categorized according to the recognized outcome of their pregnancies, including live birth, miscarriage/ stillbirth, termination/ectopic, or no pregnancy.

Results: At age 18–23, more women reported terminations (7%) than miscarriages (4%). By 28–33 years, the cumulative frequency of miscarriage (15%) was as common as termination (16%). For women aged 28–33 years who had ever been pregnant (n=5,343), pregnancy outcomes were as follows: birth only (50%); loss only (18%); and birth and loss (32%), of which half (16%) were birth and miscarriage. A comparison between first miscarriage and first birth (no miscarriage) showed that most first miscarriages occurred in women aged 18–23 years who also reported a first birth at the same survey (15%). Half (51%) of all first births and first miscarriages in women aged 18–19 ended in miscarriage. Early childbearers (<28 years) often had miscarriages around the same time period as their first live birth, suggesting proactive family formation. Delayed childbearers (32–33 years) had more first births than first miscarriages.

Conclusion: Recognized pregnancy losses are an important measure of fecundity in the general population because they indicate successful conception and maintenance of pregnancy to varying reproductive endpoints.

Herbert D, Lucke J & Dobson A. Infertility, medical advice and treatment with fertility hormones and/or in vitro fertilisation: A population perspective from the Australian Longitudinal Study on Women's Health. *Australian and New Zealand Journal of Public Health.* 2009; 33 (4) 358-364.

Objective: To identify the factors associated with infertility, seeking advice and treatment with fertility hormones and/or in vitro fertilisation (IVF) among a general population of women.

Methods: Participants in the Australian Longitudinal Study on Women's Health aged 28-33 years in 2006 had completed up to four mailed surveys over 10 years (n=9,145). Parsimonious multivariate logistic regression was used to identify the socio-demographic, biological (including reproductive histories), and behavioural factors associated with infertility, advice and hormonal/IVF treatment.

Results: For women who had tried to conceive or had been pregnant (n=5,936), 17% reported infertility. Among women with infertility (n=1031), 72% (n=728) sought advice but only 50% (n=356) used hormonal/IVF treatment. Women had higher odds of infertility when: they had never been pregnant (OR=7.2, 95% CI 5.6-9.1) or had a history of miscarriage (OR range=1.5-4.0) than those who had given birth (and never had a miscarriage or termination).

Conclusion: Only one-third of women with infertility used hormonal and/or IVF treatment. Women with PCOS or endometriosis were the most proactive in having sought advice and used hormonal/IVF treatment.

Implications: Raised awareness of age-related declining fertility is important for partnered women aged ~30 years to encourage pregnancy during their prime reproductive years and reduce the risk of infertility.

Hure A, Young A, Smith R & Collins C. Diet and pregnancy status in Australian women. *Public Health Nutrition.* 2009;12 (6)853-861.

Objective: To investigate and report the diet quality of young Australian women by pregnancy status.

Design: Pregnancy status was defined as pregnant (n 606), trying to conceive (n 454), had a baby in the last 12 months (n 829) and other (n 5597). The Dietary Questionnaire for Epidemiological Studies was used to calculate diet quality using the Australian Recommended Food Score (ARFS) methodology. Nutrient intakes were compared with the Nutrient Reference Values for Australia and New Zealand.

Setting: A population-based cohort participating in the Australian Longitudinal Study on Women's Health (ALSWH).

Subjects: A nationally representative sample of Australian women, aged 25 to 30 years, who completed Survey 3 of the ALSWH. The 7486 women with biologically plausible energy intake estimates, defined as >4.5 but <20.0 MJ/d, were included in the analyses.

Results: Pregnancy status was not significantly predictive of diet quality, before or after adjusting for area of residence and socio-economic status. Pregnant women and those who had given birth in the previous 12 months had marginally higher ARFS (mean ($_{SE}$):30.2 (0.4) and 30.2 (0.3), respectively) than 'other' women (29.1 (0.1)). No single food group accounted for this small difference. Across all pregnancy categories there were important nutrients that did not meet the current nationally recommended levels of intake, including dietary folate and fibre.

Conclusion: Women do not appear to consume a wider variety of nutritious foods when planning to become pregnant or during pregnancy. Many young Australian women are failing to meet key nutrient targets as nationally recommended.

Johnstone M & Lee C. Young Australian women's aspirations for work and family. *Family Matters*. 2009; 81, 5-14.

Drawing upon data collected from the first three waves of the younger cohort of the Australian Longitudinal Study on Women's Health (ALSWH), this article investigates the work and family aspirations held by young Australian women, the consistency of these aspirations over time, and socio-demographic markers of differences between women with varying aspirations. The majority of young Australian women aspired to a stable relationship, at least one child, and some form of paid work, demonstrating that balancing paid work and family will continue to be important to young Australian women. Aspirations for marriage, two children and full-time paid employment were the most common responses, although some inconsistency in employment and motherhood aspirations was observed across waves. Socio-demographic variables, including area of residence, educational qualification and occupational category, were significant predictors of subsequent aspirations.

Johnstone M & Lee C. Young Australian women's aspirations for work and family: Individual and sociocultural differences. *Sex Roles.* 2009; 61, 204-220.

The arguments underlying Hakim's Lifestyle Preference Theory have initiated debate over the importance of individual preferences, versus social and structural constraints, in women's work and family patterns. This paper investigates the role of sociocultural factors in lifestyle preferences. A total of 6,929 Australian women, aged 25-30 years, from the Australian Longitudinal Study on Women's Health (ALSWH), were categorised into Hakim's Lifestyle Preference Groups, based on their aspirations for work and family. Rather than cutting across social groups, membership into Lifestyle Preference Groups was significantly related to sociodemographic variables. Further, the findings suggested that Hakim's definition of 'adaptive' women may be too limited to capture the variability of the large number of young Australian women aspiring to combine paid work and family.

Korda R, Banks E, Clements M & Young A. Is inequity undermining Australia's 'universal' health care system? Socio-economic inequalities in the use of specialist medical and non-medical ambulatory health care. *Australian and New Zealand Journal of Public Health*. 2009; 33(5) 458-465.

Objectives: To quantify need-adjusted socioeconomic inequalities in medical and non-medical ambulatory health care in Australia and to examine the effects of specific interventions, namely concession cards and private health insurance (PHI), on equity.

Methods: We used data from a 2004 survey of 10,905 Australian women aged 53 to 58 years. We modelled the association between socio-economic status and health service use - GPs, specialists, hospital doctors, allied and alternative health practitioners, and dentists - adjusting for health status and other confounding variables. We quantified inequalities using the relative index of inequality (RII) using Poisson regression. The contribution of concession cards and PHI in promoting equity/inequity was examined using mediating models.

Results: There was equality in the use of GP services, but socio-economically advantaged women were more likely than disadvantaged women to use specialist (RII=1.41, 95% CI:1.26-1.58), allied health (RII=1.21,1.12-1.30) , alternative health (RII=1.29,1.13-1.47) and dental services (RII=1.61,1.48-1.75) after adjusting for need, and they were less likely to visit hospital doctors

(RII=0.74,0.57-0.96). Concession cards reduced socio-economic inequality in GP but not specialist care. Inequality in dental and allied health services was partly explained by inequalities in PHI.

Conclusions and implications: Substantial socio-economic inequity exists in use of specialist and non-medical ambulatory care in Australia. This is likely to exacerbate existing health inequalities, but is potentially amenable to change.

Lee C, Ford J & Gramotnev H. The Life Control Scale: Validation with a population cohort of middle-aged Australian women. *International Journal of Behavioural Medicine.* 2009; 16(2) 148-157.

Background: The concept of perceived control is central to many theories of physical and emotional well-being. However, existing measures are lengthy and generally focus on job control. In epidemiological research, brief measures and those which can be applied across entire populations are needed. Among women in particular, a substantial minority have no paid work, while most also have major unpaid family commitments which may affect well-being through their effect on control. Thus, we evaluated the six-item Life Control Scale (Bobak, Soc Sci Med. 47:269-79, 1998) with a population-based sample of middle-aged women.

Method: A population-based sample of 11,223 women aged 50 to 55, participating in the Australian Longitudinal Study on Women's Health, completed the Life Control Scale as part of an omnibus survey of health and psychosocial factors.

Results: The scale was demonstrated to be unifactorial and internally reliable and to show the expected relationships with several measures of socioeconomic position, physical health, and mental health.

Conclusion: The Life Control Scale is brief, valid, and broadly applicable in epidemiological research.

Loxton D, Powers J, Schofield M, Hussain R & Hosking S. Inadequate cervical cancer screening among mid-aged Australian women who have experienced partner violence. *Preventive Medicine.* 2009; 48, 184-188.

Objectives: Partner violence is linked to cervical cancer and other gynaecological conditions. However, results of current research into associations between partner violence and cervical cancer screening have been inconclusive. Therefore, the current research investigates the association between partner violence and inadequate cervical cancer screening.

Methods: Participants were 7312 women aged 45–50 years who responded to the Australian Longitudinal Study on Women's Health population-based surveys in 1996 and 2004. The women self-reported frequency of Pap smears via mailed questionnaire.

Results: Women who had experienced partner violence at least eight years earlier, compared with those who had not, were more likely to report current inadequate screening (OR: 1.42, 95%CI: 1.21; 1.66). After adjusting for known barriers to preventive screening (education, income management, marital status, general practitioner visits, chronic conditions) and depression, partner violence was independently associated with inadequate Pap tests (OR: 1.20, 95%CI: 1.01; 1.42). This association was no longer significant once access to a GP of choice was added to the model (OR: 1.18, 95%CI: 0.99; 1.40).

Conclusions: The significance of this study lies not just in confirming a negative relationship between cervical cancer screening and partner violence, but in suggesting that good access to a physician of choice appears to significantly decrease this negative relationship.

Magin P, Sibbritt D, Bailey K. The relationship between psychiatric illnesses and skin disease: a longitudinal analysis of young Australian women. *Archives of Dermatology.* 2009; 145(8) 896-902.

Objective: To examine longitudinally the relationship between skin disease and psychological morbidity in young women, testing the hypothesis that psychological morbidity (depression, anxiety, and stress) is a factor in the causation of skin disease.

Design: The Australian Longitudinal Study on Women’s Health was designed to investigate multiple factors affecting the health and well-being of women over a 20-year period. Data from 3 surveys (conducted in 2000, 2003, and 2006) were analyzed. Multivariate longitudinal generalized estimating

equation models, with and without time lag, were used to determine significant factors associated with skin disease (including anxiety, depressive symptoms, and stress).

Setting: An Australian community-based study. Participants: Women, aged 22 to 27 years at the time of the first survey, were randomly selected from the Australian National Medicare database. Participant numbers for the surveys from the years 2000, 2003, and 2006 were 9688, 9081, and 8910, respectively.

Main Outcome Measures: Outcome measures were the scores from the Center for Epidemiologic Studies Depression Scale, the Perceived Stress Questionnaire for Young Women, and an item to elicit reporting of anxiety symptoms.

Results: Of 6630 women providing data on skin diseases on all 3 surveys, 8.0% (n=523) reported having skin problems on all 3 occasions; 12.1% (n=803) on 2 occasions; and 23.9% (n=1582) on 1 occasion. On the 2000, 2003, and 2006 surveys, prevalence of skin problems was 24.2%, 23.9%, and 24.3%, respectively. In the generalized estimating equation models, depression symptoms and stress (but not anxiety) were significantly associated with skin problems (*P*=.005).

Conclusion: The findings of this relationship of depression and stress to skin disease may have considerable clinical implications, including implications for adjunctive psychological interventions in the management of patients with skin disease.

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

Aims: To examine prospectively continuity and change in smoking behaviour and associated attributes over a 10-year period.

Design, setting and participants: Participants (initially aged 18-23 years) in the Australian Longitudinal Study on Women's Health completed postal questionnaires in 1996, 2000, 2003 and 2006. The analysis sample was 6840 women who participated in all surveys and provided complete smoking data.

Measurements: Outcome variables were transitions in smoking behaviour between surveys 1 and 2, 2 and 3, 3 and 4 and 1 and 4. Attributes that differentiated continuing smokers from quitters, relapsers from ex-smokers and adopters from never smokers were examined for each survey period. Explanatory variables included previous smoking history, demographic, psychosocial, life-style risk behaviour and life-stage transition factors.

Findings: Over 10 years, 23% of participants either quit, re-started, adopted or experimented with smoking. Recent illicit drug use and risky or high-risk drinking predicted continued smoking, relapse and smoking adoption. Marriage or being in a committed relationship was associated significantly with quitting, remaining an ex-smoker and not adopting smoking. Living in a rural or remote area and lower educational attainment were associated with continued smoking; moderate and high physical activity levels were associated positively with remaining an ex-smoker.

Conclusions: Life-style and life-stage factors are significant determinants of young women's smoking behaviour. Future research needs to examine the inter-relationships between tobacco, alcohol and illicit drug use, and to identify the determinants of continued smoking among women living in rural and remote areas. Cessation strategies could examine the role of physical activity in relapse prevention.

Polimeni A, Austin S & Kavanagh A. Sexual orientation and weight, body image and weight control practices among young Australian women. *Journal of Women's Health*. 2009; 18(3) 355-362.

Objectives: We compare weight, body image, and weight control practices of young adult Australian women according to sexual orientation.

Methods: Cross-sectional analyses of the second survey of 9683 young adult women in the Australian Longitudinal Study on Women's Health (ALSWH); the weight, weight control practices, and body image of exclusively heterosexual, mainly heterosexual, bisexual, and lesbian women were compared.

Results: Lesbians were less likely to be dissatisfied with their body image (body weight: β -0.64, 95%

CI -1.10- -0.18; body shape: β -0.83, 95% CI -1.27- -0.40; overall: β -0.74, 95% CI -1.14- -0.32), to cut down on fats and sugars (OR 0.53, 95% CI 0.34-0.85), and to engage in healthy weight control practices overall (OR 0.48, 95% CI 0.29-0.81) compared with exclusively heterosexual women. Compared with exclusively heterosexual women, bisexual women were more likely to weight cycle (OR 2.22, 95% CI 1.22-4.03). Compared with exclusively heterosexual women, mainly heterosexual and bisexual women were more likely to engage in unhealthy weight control practices overall (mainly heterosexual: OR 1.76, 95% CI 1.42-2.17; bisexuals: OR 2.89, 95% CI 1.57-5.33), such as smoking (mainly heterosexuals: OR 1.83, 95% CI 1.38-2.44; bisexuals: OR 3.80, 95% CI 1.94-7.44) and cutting meals (mainly heterosexuals: OR 1.58, 95% CI 1.23-2.02; bisexual women: OR 3.45, 95% CI 1.82-6.54). Mainly heterosexual women were more likely to vomit (mainly heterosexuals: OR 2.41, 95% CI 1.73-3.36) and use laxatives (mainly heterosexuals: OR 1.56, 95% CI 1.12-2.19).

Conclusions: Future research should explore why bisexual and mainly heterosexual women are at higher risk of disordered eating behaviours. Understanding why lesbians have a healthier body image would also provide insights into how to improve the body image of other groups. It is critical that public health policy and practice address less healthy weight control practices of sexual minority groups.

Read CM, Bateson DJ, Weisberg E, Estoesta J. Contraception and pregnancy then and now; examining the experiences of a cohort of mid age Australian women. *Australian and New Zealand Journal of Obstetrics and Gynaecology.* 2009; 49 (4) 429-433.

Background: More than 50% of women who have an unplanned pregnancy report using a contraceptive method. Since the launch of the pill 50 years ago, a number of cross-sectional surveys have examined contraceptive use in the Australian context. There is, however, little data on contraceptive use and efficacy over a woman's reproductive years.

Aim: To determine the pattern of contraceptive use of Australian women over their reproductive lifespan, with particular emphasis on the relationship between contraceptive use and pregnancy.

Method: One thousand women from the mid-age cohort of the Australian Women's Longitudinal Study were invited to participate in the Family Planning survey by completing a questionnaire about their reproductive histories.

Results: Completed questionnaires were received for 812 women. The contraceptive pill was the most commonly ever used contraceptive method at 94% and also the most commonly used method prior to all pregnancies. Contraceptive failure increased with increasing gravidity; 11.4% with the first pregnancy to 23.0% with the fourth pregnancy, while 28.8% of the respondents reported an 'accidental' pregnancy due to stopping contraception for reasons such as concern about long-term effects and media stories.

Conclusions: While surveys indicate that 66–70% of Australian women use a contraceptive method, more than half of unplanned pregnancies apparently occur in women using contraception. The modern Australian woman, in common with her predecessors, still faces significant challenges in her fertility management. This survey provides a longitudinal perspective on contraceptive use in relation to pregnancy and highlights the issue of efficacy of contraceptives in real-life situations.

Rowlands I & Lee C. Correlates of miscarriage among young women in the Australian Longitudinal Study on Women's Health. *Journal of Reproductive and Infant Psychology.* 2009; 27(1) 40-53.

While evidence suggests that miscarrying women experience poor mental health, the research is limited and comparison groups are frequently unrepresentative or lacking altogether. The current study examined the health and wellbeing of miscarrying women in relation to their peers by comparing them on selected relevant sociodemographic, gynaecological, psychological and health behaviour variables. Survey 3 of the Younger cohort of the nationally representative Australian Longitudinal Study on Women's Health was used to identify 998 women aged 24-31 who reported ever having had a miscarriage, and 8083 women who reported never having had a miscarriage. Although univariate analyses indicated that women who had had miscarriages experienced poorer mental health, multivariate analysis indicated that these effects were explained by sociodemographic and lifestyle differences. Stepwise logistic regression showed that miscarrying women were more likely to be married, to have had a child, to be current or ex smokers and to be not using contraception, to have lower levels of education; and to be of low socio-economic status. These results indicate that the strongest correlates of miscarriage among young women are those associated with preparing for, or

experiencing, motherhood, and it may be that these factors rather than the miscarriage itself explain any excess of mental health problems in this population.

Smith MD, Russell A & Hodge P. Do incontinence, breathing difficulties, and gastrointestinal symptoms increase the risk of future back pain? *The Journal of Pain*. 2009; 10(8) 876-886.

Cross-sectional studies have suggested a relationship between respiratory disorders, incontinence, gastrointestinal symptoms, and back pain. However, longitudinal data are lacking. This study aimed to evaluate whether these disorders increase risk for the development of back pain. A total of 2943 younger, 2298 mid-age, and 2258 older women from the Australian Longitudinal Study on Women's Health who reported no back pain during the preceding 12 months were followed for 4, 2, and 3 years, respectively. Crude and adjusted associations between the development of back pain and changes in the presence of incontinence, breathing difficulty, and gastrointestinal symptoms were assessed with logistic regression. Women with preexisting incontinence (prevalence ratios [PR]: 1.26 to 1.46) and gastrointestinal symptoms (PR: 1.24 to 1.44) and women who developed breathing problems (PR: 1.63 to 2.11) were more likely to develop back pain than women without such problems. Menstrual pain and allergy were also associated with back pain development. Consistent with predictions from physiological data, this study provides novel evidence that the presence and/or development of incontinence, respiratory problems, and gastrointestinal symptoms are associated with the development of back pain. This highlights the importance of comorbidities and suggests opportunities for future preventative interventions. Perspective: This study demonstrates that women with incontinence, respiratory disorders, and gastrointestinal symptoms have increased risk for the development of back pain. Evidence of compromised control of the spine in people with incontinence and respiratory disorders and the potential for viscerosomatic hyperalgesia in people with gastrointestinal symptoms may provide physiological explanations for these findings.

Tudor-Locke C, Burton NW & Brown WJ. Leisure-time physical activity and occupational sitting: Associations with steps/day and BMI in 54–59 year old Australian women. *Preventive Medicine.* 2009; 48, 64-68.

Objective: To assess whether combinations of leisure-time physical activity (PA) and occupational sitting were associated with steps/day and objectively measured body mass index (BMI) in women aged 54–59 years.

Methods: In 2005, 158 women (age=56.4±1.4) living in Brisbane, Australia, were measured for height and weight, wore a pedometer for 7 days, and reported frequency and duration of leisure-time PA and extent of occupational sitting. Four groups were formed: (1) sufficiently active and some/little/no occupational sitting (n=52); (2) sufficiently active and mostly/all occupational sitting (n=29); (3) insufficiently active and some/little/no occupational sitting (n=43); and (4) insufficiently active and mostly/all occupational sitting (n=34). Analysis of variance (ANOVA) was used to examine group differences in mean steps/day and BMI.

Results: Mean±standard deviation (SD) steps/day for each group (indicated by numerical order above) was: (1) 9997±2854; (2) 9424±3120; (3) 8995±2965; (4) 7276±2816 [F(3,154)=6.139, p=.001]. BMI (kg/m2) was: (1) 25.5±3.9); (2) 26.9±4.1; (3) 26.5±4.7; (4) 29.7±7.9 [F(3,154)=4.57, p=.004]. Mean steps/day were significantly lower, and BMI significantly higher, in group 4 than in all other groups. No other differences were significant.

Conclusions: These cross-sectional data suggest that it might be important to consider both leisure-time PA and occupational sitting when considering strategies to increase steps/day and promote healthy BMI in mid age women.

Vagenas D, McLaughlin D & Dobson A. Regional variation in the survival and health of older Australian women: a prospective cohort study. *Australian and New Zealand Journal of Public Health.* 2009; 33(2) 119-125.

Objective; Older people may act as sensitive indicators of the effectiveness of health systems. Our objective is to distinguish between the effects of socio-economic and behavioural factors and use of health services on urban-rural differences in mortality and health of elderly women.

Methods: Baseline and longitudinal analysis of data from a prospective cohort study. Participants

were a community-based random sample of women (n=12778) aged 70-75 years when recruited in 1996 to the Australian Longitudinal Study on Women's Health. Measures used were: urban or rural residence in Australian States and Territories, socio-demographic characteristics, health related behaviour, survival up to 1 October 2006, physical and mental health scores and use of medical services.

Results: Mortality was higher in rural than in urban women (hazard ratio, HR 1.14; 95% CI, 1.03,-1.26) but there were no differences between States and Territories. There were no consistent baseline or longitudinal differences between women for physical or mental health, with or without adjustment for socio-demographic and behavioural factors. Rural women had fewer visits to general practitioners (odds ratio, OR=0.54; 95% CI, 0.48-0.61) and medical specialists (OR=0.60; 95% CI, 0.55-0.65).

Conclusions: Differences in use of health services are a more plausible explanation for higher mortality in rural than urban areas than differences in other factors.

Implications. Older people may be the 'grey canaries' of the health system and may thus provide an 'early warning system' to policy makers and governments.

7.2.2 Book chapter published

Zumin S & Byles J**.** Fruit and vegetable consumption among mid-age and older women in Australia. In Nancy Bernhardt & Artur Kasko (Eds.) *Nutrition for the Middle Aged and Elderly.* New York: Nova Science*.* 2008; 299-317

Fruits and vegetables are essential components of a healthy diet. However, only limited information is available about the fruit and vegetable intake of older women. This study describes the socio-demographic and health correlates of intake of fruit and vegetables among two large cohorts of Australian women – one group aged 50-55 years and one aged 79-84 years. Almost all women ate some amount of fruit and vegetables each day. In each cohort, around 8-9% of the women ate five or more serves of vegetables each day, and 30% ate four or more serves each day. In the Mid-age cohort, around 60% of the women ate two or more servings of fruit each day, and the corresponding proportion for the Older cohort was 70%. Around 7-8% of each cohort could be considered to eat the nation recommended intake of two serves of fruit and five serves of vegetables. Eating higher levels of fruit and vegetables was associated with country of birth, education, marital status, and with functional abilities and oral health. Longitudinal analyses describe trends in BMI, health-related quality of life and survival according to women's fruit and vegetable intakes.

7.2.3 Conference proceeding published

Bruck D & Astbury J. Sleeping difficulty in young women: Comparative influence of demographic, illness, lifestyle, abuse and affective factors. *Visions of the Night: Sleep, Science and Research on the World Stage.* Australasian Sleep Association and Australasian Sleep Technologies Association 21st Annual Scientific Meeting 2009. A24

Different factors in relation to self reported difficulty sleeping in young Australian women aged in their late 20s were examined. Two multiple regression models were compared in terms of their prediction of difficulty sleeping over the last 12 months. Both models incorporated the same demographic, illness, lifestyle and abuse variables, however, the second model also included two affective variables: self reported symptoms of depression and intense anxiety. It was hypothesised that in the second model any predictive influence of the demographic, illness, lifestyle and abuse variables on sleeping difficulty would be reduced, due to controlling for depression and anxiety symptoms.

Methods: The data was self-reported by the 'younger' cohort, aged 24–30 years in the third wave of the Australian Longitudinal Study of Women's Health in 2003. Two sub-groups within the sample are compared: a difficulty sleeping group – often' (n = 971) and a group with no major difficulty sleeping – 'never' or rarely' (n = 6115). Those who said they 'sometimes' had difficulty sleeping were not considered unless they took prescription sleeping medication. The mean age was 27.14 years (SD = 1.45). The return rate was 65.4%. A series of analyses were conducted with difficulty sleeping versus good sleep as the dependent variable and dichotomous, ordinal, and interval variables in five groups: Demographic: employment, highest qualification, income level. Illness: any diagnosed major illness (physical or mental) in last 12 months. Lifestyle: frequency of binge drinking, combining drugs with alcohol, daily smoking, brisk walking and bodyweight dissatisfaction.

Abuse: any abuse (emotional, sexual, physical) in the last 3 years. Affective: report of symptoms of depression or intense anxiety in last 12 months (4 point scale).

Results: Model 1: All 10 demographic, illness, lifestyle, and abuse variables were submitted to a logistic regression (OLS) with difficulty sleeping as the dependent variable. Seven of the variables were found to be significant predictors of difficulty sleeping ($p < 0.05$). Model 2: The two affective variables (depression, intense anxiety) were also included and the logistic regression rerun (12 variables). In Model 2 the two affective variables were significant, but only two of the other 10 variables remained significant predictors (bodyweight dissatisfaction and abuse history).

Discussion: Self reported symptoms of depression and intense anxiety are the most important predictors of difficulty sleeping in young women. When these variables were controlled most of the previously significant demographic, illness and lifestyle variables were no longer significant predictors.

7.2.4 Papers accepted

Berecki J, Begum N & Dobson A. Symptoms reported by women in mid-life: menopausal transition or ageing? *Menopause*

Objective: The aim of this study was to determine which symptoms commonly reported by women at mid-life are associated with menopausal transition, after adjusting for ageing, life events, sociodemographics and lifestyle factors.

Design: Middle-aged women participating in the Australian Longitudinal Study on Women's Health between 1996 (Survey 1, ages 45 to 50) and 2007 (Survey 5) were included in the analyses if natural menopausal status could be determined at any survey (n=8649 out of 13716 participants). Natural menopausal status was determined from reported menstruation patterns. A survival function describing age at menopause was computed. Logistic regression models for repeated measures were used to estimate the association between menopausal stage and symptom prevalence.

Results: There were 6814 (79%) women who reached natural menopause before 2007. The median age at menopause was 52 years. Compared to the premenopausal phase, the menopause was associated with hot flushes night sweats and to a lesser extent with stiff or painful joints, difficulty sleeping, and poor/fair self-rated health, after controlling for confounders. Prevalence of some symptoms was still raised more than 7 years after menopause. Headaches/migraines were negatively, and urinary incontinence positively associated with ageing.

Conclusions: Treatment such as hormone replacement therapy should be targeted at vasomotor symptoms which are most strongly associated with menopause rather than at less specific symptoms related to ageing per se.

Berecki J, Spallek M, Hockey R & Dobson A. Height loss in elderly women is preceded by osteoporosis and is associated with digestive problems and urinary incontinence. *Osteoporosis International*

Summary: This study explores risk factors for height loss and consequences in terms of health and wellbeing, in older women. Osteoporosis, low body-mass index, being born in Europe and using medications for both sleep and anxiety were risk factors for height loss. Height loss was associated with digestive problems; excessive height loss was also associated with urinary stress-incontinence and a decline in self-rated health.

Introduction: Height loss is associated with osteoporosis, but little is known about its consequences. We aimed to examine the risk factors for height loss and the symptoms associated with height loss.

Methods: Elderly participants of the Australian Longitudinal Study on Women's Health (aged 70-75 in 1996) who provided data on height at any two consecutive surveys (held in 1996, 1999, 2002, and 2005) were included (N = 9,852). A regression model was fitted with height loss as the outcome and sociodemographics, osteoporosis, and other risk factors as explanatory variables. Symptoms related to postural changes or raised intra-abdominal pressure were analyzed using height loss as an explanatory variable.

Results: Over 9 years, average height loss per year was -0.12% (95% confidence intervals [95% CI] = -0.13 to -0.12) of height at baseline. Height loss was greater among those with osteoporosis and low body mass index and those taking medications for sleep and anxiety. After adjusting for confounders, symptoms associated with height loss of ≥2% were heartburn/indigestion (odds ratio [OR] = 1.19, 95% CI = 1.01 to 1.40), constipation (OR = 1.18, 95% CI = 1.01 to 1.37), and urinary stress incontinence (OR = 1.20, 95% CI = 1.02 to 1.41).

Conclusion: These findings highlight the importance of monitoring height among the elderly in general practice and targeting associated symptoms.

Berecki-Gisolf J, Humpheyes-Reid L, Wilson AJ, Dobson A. Angina symptoms predict mortality in older women with ischemic heart disease. *Circulation*

Background: Angina symptoms have been reported to predict mortality in men. The aim of this study was to investigate the association between angina symptoms and mortality in women.

Methods and results: In 2004, 873 older participants in the Australian Longitudinal Study on Women's Health, with self-reported ischemic heart disease (IHD), participated in a nested substudy. Women were aged 77 to 83 years; 165 (19%) died during the 4.5 year follow-up. Angina symptoms were established using the Seattle Angina Questionnaire (SAQ) scores for physical limitation, angina frequency, angina stability and disease perception. Proportional hazards modelling was used to examine SAQ score differences in mortality. Physical limitation scores were associated with mortality, with hazard ratios (HRs) of 1.1, 1.9 and 3.4 for mild, moderate, and severe vs. minimal limitations, respectively (p<0.001). Angina frequency scores were also associated with death, with HRs of 1.2, 1.2 and 4.8 for mild, moderate and severe vs. minimal angina frequency, respectively (p<0.001). Age, pulmonary disease and kidney disease were statistically significantly associated with mortality in a multivariable model of clinical predictors. In a combined model with SAQ scores and clinical predictors, SAQ scores for physical limitation and angina stability remained statistically significantly associated with mortality.

Conclusions: In older women with IHD, angina symptoms assessed using SAQ scores for physical limitations and angina frequency were associated with mortality; SAQ scores may therefore prove a useful tool for risk assessment in this patient group.

Beatty L, Lee C & Wade T. A prospective examination of perceived stress as a mediator of the relationship between life-events and QOL following breast cancer, *British Journal of Health Psychology.*

No abstract available.

Brown WJ, Hockey R, Dobson, AJ**.** Effects of having a baby on weight gain. *American Journal of Preventive Medicine*

No abstract available

Eime RM, Harvey JH, Payne WR & Brown WJ. Does sports club participation contribute to health-related quality of life?*Medicine and Science in Sport and Exercise*

No abstract available.

Flicker L, McCaul KA, Almeida OP, Hankey GJ, Jamrozik K, Brown W, Byles J. Body mass index and mortality in men and women aged 70 to 75 years. *Journal of the American Geriatric Society*

No abstract available.

Herbert D Lucke J & Dobson A. Depression: An emotional obstacle to seeking medical advice for infertility. *Fertility and Sterility*

Objective: To investigate the mental and general health of infertile women who have not sought medical advice for their recognized infertility, and therefore, not represented in clinical populations.

Design: Longitudinal cohort study

Setting: Population-based

Patient(s): Participants in the Australian Longitudinal Study on Women's Health aged 28-33 years in 2006 who had ever tried to conceive or had been pregnant (n=5936).Intervention(s): None

Main outcome measure(s): Infertility; not seeking medical advice

Result(s): Compared with fertile women (n=4905), infertile women (n=1031) had higher odds of self-reported depression (OR=1.20, 95%CI 1.01-1.43), endometriosis (5.43,4.01-7.36), polycystic ovary syndrome (9.52,7.30-12.41), irregular periods (1.99,1.68-2.36), Type II diabetes (4.70,1.79-12.37) or gestational diabetes (1.66,1.12-2.46). Compared with infertile women who sought medical advice

(n=728), those who had not sought medical advice (n=303) had higher odds of self-reported depression (1.67,1.18-2.37), other mental health problems (3.14,1.14-8.64), urinary tract infections (1.67,1.12-2.49), heavy periods (1.63,1.16-2.29) or a cancer diagnosis (11.33,2.57-49.89). Infertile women who had or had not sought medical advice had similar odds of reporting an anxiety disorder or anxiety-related symptoms.

Conclusion(s): Women with self-reported depression were unlikely to seek medical advice for infertility. Depression and depressive symptoms may be barriers to seeking medical advice for infertility.

Herbert D, Lucke J & Dobson A. Infertility in Australia circa 1980: A historical population perspective on the uptake of fertility treatment by Australian women born in 1946-51. *Australian and New Zealand Journal of Public Health*

Objective: To estimate the prevalence of lifetime infertility in Australian women born in 1946-51 and examine their uptake of treatment.

Methods: Participants in the Australian Longitudinal Study on Women's Health born in 1946-51 (n=13715) completed up to four mailed surveys from 1996 to 2004. The odds of infertility were estimated using logistic regression with adjustment for socio-demographic and reproductive factors.

Results: Among participants, 92.1% had been pregnant. For women who had been pregnant (n=12738): 56.5% had at least one birth but no pregnancy loss (miscarriage and/or termination); 39.9% experienced both birth and loss; and 3.6% had a loss only. The lifetime prevalence of infertility was 11.0%. Among women who reported infertility (n=1511), 41.7% used treatment. Women had higher odds of infertility when they had reproductive histories of losses only (OR range 9.0-43.5) or had never been pregnant (OR=15.7, 95%CI 11.8-20.8); and higher odds for treatment: losses only (OR range 2.5-9.8); or never pregnant (1.96, 1.28-3.00). Women who delayed their first birth until aged 30+ years had higher odds of treatment (OR range 3.2-4.3).

Conclusions: About one in ten women experienced infertility and almost half used some form of treatment, especially those attempting pregnancy after 1980. Older first time mothers had an increased uptake of treatment as assisted reproductive technologies (ART) developed.

Implications: This study provided evidence of the early uptake of treatment prior to 1979 when the national register of invasive ART was developed and later uptake prior to 1998 when data on non-invasive ART were first collected.

Lowe J. Does systematically organized care improve outcomes for women with diabetes? *Journal of Evaluation in Clinical Practice*

No abstract available.

Marshall A, Miller Y, Burton N & Brown W. Measuring total and domain-specific sitting: A study of reliability and validity. *Medicine and Science in Sport and Exercise.*

No abstract available.

Ross L, Anstey K, Kiely K, Windsor T, Byles J, Luszcz M & Mitchell P. Older drivers in Australia: Trends in Driving status and cognitive and visual impairment. *Journal of the American Geriatrics Society*

No abstract available.

Sibbritt D & Adams J. Back pain amongst 8,910 young Australian women: A longitudinal analysis of the use of conventional providers, complementary and alternative medicine (CAM) practitioners and self-prescribed complementary and alternative medicine (CAM). *Clinical Rheumatology*

No abstract available.

Sibbritt D, Byles J & Tavener M. Older Australian Women's use of dentists: A longitudinal analysis over 6 years. *Australasian Journal of Ageing*

No abstract available.

7.3 Conference presentations

Astbury J. The impact of forced sex on psychological health, high risk health behaviours and service use. Sexual Violence Research Initiative Forum, Johannesburg, South Africa, 6-8 July 2009.

Au N. Employment, long work hours and obesity among women. International Health Economics Association World Congress, Beijing, China 14 July 2009.

Au N. Employment, long work hours and obesity among women. AHES 2009: 31st Australian Conference for Health Economists, Hobart, Tas, 01 October 2009.

Berecki J, Begum N & Dobson A. Symptoms reported by women in mid-life: Menopausal transition or ageing (poster presentation). EMAS 8th European Congress on Menopause London, UK, May 16-20 2009.

Bowe SJ, Sibbritt DW, Young AF & Barnett AG. Analysing longitudinal changes in health related quality of life: Adjusting for longitudinal missing data that are MNAR. International Epidemiological Association World congress, Porto Alegre, Brazil, 20-24 September 2008**.**

Brown W. Determinants of weight gain in young adult women. Heart Foundation Conference 2009, Brisbane, Qld, 14-16 May 2009.

Brown W, Hockey R & Dobson A. Ten year weight gain in Australian women: What difference does having a baby make? (symposium contribution) 2009 Annual Conference of the International Society of Behavioral Nutrition and Physical Activity, Lisbon, Portugal, 17-19 June 2009.

Brown W. Developing valid and reliable estimates of sitting time for large scale prospective studies, population based studies and intervention trials. American College of Sports Medicine Annual Meeting, Seattle, USA, 27-30 May 2009**.**

Brown W. Physical activity and health in women: Updating the evidence. 14th Annual Congress of the European College of Sport Science, Oslo, Norway, 24-27 June 2009.

Brown W. Changes in physical activity across the lifespan: Australian Longitudinal Study on Women's Health. American College of Sports Medicine Annual Meeting, Seattle, USA, 27-30 May 2009.

Burton NW, Tudor-Locke C & Brown WJ. Leisure activity and occupational sitting: Associations with daily steps and body mass index in mid-aged women. 2008 ASICS Conference of Science and Medicine in Sport, Hamilton Island, Queensland, 16-18 October 2008.

Chojenta C, Loxton D & Lucke J. An examination of the narratives of women who have experienced postnatal depression in Australia. 5th International Mixed Methods Conference, University of Leeds, UK, 8 - 11 July 2009.

Conrad S, Tooth L & Dobson A. Was sesame street on to something? Why do 'people in your neighbourhood' matter, and how do they affect health outcomes? Public Health Association of Australia Queensland Branch Second Annual Conference, Brisbane, Qld, 23-24 July 2009.

Dobson A & Loxton D. The health of women in rural areas. 10th National Rural Health Conference, Cairns, Queensland, 18 May 2009.

Dobson A. Dietary patterns of Australian women. Heart Foundation Conference 2009, Brisbane, Queensland, 15 May 2009.

Dobson A. Depression and anxiety associated with cardiovascular disease in mid-aged Australian women. Heart Foundation Conference 2009, Brisbane, Qld, 14-1 May 2009.

Flicker L. Sexual health in older men and women. Australian and New Zealand Society for Geriatric Medicine 2009 Annual Scientific Meeting, Freemantle, WA, 7-9 September 2009.

Flicker L. BMI and survival in older men and women aged 70 to 75 years. XIXth IAGG World Congress of Gerontology and Geriatrics, Paris, France, 5-9 July 2009**.**

Flicker L. Sexual behaviours in older men. XIXth IAGG World Congress of Gerontology and Geriatrics, Paris, France, 5-9 July 2009.

Flicker L. BMI and survival in older men and women aged 70 to 75 years. Australian and New Zealand Society for Geriatric Medicine 2009 Annual Scientific Meeting, Freemantle, WA, 7-9 September 2009.

Goldstein G, Physical activity as a risk factor for endometriosis (poster presentation). American College of Physicians Maine Chapter Scientific Meeting Maine, USA, 16 October 2009.

Goldstein G. Physical activity as a risk factor for endometriosis (poster presentation). Chicago Area Undergraduate Research Symposium Chicago, USA, 18 April 2009.

Goldstein G. Physical activity as a risk factor for endometriosis (poster presentation). Northwestern University Undergraduate Research Symposium, Illinois, USA, 26 May 2009.

Hodges PW, Russell A & Smith MD. Incontinence and breathing disorders increase the risk for development of back pain. 2009 Spine Society of Australia Annual Conference, Brisbane, Qld, 16-19 April 2009.

Johnstone M. Emerging adulthood and young Australian women's aspirations for work and family**.** 2009 British Psychological Society Annual Conference, Brighton, United Kingdom, 1-3 April 2009.

Johnstone M, Lucke J, & Lee C. The impact of first birth and other life events on young Australian women's motherhood and employment aspirations. The British Sociological Association Annual Conference, Cardiff, Wales, 16-19 April 2009.

Johnstone M. The health and well-being of young Australian women with varying work and family aspirations (poster presentation). 2009 Australasian Society for Behavioural Health and Medicine Conference, Auckland, New Zealand 9-11 February 2009.

Loxton D, Adamson L, Chojenta C & Rich J. Women's experiences of violence and abuse: A longitudinal qualitative perspective. 15th Annual Qualitative Health Research Conference, Vancouver, British Columbia, 4-6 October 2009.

McLaughlin D. CAM and health care choices in older rural women. NORPHCAM Complementary and Alternative Medicine Research Conference, St Lucia, Qld, 17-18 October 2009.

Mooney R. A study of conviction: Desires and doubts about having children. The Australian Sociological Association Conference 2009, Canberra, ACT, 1-4 December 2009.

Parkinson L, Byles J, Gibson R & Robinson I. Arthritis and depression: The burden of suffering for older Australian Women. PHAA 39th Annual Conference, Canberra, ACT, 28-30 September 2009.

Parkinson L, Vitry A, Hawker G, Zaninotto P & Chatterji S. Depression as a comorbidity with chronic illness: Longitudinal research from the developed and developing world (symposium). IAGG 2009 World Congress of Gerontology and Geriatrics, Paris, France, 5-9 July 2009.

Powers J. Does wave non-response affect the results in longitudinal studies? Australasian Epidemiological Association Annual Scientific Meeting, Dunedin, New Zealand, 31 August - 01 September 2009.

Rowlands I. Looking on the bright side of life: Predicting long-term adjustment to miscarriage. Australasian Society for Behavioural Health and Medicine 6th Annual Scientific Conference, Auckland, New Zealand, 9-11 February 2009.

Sibbritt D. The physical and mental health of mid-aged Australian women with chronic back pain who consult with chiropractors and osteopaths. Chiropractic and Osteopathic College of Australia (COCA) 8th Biennial Conference, Sydney, NSW, 20-22 November 2009.

Sibbritt D. A longitudinal analysis of mid-age Australian women's consultations with an acupuncturist, 2001-2007. Australasian Acupuncture & Chinese Medicine Annual Conference Melbourne, Victoria, 22-24 May 2009.

Spencer E, Ferguson A & Craig H. Developing a reference set for higher level language resources in aging adults: Preliminary thoughts (poster presentation). HCS Net Workshop on Building the Australian National Corpus: Data Resources and tools, Sydney, NSW, 03 December 2009.

Taft A. The impact of partner violence on the mental health of young Australian women reporting termination of pregnancy: Cohort analysis of a national population sample. 2009 General Practice and Primary Health Care Research Conference, Melbourne, VIC, 17 July 2009.

Taft A. The impact of abortion on depression: What role does partner violence play? Findings from the Australian Longitudinal Study on Women's Health. Family Violence Prevention Fund, National Conference on Health and Domestic Violence, Louisiana, USA, 9-10 October 2009.

Tavener M, Byles J & Loxton D. Contrasting baby boomer identities through narrative. 15th Annual Qualitative Health Research Conference, Vancouver, British Columbia, 4-6 October 2009.

Tavener M. Identity construction in baby boomer women (part of a baby boomer symposium). 42nd Australian Association of Gerontology National Conference Canberra, ACT, 25-27 November 2009.

Taylor A. Letters home and postcards from the edge: Meaning and relationship in a large scale survey. 15th Annual Qualitative Health Research Conference, Vancouver, British Columbia, 4-6 October 2009.

Teede H, Deeks A, Gibson-Helm M, Lombard C, Jolley D, Paul E, Loxton D & Lisa M. Polycystic ovarian syndrome in Australian women: Results of the Australian Longitudinal Women's Health study. ESA / SRB Annual Scientific Meeting, Adelaide, SA, 23 August 2009.

Van Gool K. The impact of OOP costs on cervical screening: Evidence from an Australian panel dataset, International Health Economics Association Wold Congress, Beijing, China, 14 July 2009.

van Uffelen J, Berecki J, Dobson A & Brown W. What is a healthy body mass index for women in their 70s? ISBNPA 2009 Conference, Lisbon, Portugal, 17-20 June 2009.

Williams L, Germov J & Young A. What effect does social class have on weight control in mid-age women? Evidence from the Australian Longitudinal Study on Women's Health (poster presentation). 17th European Congress on Obesity, Amsterdam, The Netherlands, 07 May 2009.

7.4 Media

7.4.1 Press

Date	Media	Title	ALSWH Collaborator
08-Nov-08	Brisbane Times (Life & style)	Fertility treatment for younger women	Danielle Herbert
09-Nov-08	The Sun Herald	Fertility treatment for younger women	Danielle Herbert
09-Nov-08	Sydney Morning Herald (Life & Style)	Fertility treatment for younger women	Danielle Herbert
16-Dec-08	The Sydney Morning Herald	Anti-depressants top PBS drug for women	Julie Byles / Deborah Loxton
16-Dec-08	Media release The University of Newcastle	New Study: antidepressants most common medication for Australian women	Julie Byles / Deborah Loxton
16-Dec-08	Courier Mail Brisbane	Cost of drugs threat to elderly - rise exceeds inflation	Julie Byles / Deborah Loxton
16-Dec-08	AAP	Medications for depression - Julie Byles spoke to Melissa Jenkins about the study	Julie Byles
16-Dec-08	GP Daily	Julie Byles spoke to Louise Durack who writes for GP daily about the study	Julie Byles
16-Dec-08	Media release	Towards a New National Women's Health Policy	The Hon Nicola Roxon MP and The Hon Tanya Plibersek MP Media Release
17-Dec-08	The Australian	Depression hits young women	Julie Byles / Deborah Loxton
17-Dec-08	Advertiser Canberra	Women hit by depression	J Byles / Deborah Loxton
17-Jan-09	The Sydney Morning Herald Weekend Edition	A pain more shared than we realize	Danielle Herbert, Jayne Lucke, Annette Dobson
19-Jan-09	The Sydney Morning Herald	Time to end secrecy and face the anguish of miscarriage	Danielle Herbert, Jayne Lucke, Annette Dobson
04-Mar-09	Bayside & Northern Suburbs Star / Brisbane	Study Reveals Usage Levels of Medication	Julie Byles / Deborah Loxton
August 09	Queensland Women's Health Network News	Increase in Younger Women's Weight	Compilation of unaltered excerpts from Women's Weight: Findings from the Australian Longitudinal Study on Women's Health

7.4.2 Television and radio

Date	Media	Title	ALSWH Collaborator
17-Dec-08	2HD Newcastle	Depression in younger women study	Julie Byles / Deborah Loxton
17-Dec-08	2NC Newcastle	Depression in younger women study	Julie Byles / Deborah Loxton

8. ARCHIVING

A requirement of the contract with the Department of Health and Ageing is that the ALSWH data are archived with the Australian Social Sciences Data Archive (ASSDA) at the Australian National University on an annual basis. Each year we archive the most recently completed data set and any new data sets that have been created. This year we have also re-archived all previously archived data sets. This is because each data set has had changes to the data as well as additions and deletions.

The data for Survey 5 of the 1946–1951 Cohort was archived in 2009. The files related with Survey 5 of the 1946-51 Cohort most recently deposited with ASSDA consisted of:

- Completed ASSDA forms
- 1946-51 Cohort Survey 5 Questionnaire
- 1946-51 Cohort Survey 5 level 'A' and 'B' data sets in both SAS and text format
- 1946-51 Cohort Survey 5 formats and labels in text format
- The latest version of the Data Dictionary
- Medications lists from 1946-51 Cohort Survey 5 in SAS format

All ALSWH data from Surveys 1 to 4 were archived again in 2009. This is to take account of the changes to the data since they were first archived. The questionnaires have not changed and were not archived again nor were other data sets that have not changed such as the Medications list from the 1921-26 Cohort. The files related with the re-archiving consisted of:

- All level 'A' and level 'B' data sets for all surveys in Surveys 1 to 4
- All formats and labels files in all surveys in Surveys 1 to 4

Note that the data in text format was not sent since these sets are not directly archived. The data in SAS format is converted into another format for archiving. The data set for Survey 5 of the 1921-26 Cohort will be archived in 2010.

As well as being a valuable and reliable off-site backup of all ALSWH data, archiving will make the data available for future use by other researchers, subject to certain conditions.

9. PROJECT STAFF

Research Centre for Gender, Health and Ageing University of Newcastle	
Co-Director ALSWH/RCGHA Director	Professor Julie Byles
Deputy Director	Dr Deborah Loxton
Statisticians	Ms Jenny Powers Ms Xenia Dolja-Gore
Data Manager Cohorts	Mrs Anna Graves
Data Assistant	Mr Ashutosh Kabra
Communication & Research Officer	Mrs Catherine Chojenta
Research Assistants	Ms Jenny Helman Ms Jane Rich
Executive Assistant	Mrs Lyn Adamson
Administrative Officer	Ms Melanie Moonen
Casual Project Assistants	Ms Alice Burgess Ms Laura Croger Ms Nicola Evans Ms Ashleigh O'Mara Ms Claire Rooney Ms Megan Wilson

At the University of Newcastle, Mrs Lyn Adamson, Mrs Catherine Chojenta, Ms Xenia Dolja-Gore, Mr Ashutosh Kabra and Ms Jane Rich have been working part-time on the project.

School of Population Health University of Queensland	
Project Director	Professor Annette Dobson
Deputy Director	Dr Jayne Lucke
Project Coordinator	Dr Leigh Tooth
Research Fellow	Dr Janneke Berecki
Data Manager-Surveys	Mr David Fitzgerald
Research Project Manager	Ms Megan Ferguson
Administration Officer	Ms Leonie Gemmell
Research Assistants/ Statisticians	Dr Nelufa Begum Dr Samantha Bjone Mr Sam Brilleman Ms Danielle Herbert Mr Richard Hockey Ms Melissa Johnstone Ms Melanie Spallek Ms Melanie Watson

10. APPENDICES

Appendix A: Quarterly updates

Quarterly Update for Research Team, Associates and Colleagues

October – December 2008

Here's the latest news from Women's Health Australia.

Project News

Contract Renewal: We are very pleased to announce that the ALSWH contract with the Department of Health and Ageing has been renewed, with funding continued until mid 2012.

Data Linkage: After many years of negotiations, we are also very happy to announce that the Department of Health and Ageing Ethics Committee has approved the linkage of ALSWH data with data from the Medicare Benefits Scheme (MBS) and the Pharmaceutical Benefits Scheme (PBS), together with the corresponding data for benefits provided by the Department of Veterans Affairs for all participants. The approval includes linkage of Health and Community Care (HACC) and data from the residential aged care system. This will be particularly relevant for women from the 1921-26 cohort, who may become difficult to follow up through ALSWH tracing as they move into residential aged care. Use of linked data for all participants will overcome potential biases from analysing data only from those women who gave explicit signed consent to linkage, and it will increase the statistical power of the study for analysis of less common conditions, services or medications

A protocol for linkage of de-identified data has been developed and has been approved by the DoHA Ethics Committee. The steering committee and administrative procedures for applications for data linkage are currently under development.

Release of Major Report C: In December, the major ALSWH report prepared in 2007, 'Use and costs of medications and other health care resources: Findings from the Australian Longitudinal Study on Women's Health', was released jointly by Nicola Roxon, the Minister for Health and Ageing and Tanya Plibersek, the Minister for the Status of Women. The report is available on the ALSWH website:

http://www.alswh.org.au/Reports/OtherReportsPDF/MajorReportC.pdf

Following its release, the report, and particularly its findings regarding women's use of anti-depressants, was widely publicised. Lead author **Julie Byles** spoke with journalists, and a number of articles appeared in the print media, including The Sydney Morning Herald, The Australian, The Courier Mail and The Adelaide Advertiser. The release was also reported on radio stations 2HD Newcastle and 2NC Newcastle.

Steering Committee: A face-to-face meeting was held at the University of Queensland in November. As well as discussion of regular business, short presentations were made to committee members. These included:

- Highlights of Major Report D (Jayne Lucke & Deb Loxton)

- Production procedures for Major Reports (Jayne Lucke & Deb Loxton)
- Life events (Nancy Pachana and Sam Brilleman)
- Analysis of longitudinal data using mixed models (Sam Brilleman)
- Ageing Well Ageing Productively update: Dynamic Analyses to Optimise Ageing (DYNOPTA: Julie Byles)
- Ageing Well Ageing Productively update: Men Women and Ageing (Annette Dobson/Dimitrios Vagenas)

Associate Professor **David Sibbritt** from the University of Newcastle joined the Steering Committee in November. Current committee members are: **Annette Dobson** (Chair), **Julie Byles, Wendy Brown, Christina Lee, Nancy Pachana, Deborah Loxton, Jayne Lucke, Leigh Tooth** & **David Sibbritt**.

Surveys:

***1973-78 cohort Survey 5 Pilot Study*:** The response rate for the pilot study has reached 59% and a few surveys continue to be returned. Survey 5 questions are being finalised and proof read before printing, and the survey will be mailed around the 18th March 2009.

1921-26 cohort Survey 5: 5,548 surveys (77% of those mailed) have been received.

Data updates:

ALSWH data sets are updated regularly, usually every 6 months. Suggestions for updates are identified by the data manager and other data users thoughout the year. The next update will occur in January 2009, and changes will include:

- Activities of daily living
- Proxy questions for 1921-26 Wave 3
- Proportion of Life Events for 1921-26 cohort Wave 4
- Menopause data for 1946-1942 cohort, all Waves
- Removal of Labour Force Status for 1973-78 cohort Wave 2
- Removal of single record from 1946-51 cohort Wave 1(the woman is out of the age range)
- New sample weights for all data sets
- ARIA and ARIA+ groupings

Please contact **David Fitzgerald** (d.fitzgerald@sph.uq.edu.au) if you have any queries regarding data updates.

Reports and Deliverables

Major Report D: Reproductive Health: The Working Group has continued to hold monthly teleconferences, and drafts of each section have been completed and are currently undergoing peer review. The sections comprise:

- Contraception
- Aspirations: Who wants to have children?
- Fertility and infertility
- Maternal health
- Prenatal and maternal health behaviours
- Motherhood and paid work

The complete draft report is due to be sent to the Department of Health and Ageing in March 2009.

Technical Report #31 and Databook for Survey 5 of the 1946-51 cohort: The Technical Report and the Databook were delivered to the Department of Health and Ageing in December 2008. Thank you to all who assisted by sending progress reports, student updates and new information about the

study – your help was much appreciated! Under our new contract, there is no mid-year Technical Report, so the next Report is due in December 2009.

Publications and projects update

Projects: These projects were approved by the Publications, Substudies and Analyses Subcommittee during the period *October - December* 2008.

New projects:

A242 - The association between physical activity and weight with quality of life in mid-aged and older Australian women

A243 - Analysis of care-giving by the old-aged women from ALSWH

A246 - Uptake and impact of new Medicare benefits schedule items - Psychologists and other allied mental health professionals

A247 - Tobacco smoking and mental health

A248 - Exploring a corpus-based methodology for the study of language variation

A249 - Achieving motherhood aspirations

W064 - Men women and ageing

Amended/Updated projects:

A174A - Young women's changes in use of contraception after reproductive life events

A227A - Prevalence and impact of foot pain in older women

W047A - How well do health and community services help older people with neurodegenerative disorders and their family caregivers?

W058A - Service utilisation and care giving among mid-aged women

Publications: *October - December* 2008.

Published:

Bell S & Lee C. Transitions in emerging adulthood and stress among young Australian women**.** *International Journal of Behavioural Medicine*, 2008: 14(4); 280-288.

Berecki J, Hockey R & Dobson A. Adherence to bisphosphonates by elderly women. *Menopause,* 2008:15(5); 984-990.

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-aged women. *Australian and New Zealand Journal of Public Health,* 2008: 32(6); 535-541.

Brown W, Burton N & Rowan P. Updating the evidence on physical activity and health in women. *American Journal of Preventive Medicine,* 2007: 33(5); 404-411.

Cooper R, Lucke J, Lawlor D, Mishra G, Chang J, Ebrahim S, Kuh D & Dobson A. Socioeconomic position and hysterectomy: A cross-cohort comparison of women in Australian and Great Britain. *Journal of Epidemiology and Community Health,* 2008:62; 1057-1063.

Drew M, Sibbritt D & Chiarelli P. No association between previous Caesarean-section delivery and back pain in mid-aged Australian women: An observational study. *Australian Journal of Physiotherapy,* 2008:54; 269-272.

Heesch K & Brown W. Do walking and leisure-time physical activity protect against arthritis in older women? *Journal of Epidemiology and Community Health*, 2008: 62(12); 1086-1091.

Hure A, Young A, Smith R & Collins C. Diet and pregnancy status in Australian women. *Public Health Nutrition, 2008: Epub July 23;* 1-9.

Lowe J, Young A, Dolja-Gore X & Byles J. Costs of medications for older women. *Australian and New Zealand Journal of Public Health,* 2008: 32(1); 89.

Lucke J, Russell A, Tooth L, Lee C, Watson M, Byrne G, Wilson A & Dobson A. Few urban-rural differences in older carers' access to community services. *Australian Health Review*, 2008: 32(4); 684-690.

McDermott L, Dobson A & Owen N. Smoking reduction and cessation among young adult women: A seven-year prospective analysis. *Nicotine & Tobacco Research,* 2008: 10(9); 1457-1466.

Pachana N, Smith N, Watson M, McLaughlin D & Dobson A. Responsiveness of the Duke Social Support Sub-scales in older women. *Age and Ageing,* 2008: 37(6); 666-672.

Schofield M & Khan A. Australian women seeking counseling have higher use of health services. *Women's Health Issues,* 2008: 18(5); 399-405.

Smith MD, Russell A & Hodges PW. How common is back pain in women with gastrointestinal problems? *Clinical Journal of Pain,* 2008: 24(3); 199-203.

Weisberg E, Bateson D, Read C, Estoesta J & Lee C. Fertility control? Middle-aged Australian women's retrospective reports of their pregnancies. *Australian and New Zealand Journal of Public Health,* 2008: 32(4); 390-392.

Accepted for publication:

Adams J, Sibbritt D & Young A. A longitudinal analysis of older Australian women's consultations with complementary and alternative medicine (CAM) practitioners, 1996-2005.
Age & Ageing

Loxton D, Powers J, Schofield M, Hussain R & Hosking S. Inadequate cervical cancer screening among mid-aged Australian women who have experienced partner violence.
Preventive Medicine

McDermott L, Dobson A & Owen N. Determinants of continuity and change over 10 years in young women's smoking.
Addiction

Polimeni A, Austin S & Kavanagh A. Sexual orientation and weight, body image and weight control practices among young Australian women.
Journal of Women's Health

Tudor-Locke C, Burton NW & Brown WJ. Leisure activity and occupational sitting: Associations with daily steps and body mass index in mid-aged Australian women.
Preventive Medicine

Report published:

Brown WJ, Burton N & Heesch N. (2008). Physical activity and health in mid age and older women. Canberra: The Office for Women, Department of Families, Housing, Community Services, and Indigenous Affairs.

Available at: http://www.facsia.gov.au/ofw/publications/physical_activity/c3.htm

Other Activities

People, meetings and visitors

Congratulations to ALSWH investigator **Christina Lee**, who led a group from the University of Queensland's School of Psychology recently selected by the Queensland Government to establish the **Queensland Centre for Mothers and Babies**. The Centre is due to open in 2009, and will provide up-to-date information and resources for mothers, babies and their care givers, and will also advise the government on how to improve maternity services and care choices across the state.

ALSWH was well represented at the **Australian Association of Gerontology 41st National Conference: Ageing Landscapes** held in Fremantle in November. **Leigh Tooth** gave a presentation 'Few urban-rural differences in older carers' access to community services', and also presented a poster 'Impact of type of impairment on carer burden and quality of life'. **Julie Byles** delivered a presentation 'Women's increasing weight: A threat to healthy ageing', and **Deirdre McLaughlin** presented 'Social networks in older Australian men and women'.

An Ageing Well, Ageing Productively (AWAP) symposium is proposed for the Association's 2009 National Conference: Translation and transformation – Connecting what we know and what we do (http://www.aag.asn.au/filelib/AAG09_Call_for_Abstracts.pdf) in Canberra, 25-27 November 2009. Please contact **Julie Byles** for more information.

Deb Loxton attended two **Maternity Services Roundtables** at the Department of Health and Ageing in October last year. The purpose of the roundtables was to ascertain the current status and future needs of women having children.

Danielle Herbert was recognised with a $300 prize for her presentation 'Seeking advice and using treatment for fertility problems in Australian women aged 28-33 years' at the UQ School of Population Health Higher Degree conference held in November.

Samantha McKenzie (Bjone) began work as a Research Assistant on the Carers contract (Caring and use of services in women born between 1946 – 1951) at the University of Queensland in October.

Media:

David Fitzgerald spoke about recent ALSWH menopause research on ABC Brisbane radio in November.

A brief article on the 2007 Caring Report, *Changes in the Caring Roles and Employment in Mid-life: Findings from the Australian Longitudinal Study on Women's Health* was included in Ageing Research Online News in January 2009:

http://www.aro.gov.au/aro/NewsletterFiles/ARO%20Newsletter%20January%202009.pdf

Web updates:

Several new reports have been recently added to the ALSWH website including Major Report C, Technical Report #31 and the Databook for Survey 5 of the 1946-51 cohort. Please visit www.alswh.org.au for further information.

REMINDER:

The **6th Australian Women's Health Conference: The New National Agenda**, conducted by the Australian Women's Health Network will take place in Hobart from 18-21 May 2010. Conference priority areas are:

- Women's economic health and wellbeing
- Women's mental health and wellbeing
- Preventing violence against women
- Women's sexual and reproductive health

- Improving women's access to publicly funded and financially accessible health services

The call for abstracts is now open, and will close June 1, 2009. Further information is available at: www.awhn.org.au

That's all this time! Please keep us posted as to the latest WHA news and activities. Our best contact is

sph-wha@sph.uq.edu.au.

Megan Ferguson
Research Project Manager
ALSWH-UQ
www.alswh.org.au

Quarterly Update for Research Team, Associates and Colleagues

January - March 2009

Here's the latest news from Women's Health Australia.

Project News

PAC meeting:

The Project Advisory Committee meeting was held in Canberra on the 11 March 2009. The Committee welcomed a new Chair: Professor Sally Redman, Chief Executive Officer of the Sax Institute in Sydney. Items on the agenda included:

- *Major Reports*: Members noted the progress of Major Report D (Reproductive Health) and discussed the content of Major Report E (Women, Health and Ageing) and Major Report F (Rural and Remote Comparisons).
- *Progress on data linkage*: Members discussed progress on data linkage as described below.
- *New cohort*: The recruitment of a new cohort of 18-23 year olds was discussed. Further development work is required over the next two years in order to pilot test a new survey in 2010 but this work is dependent on gaining further funding that is not available at present.
- *Government priorities:* Members discussed the various priorities of different government departments. These included violence against women, women's economic security, women's participation in decision making, carers, social disadvantage, the development of the Women's Health Policy and other government initiatives such as the Maternity Services Review, National Primary Health Care Strategy, Preventive Health Taskforce, and Productivity Commission report on parental leave.
- *Funding agreement update:* The ALSWH team reported that the budget for the 2009-2012 funding agreement had not increased in line with salary and other project costs. Members discussed potential options for further funding contracts examining specific issues of interest to government departments.

Data Linkage:

Membership of the Data Linkage Steering Committee has been finalised. Members are:

Louisa Jorm (Chair)	University of Western Sydney
Di Rosman	Data Linkage Unit, Western Australian Department of Health
Steve Kisely	Queensland Centre for Health Data Services
John Patroni	Department of Health and Ageing
Annette Dobson	The University of Queensland
Julie Byles	The University of Newcastle
David Sibbritt	The University of Newcastle

We are now waiting for advice from the Department of Health and Ageing about which group to use as the Data Linkage Unit (DLU) before progressing further.

National Women's Health Policy:

ALSWH was recently invited to contribute towards development of the new National Women's Health Policy. Using funding provided by the Department of Health and Ageing, a submission based on recent ALSWH papers and Reports is in preparation. In addition, help is being provided for other people to use ALSWH data to support their submissions.

Reports and Deliverables

Major Report D: Reproductive Health:

The draft report was submitted to the Department of Health and Ageing on 20 March 2009. The report will be revised in line with any comments from the Department and the final version will be submitted by 1 June 2009. The report focuses on several important aspects of reproductive health, mainly in the 1973-78 cohort. The sections include:

- Use of contraception
- Motherhood aspirations
- Fertility and infertility
- Maternal health, focusing on postnatal depression
- Prenatal and maternal health behaviours including diet, physical activity and use of tobacco and alcohol during pregnancy
- Motherhood and paid work

Major Report E: Healthy Ageing:

Preparation has begun for Major Report E, due for submission to the Department of Health and Ageing in June 2010. The report will focus on key issues about ageing, examining both cross-sectional and longitudinal data. General trends across all cohorts will be examined but the report will focus mainly on Surveys 1 to 5 from the cohort of women born 1921-26 (aged 70-75 at Survey 1 in 1996).

Next Technical Report:

There is no mid-year Technical Report this year, so the next Report (#32) is not due until December 2009. However, it is important that we keep project records up to date, so we will soon be emailing all liaison people on current ALSWH EOIs to provide an update of progress, papers and presentations. If you have any news about publications, conference presentations etc between updates, we are always happy to hear at sph-wha@sph.uq.edu.au

Surveys:

> ***1973-78 cohort Survey 5:*** The survey was mailed out on 31st March, and the first returns started to arrive at Newcastle in early April.

1921-26 cohort Survey 5: Data collection is almost complete and preliminary data is now available.

***1946-51 cohort Survey 6 Pilot Study*:** A planning meeting for the Pilot Study for Survey 6 will not be held, as changes from Survey 5 are minimal. Three questions will be deleted as they were only required once:

Q62	The next question is about alcohol consumption during different stages of your life...
Q105	If you have ever lived with a violent partner or spouse, in which years did you experience violence?
Q109	Are you a twin?

The consent pages will also be altered to be in line with the consent forms used with the 1973-78 and 1921-26 cohorts (that incorporate data linkage).

The Pilot survey will be finalised and mailed to the Pilot group for the 1946-51 cohort in the next few months.

Data updates:

The January 2009 data updates were completed as planned. Usually there would be no other data updates until June at the earliest. However, a few important changes have recently been made. These are:

- An extra 26 records were added to the 3rd survey of the 1946-51cohort. These were not originally entered and had to be entered in 2009. The 1946-51 Cohort now has 11 226 records for Survey 3.
- The 4th survey of the 1921-26 Cohort had a mistake with the SF-36 variable RE - Role Emotional Scale. This has been corrected. The correction of this error also changes the values of the Mental and Physical health summary scores, MCS and PCS.
- ARIA+ scores have been added to the fourth survey of the 1973-78 Cohort.
- Smoking variables have been renamed so they are consistent across cohorts and surveys.

The data for the 5th survey of the 1921-26 Cohort is not finalised, but an incomplete version of the data has been produced. Please contact David Fitzgerald (d.fitzgerald@sph.uq.edu.au) if you have any queries regarding data updates.

The Qualitative Research Group was formed at the end of 2008. The group will meet about six times per year to provide recommendations in the use of ALSWH qualitative data. Membership includes Deb Loxton (chair), Lyn Adamson, Christina Lee, Jon Adams, Deirdre McLaughlin, Alex Broom, Ann Taylor and John Gerrmov.

Publications and analyses update

Analyses:

These analyses were approved by the Publications, Substudies and Analyses Subcommittee during the period *January –March* 2009.

New analyses:

A240 - PCOS in Australian women: a chronic illness with psychological, reproductive and metabolic features

A250 - Differences in causes of death of urban-rural women

A251 - A multi-morbidity index in older women

A252 - Correlates of sitting time in young, mid-aged and older women

A253 - Social support in older women

A254 - Birth outcomes

A255 - Maternal health

A256 - Identifying the predictors of hospitalisation for women with single and multiple comorbid chronic conditions

A257 - Participation in cohort studies of older people: experience from the Australian longitudinal study on women's health

A258 - Mental health and cardiovascular disease in Australian women

A259 - Health across generations: findings from the Australian longitudinal study on women's health

A260 - Trends in health related quality of life of women in their 70's and 80's

A261 - The Australian diabetes and cancer collaboration

A262 - Body dissatisfaction, dieting, weight and depression in young Australian women: longitudinal results of the women's health Australia study

A263 - Participation in the arts and its relation to healthy ageing: a pilot study with older women

W065 - The use of complementary and alternative medicines (CAM) in older urban and rural women

W066 - The predictors, antecedents and efficacy of treatment of postnatal depression in Australian women

Amended/Updated analyses:

A081A - Characteristics of cam users and associated symptoms and conditions

A102A - Use of medication for psychiatric disorders amongst mid-aged women across time

A159A - Health effects of intimate partner violence among Australian women

A237A - The long term implications of intimate partner violence for health and social support

A241A - Risk factors in childbirth interventions

Publications.

January – March 2009.

Submitted for publication:

Lucke J, Watson M & Herbert D. Changing patterns of contraceptive use in Australian women. *Perspectives on Sexual and Reproductive Health*

Accepted for publication:

Berecki J, Begum N & Dobson A. Symptoms reported by women in mid-life: menopausal transition or ageing? *Menopause*

Brown WJ, Heesch K & Miller Y. Life-events and changing physical activity patterns in women at different life-stages. *Annals of Behavioral Medicine*

Lowe J. Does systematically organized care improve outcomes for women with diabetes? *Journal of Evaluation in Clinical Practice*

Magin P, Sibbritt D, Bailey K. The relationship between psychiatric illnesses and skin disease: A longitudinal analysis of young Australian women. *Archives of Dermatology*

Vagenas D, McLaughlin D & Dobson A. Regional variations in the health of older Australian women: Grey canaries? *Australian and New Zealand Journal of Public Health*

Published:

Adams J, Sibbritt D & Young A. A longitudinal analysis of older Australian women's consultations with complementary and alternative medicine (CAM) practitioners, 1996-2005. *Age & Ageing,* 2009: 38(1); 93-99.
Byles J, Millar C, Sibbritt D & Chiarelli P. Living with urinary incontinence: A longitudinal study of older women. *Age and Ageing, Advanced Access 03 March 2009. doi:10.1093/ageing/*afp013
Herbert D, Lucke J & Dobson A. Pregnancy losses in young Australian women: Findings from the Australian Longitudinal Study on Women's Health. *Women's Health Issue,* 2009: 19; 21-29.
Johnstone M & Lee C. Young Australian women's aspirations for work and family. *Family Matters,* 2009: 81: 5-14.
Loxton D, Powers J, Schofield M, Hussain R & Hosking S. Inadequate cervical cancer screening among mid-aged Australian women who have experienced partner violence. *Preventive Medicine,* 2009: 48; 184-188.
McDermott L, Dobson A & Owen N. Determinants of continuity and change over 10 years in young women's smoking. *Addiction,* 2009: 104(3); 478-487.
Rowlands I & Lee C. Correlates of miscarriage among young women in the Australian Longitudinal Study on Women's Health. *Journal of Reproductive and Infant Psychology, 2*009: 27(1); 40-53.
Tudor-Locke C, Burton NW & Brown WJ. Leisure-time physical activity and occupational sitting: Associations with steps/day and BMI in 54–59 year old Australian women. *Preventive Medicine,* 2009: 48; 64-68.

Other Activities

People, meetings and visitors

Kylie Ball was recently awarded the Victorian Young Tall Poppy of the Year Award. This award was established by the Australian Institute of Policy and Science to recognize achievements of outstanding young researchers. There were ten awards and Kylie was announced as the overall winner – congratulations Kylie!

Annette Dobson attended a **Women's Health Policy roundtable** at the Department of Health and Ageing in March. The purpose of the roundtable was to ascertain the current health status and future health needs of women as part of the consultative process involved in the development of the National Women's Health Policy to which ALSWH will be providing a submission. Further details of the policy and the development process can be viewed at: http://www.health.gov.au/womenshealthpolicy.

Anna Graves, Data Manager Cohorts at UN, was awarded a Diploma of Management after completing the course last year. Congratulations Anna!

Media: In January Danielle Herbert's paper 'Pregnancy losses in young Australian women' was quoted in two articles in The Sydney Morning Herald. In March work from Major Report C (Use and cost of medications and other health care resources) by Julie Byles and Deb Loxton was reported in the Brisbane Bayside and Northern Suburbs Star.

Web updates:

The following documents can now be found on the ALSWH website:
* Survey 5 of the 1973-78 cohort (www.alswh.org.au/surveys.html)
* Databook for Survey 5 of the 1946-51 cohort (www.alswh.org.au/surveys.html)
* 2008 Annual Report (www.alswh.org.au/Reports/annual_reports.html)

Administration database update:

With 269 EOIs and around 150 current collaborators to keep track of, the databases we use for record keeping and reporting to the Department of Health and Ageing are in need of an overhaul. The databases are currently being updated with the aim of making our administrative processes more efficient, and we are looking forward to having the updated systems ready before work starts on production of Tech Report #32.

That's all this time! Please keep us posted as to the latest WHA news and activities. Our best contact is sph-wha@sph.uq.edu.au.

Megan Ferguson
Research Project Manager
ALSWH-UQ
www.alswh.org.au

women's health australia

Quarterly Update for Research Team, Associates and Colleagues

April – June 2009

Here's the latest news from Women's Health Australia.

Project News

Report from National Rural Health Conference:

Annette Dobson represented ALSWH at the conference, and reported that useful suggestions were made for the proposed 2011 ALSWH Major Report into Rural, Remote and Regional Differences. Connectionswith the Rural Health Alliance were strengthened and a summary presentation of the Report may be included at their 2011 conference.

We are now waiting for advice from the Department of Health and Ageing about which group to use as the Data Linkage Unit (DLU) before progressing further.

National Women's Health Policy:

ALSWH recently made a submission towards development of the new National Women's Health Policy. The submission comprised summaries of the implications of ALSWH findings to policy in nine broad areas:

1. Smoking in young women
2. Access to health services
3. Partner violence
4. Elder abuse
5. Sexual and reproductive health
6. Alcohol use
7. Psychosocial health
8. Carers
9. Weight control

Annette Dobson conducted a consultation session at the National Rural Health Conference held in Cairns in May, and recommendations resulting from this discussion were also provided to the Department of Health and Ageing as part of our submission.

Reports and Deliverables

Major Report D: Reproductive Health:

The final report was submitted to the Department of Health and Ageing on 1 June 2009 and will be available from the ALSWH website when it has been released by the Department. The report focuses on several important aspects of reproductive health, mainly in the 1973-78 cohort. The sections include:

- Use of contraception
- Motherhood aspirations
- Fertility and infertility
- Maternal health, focusing on postnatal depression
- Prenatal and maternal health behaviours including diet, physical activity and use of tobacco and alcohol during pregnancy
- Motherhood and paid work

Major Report E: Women, Health and Ageing:

Work is progressing on Major Report E, which focuses on key issues about ageing, examining both cross-sectional and longitudinal data. General trends across all cohorts will be examined but the report will focus mainly on Surveys 1 to 5 from the cohort of women born 1921-26 (aged 70-75 at Survey 1 in 1996, and now aged 83-88). The Working Group has been meeting monthly for teleconferences to discuss progress on the different sections, which comprise:

- An introduction to older women in ALSWH
- The changing health of older women
- The impact of different health conditions on health outcomes for women (conditions include diabetes, arthritis and sleep problems)
- Dimensions of comorbidity
- Risk factors and impact on death and other adverse effects (risk factors include height loss, weight, physical activity and falls, and use of tobacco and alcohol)
- Social inclusion/networks
- Health prospects for women of the baby boom
- Implications for policy

The draft report is due to be sent to the Department of Health and Ageing in March 2010.

Major Report F: Rural, Remote and Regional Differences:

Initial preparation has begun for Major Report F, due for submission to the Department of Health and Ageing in June 2011. The report will use both cross sectional and longitudinal data to look at the health impact of area of residence.

Next Technical Report:

Our next Technical Report (#32) is due in December 2009 and emails requesting updates on progress, papers and presentations for all current EoIs will be sent in August/September. The Technical Report, which is now submitted annually, is our main form of informing the Department of Health and Ageing on the work currently being conducted using ALSWH data, so it is very important to be as informative as possible in your updates. As always, if you have any news about publications, conference presentations etc between our formal email requests, we are always happy to hear at sph-wha@sph.uq.edu.au

Surveys:

> ***1973-78 cohort Survey 5:*** To date 6,092 (49%) surveys have been received from women in the fifthwave of the 1973-78 cohort. Two targeted reminders have been mailed and the phone reminder is underway to non respondents. Extra surveys have been mailed to 365 participants.

1921-26 cohort Survey 5: Data collection for the fifth survey of the 1921-26 cohort will be completed at the end of August and the final dataset will be distributed after that date.

***1946-51 cohort Survey 6 Pilot Study*:** The first draft of the pilot survey has been received from the printers and is in the process of being proof read before mailing to approximately 350 participants in early August.

Data updates:

- A new data set of **medications** from the fifth survey of the 1946-51 cohort is now available. Medications have been given ATC codes where possible, and those medications that do not have ATC codes have bee**n given descr**iptive names.
- Changes have been made to some **menopause** and **activities of daily living** (ADL) variables. An error was identified with the menopause variable, m1menstatgp – m5menstatgp, which is a grouping of the 'menstat' variable. The grouping was incorrect, and has now been fixed. This variable is in all surveys of the 1946-51 cohort. The m1menstat – m5menstat variables remain unchanged. The ADL variables had a number of missing values where there were no missing values in the survey. These missing values have now been changed to 'Help needed' because they indicate women were unable to do activities and did not seek help. These variables are on the 4th and 5th surveys of the 1921-26 cohort.
- GISCA has recently provided ARIA+ and some SEIFA variables for the fifth surveys of the 1946-51 and 1921-26 cohorts, and these have been put on the data sets for these surveys. The ARIA+ is also grouped in the standard 5 groupings.
- The fifth survey of the 1921-26 cohort has not yet been finalised - there are currently 5559 records in the preliminary data set, and the final version will be available in September.
- ALSWH datasets are now available in SPSS form, and the Data Management form used for requesting data has been updated to include an option for requesting data in SPSS form, along with SAS and text.

Please contact David Fitzgerald (d.fitzgerald@sph.uq.edu.au) if you have any queries regarding data updates.

Qualitative Research Group (QRG) update

ALSWH qualitative processing protocols have been updated, and will soon be available on the website at: http://www.alswh.org.au/infodata.html , and all researchers interested in qualitative research with ALSWH data are encouraged to read these. The QRG is now investigating options for archiving ALSWH qualitative data with the Australian Qualitative Archive (AQuA).

Please contact Deb Loxton (deborah.loxton@newcastle.edu.au) if you have any queries regarding the Qualitative Research Group.

Publications and analyses update

Analyses:

These analyses were approved by the Publications, Substudies and Analyses Subcommittee during the period *April - June 2009*

New analyses:

- A265 - The lived experience of drought: the story from the qualitative data of the Australian longitudinal study on women's health
- A266 - Women's attitudes to and experiences of use of prescription and non-prescription medicines
- A267 - Residential location, neighbourhood belonging and health outcomes of middle-aged Australian women
- A268 - Comparison of Australian women's dietary intake and food choices during pregnancy
- A269 - Elder abuse
- W067 - Coping with motherhood and work: predicting positive wellbeing among young Australian women

Amended/Updated analyses:

- A171A - Health costs of poor psychological health and inactivity

Publications** April - June 2009**:

Accepted for publication:

- **Beatty L, Lee C & Wade T.** A prospective examination of perceived stress as a mediator of the relationship between life-events and QOL following breast cancer. *British Journal of Health Psychology.*
- **Berecki J, Spallek M, Hockey R & Dobson A**. Height loss in elderly women is preceded by osteoporosis and is associated with digestive problems and urinary incontinence. *Osteoporosis International*
- **Johnstone M & Lee C.** Young Australian women's aspirations for work and family: Individual and sociocultural differences.*Sex Roles*
- **Lucke J, Watson M & Herbert D.** Changing patterns of contraceptive use in Australian women. *Contraception*
- **Read CM, Bateson DJ, Weisberg E, Estoesta J**. Contraception and pregnancy then and now; examining the experiences of a cohort of mid age Australian women. *ANZJOG*
- **Smith MD, Russell A & Hodge P. Do** incontinence, breathing difficulties, and gastrointestinal symptoms increase the risk of future back pain? *The Journal of Pain*
- **Korda R, Banks E, Clements M & Young A**. Is inequity undermining Australia's 'universal' health care system? Socioeconomic inequalities in the use of specialist medical and non-medical ambulatory health care. *ANZJPH*

Other Activities

People, meetings and visitors

In April **Deb Loxton** presented a paper to the Academy of Violence and Abuse Conference in Minneapolis

Annette Dobson attended the National Rural Health *Confere*nce in Cairns in May.

UQ recently farewelled three statisticians: **Melanie Spallek** has moved to work at the Australian Qualitative Archive, **Melanie Watson** is now working for Queensland Health, and **Sam Brilleman** has embarked on a travel adventure, and was last heard of biking in Laos, on his way to Europe. We wish them all well in their new ventures!

Web updates:

- The Data Dictionary Supplement: http://www.alswh.org.au/InfoData/dictsupp.html
- Staff information: http://www.alswh.org.au/people.html

That's all this time! Please keep us posted as to the latest WHA news and activities. Our best contact is sph-wha@sph.uq.edu.au.

Megan Ferguson
Research Project Manager
ALSWH-UQ www.alswh.org.au

Quarterly Update for Research Team, Associates and Colleagues
July – September 2009

Here's the latest news from Women's Health Australia.

Project News

Development of National Women's Health Policy:

ALSWH continues to be involved in the development of the new National Women's Health Policy, and interested collaborators and staff are invited to participate in the State and Territory Consultation Forums. The forums will provide an opportunity to discuss the issues facing the health and well being of Australian women, and for individuals and representative groups to say what they would like included in the policy. Further information on dates for each State and Territory is available at the Department of Health and Ageing website: www.health.gov.au/womenshealthpolicy

Reports and Deliverables

Major Report E: Women, Health and Ageing:

Work is progressing on Major Report E, which examines key issues about ageing, using both cross-sectional and longitudinal data, particularly focusing on Surveys 1 to 5 from the cohort of women born in 1921-26 (aged 70-75 at Survey 1 in 1996, and now aged 83-88). The Working Group has been meeting monthly by teleconference, and progressing on the different sections, which comprise:

- An introduction to older women in ALSWH
- The changing health of older women
- The impact of different health conditions on health outcomes for women
- Dimensions of comorbidity
- Risk factors and impact on death and other adverse outcomes
- Social inclusion/networks
- Health of women across generations
- Implications for policy

A symposium is planned for the International Federation on Ageing World Congress, to be held in Melbourne 2010, and the draft report is due to be sent to the Department of Health and Ageing in March 2010.

Major Report F: Rural, Remote and Regional Differences in Women's Health:

Planning is underway for Major Report F, due for submission to the Department of Health and Ageing in June 2011. The report will use both cross sectional and longitudinal data to look at the health impact of area of residence.

Technical Report #32:

Emails requesting updates on progress, papers and presentations for the December 2009 Technical Report were sent in September. Please return all your information promptly to Leonie Gemmell by 23rd October. The information you provide will also be used for the 2009 Annual Report, so please include as much detail as possible, so we can provide a thorough overview of everyone's hard work throughout the year.

As always, if you have any news about publications, conference presentations etc between our formal email requests, we are always happy to hear at sph-wha@sph.uq.edu.au

Surveys:

1973-78 Cohort Survey 5: 6,677 surveys have been received, which represents 54% of those mailed. Follow up of non-responders is underway, and this year, for the first time, email and text message reminders are being used as well as the regular telephone and mail reminders. Tracking of participants whose mail has been returned to sender or who have not been contactable in the telephone reminder is taking place and 2,015 extra surveys have been mailed to participants. Researchers and collaborators should note that this cohort is highly mobile, and progress is expected to be slow, with a lengthy follow up period anticipated. It may take longer than usual for the data from this cohort survey to become available.

1921-26 Cohort Survey 5: Data collection for the fifth survey of the 1921-26 cohort is complete - surveys were returned by 77% of those who were mailed the survey.

***1946-51 Cohort Survey 6 Pilot Study*:** The pilot survey of the 1946-51 cohort was mailed on 11th August 2009 to 347 participants. The first targeted reminder was mailed to 157 women in September and the response rate currently stands at 74%.

Data updates:

Minor changes have been made to some respondents' Post Codes in the fifth surveys of the 1921-26 and 1946-51 cohorts. Although Post Codes are removed from data supplied to users they are used for deriving STATE, AREA, and when the GISCA data is missing, for deriving RRMA. The STATE variable is most affected - in Survey 5 of the 1921-26 cohort, 19 records have a new State value, and in Survey 5 of the 1946-51 cohort, 22 records have a new State value. Area and RRMA have changed in only one record in Survey 5 of the 1921-26 cohort, and have not changed in any records for Survey 5 of the 1946-51 cohort.

Please contact David Fitzgerald (d.fitzgerald@sph.uq.edu.au) if you have any queries regarding data updates.

Carers Study:

Stage 2 of the Carers Project is nearly complete. The research has investigated transitions into and out of caring, carer needs and use of interventions and services for women born between 1946 and 1951, and 1921 and 1926. Three detailed reports and one project report have been completed and at the end of October, Research Assistant Dr Sam McKenzie will present the project findings to the Department of Health and Ageing in Canberra.

Publications and analyses update

Analyses:

These analyses were approved by the Publications, Substudies and Analyses Subcommittee during the period *July - September 2009*

New analyses:

- A271 - Zinc intake and incidence of type-2 diabetes in Australian women.
- A272 - Changes in older women's physical function in Indonesia and Australia.
- A273 - Exploring the ongoing relationships of women to the ALSWH Longitudinal Survey.
- A274 - Exploring qualitative comments about positive and negative factors impacting on wellbeing: religious practices and beliefs, relationship with pets, car accidents to self and loved ones and feelings about current events
- A275 - Smoking and uptake of screening services.
- A276 - Perinatal mental health: psychosocial assessment, service utilisation and maternal outcomes.

Amended/Updated analyses:

- A133B - Arthritis impact over time: a longitudinal exploration of burden of illness, comorbities (particularly depression), management, and health care costs in older Australian women.

***Publications** July - September 2009:*

Submitted for publication:

- **Lucke J, Brown W, Tooth L, Loxton D, Byles J, Spallek M, Powers J, Hockey R, Pachana N, Dobson A.**Health across generations: findings from the Australian Longitudinal Study on Women's Health. *Biological Research for Nursing*
- **Mishra G, McNaughton S, Ball K, Brown W, Giles G & Dobson A.** Major dietary patterns of young and middle aged women: Results from a prospective Australian cohort study. *Journal of Nutrition*

Accepted for publication:

- **Berecki-Gisolf J, Humpheyes-Reid L, Wilson AJ, Dobson A.** Angina symptoms predict mortality in older women with ischemic heart disease. *Circulation*
- **Brown WJ, Hockey, R, Dobson A.** How much weight gain is attributable to having a baby?*American Journal of Preventive Medicine.*

Published:

- **Ball K, Burton N W & Brown W J.**A prospective study of overweight, physical activity and depressive symptoms in young women. *Obesity,* 2009: 17 (1); 66-71.
- **Fitzgerald D, Berecki J, Hockey R & Dobson A.** Hysterectomy and weight gain. *Menopause,* 2009: 16 (2); 279-285.

- **Herbert D, Lucke J & Dobson A.** Infertility, medical advice and treatment with fertility hormones and/or in vitro fertilisation: A population perspective from the Australian Longitudinal Study on Women's Health. *Australian and New Zealand Journal of Public Health,* 2009: 33 (4): 358-364.
- **Johnstone M & Lee C.Young .** Australian women's aspirations for work and family: Individual and sociocultural differences. *Sex Roles,* 2009: 61; 204-220.
- **Lee C, Ford J & Gramotnev H.** The Life Control Scale: Validation with a population cohort of middle-aged Australian women. *International Journal of Behavioral Medicine,* 2009: 16 (2); 148-157.
- **Polimeni A, Austin S & Kavanagh A.** Sexual orientation and weight, body image and weight control practices among young Australian women. *Journal of Women's Health,* 2009: 18 (3); 355-362.
- **Read CM, Bateson DJ, Weisberg E, Estoesta J.** Contraception and pregnancy then and now; examining the experiences of a cohort of mid age Australian women. *ANZJOG,* 2009: 49 (4); 429-433.

Other Activities

People, meetings and visitors

New arrivals:

Misa Florence, born September 1st, daughter of UQ Data Manager (Surveys) David Fitzgerald and wife Tomoko, and sister of Louis and Jack.

Departures:

At UoN, **Ashutosh Kabra** has accepted a new job outside ALSWH and is winding down his involvement as Data Assistant with ALSWH. At UQ, **Dimitrios Vagenas** has moved on to work at QUT, and **Janneke Berecki** is now living and working in Calgary, Canada. All the best to Ashutosh, Dimitrios and Janneke!

Meetings:

In July, **Julie Byles** and **Nancy Pachana** attended the IAAG World Congress of Gerontology and Geriatrics in Paris, where Julie presented ALSWH findings on survival and maintenance of physical well-being among the 1921-26 cohort, and the physical, social, and health care factors that mark out those women who live long and live well.

In August **Jenny Powers** presented a paper on wave non-response at the Australasian Epidemiological Association Conference in Dunedin. As ever, there were many interesting epidemiological methods presentations.

Visitors:

In July, **Gita Mishra** briefly visited UQ, where she caught up with her ALSWH colleagues and presented a seminar ' A lifecourse approach to ageing', based on her current work with the UK Medical Research Council**.** **Sabrina Pit** also visited ALSWH in July, presenting a seminar at UQ on her current research into changes in workforce participation among mid-aged Australian women.

Conferences:

The 6th Health Services and Policy Research Conference will be held in Brisbane, 25-27 November. Further information is available from: http://www.healthservicesconference.com.au/

That's all this time! Please keep us posted as to the latest WHA news and activities. Our best contact is sph-wha@sph.uq.edu.au.

Megan Ferguson
Research Project Manager
ALSWH-UQ www.alswh.org.au

Appendix B: Questions used for comparison of ALSWH cohorts with women the same ages in the 2006 Census and the 2004/2005 National Health Survey (Section 3.2)

B1: 2006 Census

Marital status

Question	Response options
Census	
Q6 What is the person's present marital status? *'Married' refers to registered marriages.*	Never married Widowed Divorced Separated but not divorced Married
Q5 What is the person's relationship to Person 1/Person 2? *Examples of other relationships: SON-IN-LAW, GRAND-DAUGHTER, UNCLE, BOARDER.*	Husband or wife of Person 1 De facto partner of Person 1 Child of Person 1 Stepchild of Person 1 Brother or sister of Person 1 Unrelated flatmate or co-tenant of Person 1 Other relationship to Person 1 – please specify
Q53 For each person absent, complete the following questions: What is the person's relationship to Person 1/ Person 2?	Husband or wife of Person 1 De facto partner of Person 1 Child of both Person 1 and Person 2 Child of Person 1 only Child of Person 2 only Unrelated flatmate or co-tenant of Person 1 Other relationship to Person 1 – please specify
ALSWH	
1973-78 cohort	
Y4q87 What is your present marital status?	Never married Married De facto (opposite sex) De facto (same sex) Separated Divorced Widowed
1946-51 cohort	
M5q106 What is your present marital status?	Married (registered) De facto relationship (opposite sex) De facto relationship (same sex) Separated Divorced Widowed Never married
1921-26 cohort	
O4q57 What is your present marital status?	Married De facto (in a relationship) Widowed Separated Divorced Never married

Indigenous status

Question	Response options
Census	
Q7 Is the person of Aboriginal or Torres Strait Islander origin? *For persons of both Aboriginal and Torres Strait Islander origin, mark both 'Yes' boxes.*	No Yes, Aboriginal Yes, Torres Strait Islander
ALSWH	
1973-78 cohort	
Y1q79 Are you of Aboriginal or Torres Strait Islander origin? *Circle one number only*	No Aboriginal Torres Strait Islander
1946-51 cohort	
M1q91 (same as above)	
1921-26 cohort	
O1q70 (same as above)	

Country of birth

Question	Response options
Census	
Q12 In which country was the person born? *Mark one box only*	Australia England Greece New Zealand Italy Scotland Viet Nam Other – please specify
ALSWH	
1973-78 cohort	
Y1q80 In which country were you born? *Circle one number only*	Australia United Kingdom Italy Greece New Zealand Vietnam Other – please specify
1946-51 cohort	
M1q92 (same as above)	
1921-26 cohort	
O1q71 (same as above)	

Language spoken at home

Question	Response options
Census	
Q16 Does the person speak a language other than English at home? *If more than one language other than English, write the one that is spoken most often.* *Mark one box only.*	No, English only Yes, Italian Yes, Greek Yes, Cantonese Yes, Arabic Yes, Vietnamese Yes, Mandarin Yes, other – please specify
ALSWH	
1973-78 cohort	
Y1q82 Do you usually speak a language other than English at home? *Circle one number only*	No, I speak only English at home Yes, Italian Yes, Greek Yes, Cantonese Yes, Mandarin Yes, German Yes, Arabic Yes, other – please specify on line
1946-51 cohort	
M1q94 (same as above)	
1921-26 cohort	
O1q73 (same as above)	

Single person households

Question	Response options
Census	
Q5 What is the person's relationship to Person 1/Person 2? *Examples of other relationships: SON-IN-LAW, GRAND-DAUGHTER, UNCLE, BOARDER.*	Husband or wife of Person 1 De facto partner of Person 1 Child of Person 1 Stepchild of Person 1 Brother or sister of Person 1 Unrelated flatmate or co-tenant of Person 1 Other relationship to Person 1 – please specify
Q53 For each person absent, complete the following questions: What is the person's relationship to Person 1/ Person 2?	Husband or wife of Person 1 De facto partner of Person 1 Child of both Person 1 and Person 2 Child of Person 1 only Child of Person 2 only Unrelated flatmate or co-tenant of Person 1 Other relationship to Person 1 – please specify
ALSWH	
1973-78 cohort	
Y4q88 Who lives with you? *(Mark all that apply)*	No one, I live alone Partner/spouse Own children Someone else's children Parents Other adults
1946-51 cohort	
M5q107 How many people live with you now?	No one, I live alone

(Mark all that apply)	Partner or spouse Children under 16 years Children 16-18 years Children over 18 years Your parents or in-laws Other adult relatives Other adults (not family members)
1921-26 cohort	
O4q53. Who lives with you? *(Mark all that apply)*	No one, I live alone Spouse or partner Own children Other family members Non-family members

Highest educational qualification achieved

Question	Response options
Census	
Q27 What is the highest year of primary or secondary school the person has completed? *Mark one box only.* *For persons who returned after a break to complete their schooling, mark the highest year completed when they last left.*	Did not go to school Year 8 or below Year 9 or equivalent Year 10 or equivalent Year 11 or equivalent Year 12 or equivalent
Q28 Has the person completed any educational qualification (including a trade certificate)? *Mark one box only*.	No No, still studying for first qualification Yes, trade certificate/apprenticeship Yes, other qualification
Q29 What is the level of the highest qualification the person has completed? *For example: TRADE CERTIFICATE, BACHELOR DEGREE, ASSOCIATE DIPLOMA, CERTIFICATE II, ADVANCED DIPLOMA.*	Level of qualification
ALSWH	
1973-78 cohort	
Y4q89 What is the highest qualification you have completed? *Circle one number only*	No formal qualifications Year 10 or equivalent (eg School Certificate) Year 12 or equivalent (eg Higher School Certificate) Trade/apprenticeship (eg hairdresser, chef) Certificate/diploma (eg child care, technician) University degree Higher university degree (eg Grad Dip, Masters, PhD)
1946-51 cohort	
M1q90 What is the highest qualification you have completed? *Circle one number only*	No formal qualifications School or Intermediate Certificate Higher School or Leaving Certificate Trade/apprenticeship (eg Hairdresser, Chef) Certificate/diploma (eg Child Care, Technician) University degree Higher university degree (eg Grad Dip, Masters, PhD)
1921-26 cohort	
O1q69 (same as above)	

Labour force status

Question	Response options
Census	
Q34 Last week, did the person have a full-time or part-time job of any kind? *Mark one box only.* *A 'job' means any type of work including casual, temporary, or part-time work, if it was for one hour or more.*	Yes, worked for payment or profit Yes, but absent on holidays,on paid leave, on strike, or temporarily stood down Yes, unpaid work in a family business Yes, other unpaid work No, did not have a job
Q46 Did the person actively look for work at any time in the last four weeks?	No, did not look for work Yes, looked for full-time work Yes, looked for part-time work
Q47 If the person had found a job, could the person have started work last week?	Yes, could have started work last week No, already had a job to go to No, temporarily ill or injured No, other reason
ALSWH	
1973-78 cohort	
Y4q77c-h In a usual week, how much time in total do you spend doing the following things? (*Mark one on each line)* Full-time permanent paid work Part-time permanent paid work Casual paid work Work without pay Studying Unpaid voluntary work	I don't do this activity 1-15 hours 16-24 hours 25-34 hours 35-40 hours 41-48 hours 49 hours or more
Y4q84 Are you currently unemployed and actively seeking work?	No Yes, unemployed for less than 6 months Yes, unemployed for 6 months or more
1946-51 cohort	
M5q85a-g,j In a USUAL WEEK, how much time in total do you spend doing the following things? *(Mark one on each line)* Full time paid work Part-time paid work Casual paid work Home duties (own / family home) Work without pay (eg family business) Looking for work Unpaid voluntary work Studying	I don't do this activity 1-15 hours 16-24 hours 25-34 hours 35-40 hours 41-48 hours 49 hours or more

Occupation

Question	Response options
Census	
Q38 In the main job held last week, what was the person's occupation? *Give full title.* *For example: CHILDCARE AIDE, MATHS TEACHER, PASTRY COOK, TANNING MACHINE OPERATOR, APPRENTICE*	Occupation

TOOLMAKER, SHEEP AND WHEAT FARMER. *For public servants, provide official designation and occupation.* *For armed services personnel, provide rank and occupation.*	
Q39 What are the main tasks that the person usually performs in the occupation reported at Question 38? *Give full details.* *For example: LOOKING AFTER CHILDREN AT A DAY CARE CENTRE, TEACHING SECONDARY SCHOOL STUDENTS, MAKING CAKES AND PASTRIES, OPERATING LEATHER TANNING MACHINE, LEARNING TO MAKE AND REPAIR TOOLS AND DIES, RUNNING A SHEEP AND WHEAT FARM.* *For managers, provide main activities managed.*	Tasks or duties
ALSWH	
1973-78 cohort	
Y4q83 We would like to know your main occupation now?	Manager or administrator (eg magistrate, farm manager, media producer, school principal) Professional (eg registered nurse, allied health professional, teacher, artist) Associate professional (eg office manager, branch manager, shop manager, retail buyer, youth worker, police officer) Tradesperson or related worker (eg cook, dressmaker, hairdresser, gardener, florist) Advanced clerical or service worker (eg credit officer, radio dispatcher, personal assistant, flight attendant, law clerk) Intermediate clerical, sales or service worker (eg accounts clerk, checkout supervisor, data entry operator, child care worker, nursing assistant, hospitality worker) Intermediate production or transport worker (eg machine operator, bus driver) Elementary clerical, sales or service worker (eg filing / mail clerk, parking inspector, sales assistant, telemarketer, housekeeper) Labourer or related worker (eg cleaner, factory worker, kitchen hand, fast food cook) No paid job
1946-51 cohort	
M5q94 We would like to know YOUR and YOUR PARTNER'S main occupation NOW: *(Mark one in each column)* A	Manager or administrator (eg magistrate, farm manager, media producer, school principal) Professional (eg registered nurse, allied health professional, teacher, artist) Associate professional (eg office manager, branch manager, shop manager, retail buyer, youth worker, police officer) Tradesperson or related worker (eg cook, dressmaker, hairdresser, gardener, florist) Advanced clerical or service worker (eg credit officer, radio dispatcher, personal assistant, flight attendant, law clerk) Intermediate clerical, sales or service worker (eg accounts clerk, checkout supervisor, data entry operator, child care worker, nursing assistant,

	hospitality worker) Intermediate production or transport worker (eg machine operator, bus driver) Elementary clerical, sales or service worker (eg filing / mail clerk, parking inspector, sales assistant, telemarketer, housekeeper) Labourer or related worker (eg cleaner, factory worker, kitchen hand, fast food cook) No paid job

Hours worked

Question	Response options
Census	
Q34 Last week, did the person have a full-time or part-time job of any kind? *Mark one box only.* *A 'job' means any type of work including casual, temporary, or part-time work, if it was for one hour or more.*	Yes, worked for payment or profit Yes, but absent on holidays,on paid leave, on strike, or temporarily stood down Yes, unpaid work in a family business Yes, other unpaid work No, did not have a job
Q44 Last week, how many hours did the person work in all jobs? *Add any overtime or extra time worked and subtract any time off.*	Hours worked
ALSWH	
1973-78 cohort	
Y4q77c-f In a usual week, how much time in total do you spend doing the following things? *(Mark one on each line)* Full-time permanent paid work Part-time permanent paid work Casual paid work Work without pay	I don't do this activity 1-15 hours 16-24 hours 25-34 hours 35-40 hours 41-48 hours 49 hours or more
1946-51 cohort	
M5q85a-c,e In a USUAL WEEK, how much time in total do you spend doing the following things? *(Mark one on each line)* Full time paid work Part-time paid work Casual paid work Work without pay (eg family business)	I don't do this activity 1-15 hours 16-24 hours 25-34 hours 35-40 hours 41-48 hours 49 hours or more

B2: National Health Survey 2004-2005

Self Rated Health (SF1)

Question	Response options
NHS 2004-2005	
In general, would you say your health is:	Excellent Very good Good Fair Poor
ALSWH	
1973-78 cohort	
Y4Q14 In general, would you say your health is: (Mark one only)	Excellent Very good Good Fair Poor
1946-51 cohort	
M4Q1 In general, would you say your health is: (Mark one only)	Excellent Very good Good Fair Poor
1921-26 cohort	
O4Q12 In general, would you say your health is: (Mark one only)	Excellent Very good Good Fair Poor

Body mass index (BMI)

Question	Response options
NHS 2004-2005	
Self reported weight. Women who were pregnant at the time of the interview were asked to provide their usual weight before pregnancy.	kg
Self reported height without shoes.	cm
Body mass index (BMI)	Weight(Kg)/[Height(m)]^2
WHO/NHMRC BMI categories	Under weight (BMI<18.5) Healthy weight (18.5 <= BMI < 25) Overweight (25<=BMI<30) Obese (BMI >= 30)
ALSWH	
1973-78 cohort	
Y4Q47 How tall are you without shoes? (if you are not sure please estimate)	cms OR ft and ins
Y4Q48 How much do you weigh without clothes or shoes? (If you are pregnant now, write in the weight you were in the month prior to pregnancy)	kgs OR stones and pounds
Body mass index (BMI)	Weight(Kg)/[Height(m)]^2

WHO/NHMRC BMI categories	Under weight (BMI<18.5) Healthy weight (18.5 <= BMI < 25) Overweight (25<=BMI<30) Obese (BMI >= 30)
1946-51 cohort	
M4Q57a How much do you weigh? (no clothes or shoes)	kgs OR stones and pounds
M4Q57b How tall are you without shoes?	cms OR ft and ins
Body mass index (BMI)	Weight(Kg)/[Height(m)]^2
WHO/NHMRC BMI categories	Under weight (BMI<18.5) Healthy weight (18.5 <= BMI < 25) Overweight (25<=BMI<30) Obese (BMI >= 30)
1921-26 cohort	
O4Q23 How tall are you without shoes?	cms OR ft and ins
O4Q24 How much do you weigh without clothes or shoes?	kgs OR stones and pounds
Body mass index (BMI)	Weight(Kg)/[Height(m)]^2
WHO/NHMRC BMI categories	Under weight (BMI<18.5) Healthy weight (18.5 <= BMI < 25) Overweight (25<=BMI<30) Obese (BMI >= 30)

Smoking Status

Question	Response options
NHS 2004-2005	
Adult respondents were asked whether they: • currently smoke, and if so whether they smoke regularly or at least once a week; or • have ever smoked regularly, or have smoked at least 100 cigarettes in their life, or smoked pipes, cigars or other tobacco products at least 20 times in their life. Current and ex-regular smokers were asked the age they had started smoking, and ex-regular smokers the age they had last stopped smoking regularly.	
Smoking status	Current smoker – daily Current smoker – weekly Current smoker – Other Ex-smoker Never smoked
ALSWH	
1973-78 cohort	
Y4Q53 How often do you currently smoke cigarettes or any tobacco products? (Mark one only)	Daily At least weekly (but not daily) Less often than weekly Not at all
Y4Q54a If you smoke daily, on average how	Number of cigarettes

many cigarettes do you smoke EACH DAY?	
Y4Q54b If you smoke, but not daily, on average how many cigarettes do you smoke PER WEEK?	Number of cigarettes
Y4Q55 In your lifetime, would you have smoked at least 100 cigarettes (or equivalent)? (Mark one only)	Yes No
Y4Q56 Have you ever smoked daily? (Mark one only)	Yes No
Y4Q57 At what age did you finally stop smoking daily?	Age (years)
Y4Q58 At what age did you start smoking daily?	Age (years)
Smoking status	Non-smoker Ex-smoker Smoker, less than 10 per day Smoker, 10-19 per day Smoker, 20 or more per day Smoker, unknown cigarettes per day
1946-51 cohort	
M4Q46 How often do you currently smoke cigarettes or any tobacco products? (Mark one only)	Daily At least weekly (but not daily) Less often than weekly Not at all
M4Q47 If you smoke daily, on average how many cigarettes do you smoke EACH DAY?	Number of cigarettes
M4Q48 If you smoke, but not daily, on average how many cigarettes do you smoke PER WEEK?	Number of cigarettes
M4Q49 Have you ever smoked daily? (Mark one only)	Yes No
M4Q50 At what age did you finally stop smoking daily?	Age (years)
M4Q51 At what age did you start smoking daily?	Age (years)
Smoking status	Non-smoker Ex-smoker Smoker, less than 10 per day Smoker, 10-19 per day Smoker, 20 or more per day Smoker, unknown cigarettes per day

Alcohol

Question	Response options
NHS 2004-2005	
Adult respondents were asked how long ago they last had an alcoholic drink. Those who reported they had a drink within the previous week were asked the days in that week on which they had consumed alcohol (excluding the day on which the interview was conducted), and for each of the last 3 days (in the last week) on which they drank, the types and quantities (number and size) of drinks they had consumed. They were further asked whether their consumption in that week was more, about the same, or less than their usual consumption.	
Alcohol risk 7 day average	Low risk (<= 1 drink per day) Medium risk (>1 and <=2 drinks per day)

	High risk (> 2 drinks per day) Last consumed alcohol 1week to <12 mths ago Last consumed alcohol >=12mths ago Never consumed alcohol Time since last consumed alcohol unknown
ALSWH	
1973-78 cohort	
Y4Q59 How often do you usually drink alcohol? (Mark one only)	I never drink alcohol Less than once a month Less than once a week On 1 or 2 days a week On 3 or 4 days a week On 5 or 6 days a week Every day
Y4Q60 On a day when you drink alcohol, how many standard drinks do you usually have? (Mark one only)	1 or 2 drinks per day 3 or 4 drinks per day 5 to 8 drinks per day 9 or more drinks per day
Y4Q61 How often do you have five or more standard drinks of alcohol on one occasion? (Mark one only)	Never Less than once a month About once a month About once a week More than once a week
Alcohol consumption status (NHMRC)	1. Low Risk, Up to14 drinks per week (Up to 2 drinks per day) 2. Non-drinker 3. Rarely drinks 4. Risky, 15 to 28 drinks per week (3 to 4 drinks per day) 5. High risk, More than 28 drinks per week (5 or more drinks per day)
1946-51 cohort	
M4Q59 How often do you usually drink alcohol? (Mark one only)	I never drink alcohol Less than once a month Less than once a week On 1 or 2 days a week On 3 or 4 days a week On 5 or 6 days a week Every day
M4Q60 On a day when you drink alcohol, how many standard drinks do you usually have? (Mark one only)	1 or 2 drinks per day 3 or 4 drinks per day 5 to 8 drinks per day 9 or more drinks per day
M4Q61 How often do you have five or more standard drinks of alcohol on one occasion? (Mark one only)	Never Less than once a month About once a month About once a week More than once a week
Alcohol consumption status (NHMRC)	1. Low Risk, Up to14 drinks per week (Up to 2 drinks per day) 2. Non-drinker 3. Rarely drinks 4. Risky, 15 to 28 drinks per week (3 to 4 drinks per day) 5. High risk, More than 28 drinks per week (5 or more drinks per day)

Exercise

Question	Response options
NHS 2004-2005	
Respondents aged 15 years and over were asked whether, during the previous **two** weeks, they did any: • walking for sport, recreation or fitness • moderate exercise (apart from walking) for sport, recreation or fitness • vigorous exercise for sport, recreation or fitness For each of these categories of exercise, respondents were asked: • the number of times they had done that exercise in the previous **two** weeks; and • the total amount of time spent (hours and minutes) doing that exercise over that **two** weeks.	
Exercise level was derived using intensity values of: 3.5 for walking; 5.0 for moderate exercise; and 7.5 for vigorous exercise.	METmins
Exercise level group	Sedentary Scores less than 100 Low exercise level Scores of 100 to less than 1600 Moderate exercise level Scores of 1600 to 3200 or more than 3200 but less than 2 hours vigorous exercise High exercise level Scores greater than 3200 and 2 hours or more of vigorous exercise
ALSWH	
1973-78 cohort	
Y4Q65 How many times did you do each type of activity LAST WEEK? Only count the number of times when the activity lasted for 10 minutes or more. (If you did not do an activity, please write “0” in the box) a. Walking briskly (for recreation or exercise, or to get times from place to place) b. Moderate leisure activity (like social tennis, moderate times exercise classes, recreational swimming, dancing) c. Vigorous leisure activity (that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)	 Number of times Number of times Number of times
Y4Q65 If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity? (If you did not do an activity, please write “0” in the box) a. Walking briskly b. Moderate leisure activity c. Vigorous leisure activity	 Hours and Mins Hours and Mins Hours and Mins

Exercise level (ABS) was derived using intensity values of: 3.5 for walking; 5.0 for moderate exercise; and 7.5 for vigorous exercise.	METmins
Exercise level group (ABS)	Sedentary Scores less than 50 Low exercise level Scores of 50 to less than 800 Moderate exercise level Scores of 800 to 1600 or more than 1600 but less than 1 hours vigorous exercise High exercise level Scores greater than 1600 and 1 hours or more of vigorous exercise
1946-51 cohort	
M4Q66 How many times did you do each type of activity LAST WEEK? Only count the number of times when the activity lasted for 10 minutes or more. (If you did not do an activity, please write “0” in the box) a. Walking briskly (for recreation or exercise, or to get times from place to place) b. Moderate leisure activity (like social tennis, moderate times exercise classes, recreational swimming, dancing) c. Vigorous leisure activity (that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)	 Number of times Number of times Number of times
M4Q67 If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity? (If you did not do an activity, please write “0” in the box) a. Walking briskly b. Moderate leisure activity c. Vigorous leisure activity	 Hours and Mins Hours and Mins Hours and Mins
Exercise level (ABS) was derived using intensity values of: 3.5 for walking; 5.0 for moderate exercise; and 7.5 for vigorous exercise.	METmins
Exercise level group (ABS)	Sedentary Scores less than 50 Low exercise level Scores of 50 to less than 800 Moderate exercise level Scores of 800 to 1600 or more than 1600 but less than 1 hours vigorous exercise High exercise level Scores greater than 1600 and 1 hours or more of vigorous exercise
1921-26 cohort	
O4Q38 How many times did you do each type of activity LAST WEEK? Only count the number of times when the activity lasted for 10 minutes or more. (If you did not do an activity, please write “0” in the box) a. Walking briskly (for recreation or exercise, or to get times from place to place) b. Moderate leisure activity (like social	 Number of times Number of times

tennis, moderate times exercise classes, recreational swimming, dancing) c. Vigorous leisure activity (that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)	Number of times
O4Q39 If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity? (If you did not do an activity, please write "0" in the box) a. Walking briskly b. Moderate leisure activity c. Vigorous leisure activity	 Hours and Mins Hours and Mins Hours and Mins
Exercise level (ABS) was derived using intensity values of: 3.5 for walking; 5.0 for moderate exercise; and 7.5 for vigorous exercise.	METmins
Exercise level group (ABS)	Sedentary Scores less than 50 Low exercise level Scores of 50 to less than 800 Moderate exercise level Scores of 800 to 1600 or more than 1600 but less than 1 hours vigorous exercise High exercise level Scores greater than 1600 and 1 hours or more of vigorous exercise

Appendix C: Survey materials

C1: 1946-51 cohort Pilot 6 brochure

C3: 1946-51 cohort Pilot Survey 6

C4: Evaluation forms for 1946-51 cohort Pilot 6

C5: 1946-51 cohort Pilot 6 reminder

C6: 1946-51 cohort Pilot 6 thank you

C7: Change of Details insert

Linking to the past to provide answers for the future

Contact Us

Website:
www.alswh.org.au

Email:
whasec@newcastle.edu.au

Freecall:
1800 068 081

Mail:
Women's Health Australia
Reply Paid 70
Hunter Region MC
NSW 2310

If you have any complaints about this project and would prefer to discuss these with an independent person, you should feel free to contact the University of Newcastle's Human Research Ethics Officer (02) 4921 6333 or write to them at the University of Newcastle, University Drive, Callaghan, NSW, 2308. You could also contact the University of Queensland's Human Research Ethics Officer on (07) 3365 3924 or write to them at the University of Queensland, St Lucia, QLD, 4072. The proposed research using Medicare information will be conducted in accordance with relevant privacy requirements and other legislation protecting this information and is subject to final approval being granted by government and university ethics committees.

The Australian Electoral Commission (AEC) has supplied name, address, gender and age-range information for this medical research study in conformity with Item 2 of subsection 90B(4) of the Commonwealth Electoral Act 1918 and subregulation 9(a) of the Electoral and Referendum Regulations 1940. The information has been provided by the AEC on a confidential basis and will not be forwarded on or sold or otherwise disclosed or used for any purpose other than to contact participants for this medical research project.

The University Of Queensland
AUSTRALIA

THE UNIVERSITY OF NEWCASTLE
AUSTRALIA

women's health australia

"Participating in this sort of survey gives a good opportunity to review myself or my life from time to time. How amazing three years have gone by since the last one."
1946-51 participant, Survey 5

As the project heads further into the 21st century the team at Women's Health Australia is assessing new ways to conduct research.

Past

In the past, data of consenting participants has been linked to data sourced from Medicare. This has been most successful in providing policy makers with evidence of the need for changes to health services.

Change

Changing technology means it is now possible, with your permission, to undertake linkage with many different data collected from other sources. This linkage will reduce the number of questions in future surveys and provide a bigger picture of health trends and service usage of all Australian women.

Future

In the future, the data may be linked with data collected from sources such as midwives registers, hospital and pathology records, cancer registries and screening records to name a few. Opportunities for wider linkage will help plan future health policy in Australia.

How does this process work?

Your completed survey is returned to us for processing.

Any identifying information, such as the consent form, is removed.

Your results are entered and recorded using only your ID number.

Your ID number links this survey to your previous surveys.

Only ID numbers are used when other data sets are linked. Analysts only ever see linked data with ID numbers, never names and addresses.

With both survey information and health service records information, the picture of women's health becomes clearer.

Your participation over the past fifteen years has contributed to the advancement of the understanding of the health trends and health care service use of all Australian women. The Women's Health Australia project is the most comprehensive longitudinal study on women's health ever undertaken in Australia. The response rate from your age group at the last survey was amazing and we would like to take this opportunity to thank you all for your commitment to this project.

The enclosed survey, the sixth for your age group, reflects the many differing lifestyles among all women of your generation. It may seem longer than usual, however we are asking you to complete only the sections that apply to you.

Your participation is voluntary. If you would like to discontinue your involvement in the project, please phone, email or write to us.

Yours sincerely,

Annette Dobson

Professor Annette Dobson
Project Director

women's health australia

Sixth survey for the women of the 1946-1951 cohort

2009

How to complete this survey

This is the sixth "pilot" survey for women in your age group.
As the purpose of the project is to look at changes over time, some of the questions are the same as those in previous surveys.

Please answer every question you can. If you are unsure about how to answer a question, mark the response for the closest answer to how you feel.

Please write any comments or important information on page 30. We are not able to read comments written elsewhere throughout the survey.

Please read the instructions above each question carefully. Some require you to only answer those options which are applicable to you. Other questions require you to mark one answer on each line. The questions may also refer to different time periods.

INSTRUCTIONS:

- **Use a black or blue biro**
- **Do not fold or bend this survey**

Cross the boxes like this:

In general, would you say your health is: (Mark *one only*)

Excellent	☐
Very good	☐
Good	☒ ← You would mark this one if you think your health is good
Fair	☐
Poor	☐

Print clearly in the boxes like this:

What is your postcode?
(PRINT clearly in the boxes)

2	3	0	8

Correct mistakes like this:

When you go to a General Practitioner:
(Mark one on each line)
Do you go to the same place?

	Always	Most of the time	Some-times	Rarely or never
	☐	☒	▓	☐

If you make a mistake simply scribble it out and clearly mark the correct answer with a cross.

If you need help to answer any questions, please ring 1800 068 081
(This is a FREECALL number)

** If you are concerned about any of your health experiences and would like some help, you may like to contact:*

- *your nearest Women's Health Centre or Community Health Centre;*
- *your General Practitioner for advice about who would be the best person in your community for you to talk to.*

** If you feel distressed NOW and would like someone to talk to, you could ring Lifeline on 131 114 (local call).*

The questions on the first page ask only about NOW - how your health is NOW and about how your health limits certain activities NOW.

Q1 **In general, would you say your health is:**
(Mark one only)

- Excellent ☐
- Very good ☐
- Good ☐
- Fair ☐
- Poor ☐

Q2 **Compared to one year ago, how would you rate your health in general now?**
(Mark one only)

- Much better now than one year ago ☐
- Somewhat better now than one year ago ☐
- About the same now as one year ago ☐
- Somewhat worse now than one year ago ☐
- Much worse now than one year ago ☐

Q3 **The following questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?**
(Mark one on each line)

		Yes, limited a lot	Yes, limited a little	No, not limited at all
a	VIGOROUS activities, such as running, lifting heavy objects, participating in strenuous sports	☐	☐	☐
b	MODERATE activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	☐	☐	☐
c	Lifting or carrying groceries	☐	☐	☐
d	Climbing SEVERAL flights of stairs	☐	☐	☐
e	Climbing ONE flight of stairs	☐	☐	☐
f	Bending, kneeling or stooping	☐	☐	☐
g	Walking MORE THAN ONE kilometre	☐	☐	☐
h	Walking HALF a kilometre	☐	☐	☐
i	Walking 100 metres	☐	☐	☐
j	Bathing or dressing yourself	☐	☐	☐

The questions on this page and the next one ask about your health IN THE LAST FOUR WEEKS.

Q4 **During the PAST FOUR WEEKS, have you had any of the following problems with your work *(including your work outside the home and housework)* or other regular daily activities AS A RESULT OF YOUR PHYSICAL HEALTH?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Were limited in the kind of work or other activities	☐	☐
d	Had difficulty performing the work or other activities *(eg it took extra effort)*	☐	☐

Q5 **During the PAST FOUR WEEKS, have you had any of the following problems with your work or other regular daily activities AS A RESULT OF ANY EMOTIONAL PROBLEMS *(such as feeling depressed or anxious)*?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Didn't do work or other activities as carefully as usual	☐	☐

Q6 **During the PAST FOUR WEEKS, to what extent have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your normal social activities with family, friends, neighbours or groups?**

(Mark one only)

- Not at all ☐
- Slightly ☐
- Moderately ☐
- Quite a bit ☐
- Extremely ☐

Q7 **How much BODILY pain have you had during the PAST FOUR WEEKS?**

(Mark one only)

- No bodily pain ☐
- Very mild ☐
- Mild ☐
- Moderate ☐
- Severe ☐
- Very severe ☐

Q8 **During the PAST FOUR WEEKS, how much did PAIN interfere with your normal work *(including both work outside the home and housework)*?**

(Mark one only)

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

Q9 **For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST FOUR WEEKS:**

(Mark one on each line)

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a	Did you feel full of life?	☐	☐	☐	☐	☐	☐
b	Have you been a very nervous person?	☐	☐	☐	☐	☐	☐
c	Have you felt so down in the dumps that nothing could cheer you up?	☐	☐	☐	☐	☐	☐
d	Have you felt calm and peaceful?	☐	☐	☐	☐	☐	☐
e	Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
f	Have you felt down?	☐	☐	☐	☐	☐	☐
g	Did you feel worn out?	☐	☐	☐	☐	☐	☐
h	Have you been a happy person?	☐	☐	☐	☐	☐	☐
i	Did you feel tired?	☐	☐	☐	☐	☐	☐

Q10 **During the PAST FOUR WEEKS, how much of the time have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities *(like visiting friends, relatives, etc)*?**

(Mark one only)

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

Q11 **How TRUE or FALSE is EACH of the following statements for you?**

(Mark one on each line)

		Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a	I seem to get sick a little easier than other people	☐	☐	☐	☐	☐
b	I am as healthy as anybody I know	☐	☐	☐	☐	☐
c	I expect my health to get worse	☐	☐	☐	☐	☐
d	My health is excellent	☐	☐	☐	☐	☐

women's health is about using health services

Q12 **How many times have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**

(Mark one on each line)

		None	Once or twice	3 or 4 times	5 or 6 times	7-12 times	13-24 times	25 or more times
a	A family doctor or another General Practitioner (GP)	☐	☐	☐	☐	☐	☐	☐
b	A hospital doctor *(eg in outpatients or casualty)*	☐	☐	☐	☐	☐	☐	☐
c	A specialist doctor	☐	☐	☐	☐	☐	☐	☐

Q13 **Have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**

(Mark one on each line)

		Yes	No
a	Physiotherapist	☐	☐
b	Counsellor / Psychologist / Social worker	☐	☐
c	A community nurse, practice nurse, or nurse practitioner	☐	☐
d	Optician / Optometrist	☐	☐
e	Dietitian	☐	☐
f	Podiatrist	☐	☐
g	Massage therapist	☐	☐
h	Naturopath / Herbalist	☐	☐
i	Chiropractor	☐	☐
j	Osteopath	☐	☐
k	Acupuncturist	☐	☐
l	Other alternative health practitioner *(eg aromatherapist, homeopath, reflexologist, iridologist)*	☐	☐

Q14 **How often have you used the following therapies for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**

(Mark one on each line)

		Never	Rarely	Sometimes	Often
a	Vitamins / Minerals	☐	☐	☐	☐
b	Yoga or meditation	☐	☐	☐	☐
c	Herbal medicines	☐	☐	☐	☐
d	Aromatherapy oils	☐	☐	☐	☐
e	Chinese medicines	☐	☐	☐	☐
f	Prayer or spiritual healing	☐	☐	☐	☐
g	Other alternative therapies	☐	☐	☐	☐

Q15 **When you go to a General Practitioner:**

(Mark one on each line)

		Always	Most of the time	Some-times	Rarely or never
a	Do you go to the same place?	☐	☐	☐	☐
b	Do you usually see the same doctor?	☐	☐	☐	☐

Q16 **How would you rate the cost to you of your LAST visit to a General Practitioner?**
(Mark one only)

- No cost to me ☐
- Good ☐
- Fair ☐
- Poor ☐
- Don't know ☐

Q17 **Do you have a Health Care Card?**
This is a card that entitles you to discounts and assistance with medical expenses.
This is not the same as a Medicare card.
(Mark one only)

- Yes ☐
- No ☐

Q18a **Do you have private health insurance for HOSPITAL COVER?**
(Mark one only)

- Yes ☐
- No – I am covered by Veterans' Affairs ☐
- No – because I can't afford the cost ☐
- No – because I don't think you get value for money ☐
- No – because I don't think I need it ☐
- No – other reason ☐

Q18b **Do you have private health insurance for ANCILLARY services (eg dental, physiotherapy)?**
(Mark one only)

- Yes ☐
- No – I am covered by Veterans' Affairs ☐
- No – because I can't afford the cost ☐
- No – because I don't think you get value for money ☐
- No – because I don't think I need it ☐
- No - because the services are not available where I live ☐
- No – other reason ☐

Q19 **Have you been admitted to hospital in the LAST TWELVE MONTHS?**
(Mark one only)

- No ☐
- Yes, day only ☐
- Yes, spent at least one night ☐

Q20 **When did you last have:**
(Mark one on each line)

		In the last 2 years	2-5 years ago	More than 5 years ago	Never	Don't know
a	A Pap test?	☐	☐	☐	☐	☐
b	A mammogram?	☐	☐	☐	☐	☐

Q21 **Have you EVER had an abnormal result from:** *(Mark one on each line)*

		Yes	No	Don't know
a	A Pap test?	☐	☐	☐
b	A mammogram?	☐	☐	☐

Q22 **In the PAST THREE YEARS, have you:** *(Mark all that apply on each line)*

		Doctor	Nurse	Other	Not checked
a	Had your blood pressure checked?	☐	☐	☐	☐
b	Had your cholesterol checked?	☐	☐	☐	☐
c	Had your blood sugar level checked?	☐	☐	☐	☐
d	Had your skin checked *(eg spots, lesions, moles)*?	☐	☐	☐	☐

Q23 **In the PAST THREE YEARS, have you:** *(Mark one on each line)*

		Yes	No
a	Had your breasts examined by a doctor or nurse?	☐	☐
b	Carried out *regular monthly* breast self examination?	☐	☐
c	Had a bone density test?	☐	☐
d	Had a test for bowel cancer?	☐	☐
e	Had a reminder from your general practice to have a screening test *(eg blood pressure, cholesterol, blood sugar, skin)?*	☐	☐

Q24 **In the PAST THREE YEARS, have you received advice / information about lifestyle changes from any of these sources?** *(Mark one on each line)*

		Yes	No
a	A doctor	☐	☐
b	A nurse	☐	☐
c	Other health professional *(eg physiotherapist, naturopath)*	☐	☐
d	Program or organisation *(eg weight loss program, gym, self help group)*	☐	☐
e	Books, magazines	☐	☐
f	The internet	☐	☐
g	Television	☐	☐
h	Radio	☐	☐
i	Family or friends	☐	☐
j	Private health fund	☐	☐

Q25 **Are you CURRENTLY taking:** *(Mark one on each line)*

		Yes	No
a	The oral contraceptive pill?	☐	☐
b	Hormone Replacement Therapy (HRT)?	☐	☐

Q26 **Have you:** *(Mark one on each line)*

		Yes		No	
a	Had a hysterectomy?	☐	← If Yes, go to Q29	☐	
b	Had a period or menstrual bleeding in the last 12 months?	☐		☐	← If No, go to Q28
c	Had a period or menstrual bleeding in the last 3 months?	☐		☐	

Q27 **Compared with twelve months ago, are your periods:** *(Mark one only)*

- Less frequent ☐
- About the same ☐
- More frequent ☐
- Changeable ☐

Q28 **If you have reached menopause, at what age did your periods completely stop?**

(Please write the age in the box) ☐☐ years Not applicable ☐

Q29 **Have you ever had Gestational Diabetes (diabetes during pregnancy)?**

(Mark one only)

Yes ☐

No ☐

Q30 **Thinking about your own health care, how would you rate the following?**

(Mark one on each line)

		Excellent	Very good	Good	Fair	Poor	Don't know
a	Access to medical specialists if you need them	☐	☐	☐	☐	☐	☐
b	Access to a hospital if you need it	☐	☐	☐	☐	☐	☐
c	Access to medical care in an emergency	☐	☐	☐	☐	☐	☐
d	Access to after-hours medical care	☐	☐	☐	☐	☐	☐
e	Access to a GP who bulk bills	☐	☐	☐	☐	☐	☐
f	Access to a female GP	☐	☐	☐	☐	☐	☐
g	Hours when a GP is available	☐	☐	☐	☐	☐	☐
h	Number of GPs you have to choose from	☐	☐	☐	☐	☐	☐
i	Ease of seeing the GP of your choice	☐	☐	☐	☐	☐	☐
j	How long you wait to get a GP appointment	☐	☐	☐	☐	☐	☐
k	The outcomes of your medical care *(how much you are helped)*	☐	☐	☐	☐	☐	☐
l	Ease of obtaining a mammogram	☐	☐	☐	☐	☐	☐
m	Ease of obtaining a Pap test	☐	☐	☐	☐	☐	☐
n	Access to a counselling service if you need it	☐	☐	☐	☐	☐	☐

Q31 **In the LAST TWELVE MONTHS have you consulted a dentist?** *(Mark one only)*

No, I did not need to see a dentist ☐

No, because there was no dentist available locally ☐

No, I could not get there because of travel difficulties ☐

No, because it would cost more than I could afford ☐

No, I did not go to the dentist because of another reason ☐

Yes, I saw a dentist ☐

Q32 **How would you rate the overall condition of your teeth, dentures or gums?**

(Mark one only)

Excellent ☐

Very good ☐

Good ☐

Fair ☐

Poor ☐

Q33 **There are 16 teeth, including wisdom teeth in the upper jaw. How many teeth do you have remaining in your UPPER jaw?**

(Please write number in boxes) ☐☐

Q34 **There are 16 teeth, including wisdom teeth in the lower jaw. How many teeth do you have remaining in your LOWER jaw?**

(Please write number in boxes) ☐☐

Q35 **Do you wear a denture or false teeth in your upper jaw?** *(Mark one only)*

Yes ☐
No ☐

Q36 **Do you wear a denture or false teeth in your lower jaw?** *(Mark one only)*

Yes ☐
No ☐

Q37 **In the LAST TWELVE MONTHS have you:** *(Mark all that apply)*

		Yes
a	Slipped, tripped or stumbled?	☐
b	Had a fall to the ground?	☐
c	Been injured as a result of a fall?	☐
d	Needed to seek medical attention for an injury from a fall?	☐
e	Had any other injury from an accident at your home?	☐
f	Broken or fractured any bone/s?	☐
g	None of the above	☐

Q38 **In the PAST THREE YEARS, have you been diagnosed or treated for:** *(Mark all that apply)*

		Yes, in the past 3 years
a	Diabetes *(high blood sugar)*	☐
b	Impaired glucose tolerance	☐
c	Osteoarthritis	☐
d	Rheumatoid arthritis	☐
e	Other arthritis	☐
f	Heart disease *(including heart attack, angina)*	☐
g	Hypertension *(high blood pressure)*	☐
h	Stroke	☐
i	Low iron level *(iron deficiency or anaemia)*	☐
j	Asthma	☐
k	Bronchitis / emphysema	☐
l	Osteoporosis	☐
m	Breast cancer	☐
n	Cervical cancer	☐
o	Skin cancer *(including melanoma)*	☐
p	Other cancer *(please specify on page 30)*	☐
q	Depression	☐
r	Anxiety / nervous disorder	☐
s	Other psychiatric disorder	☐
t	Chronic Fatigue Syndrome	☐
u	Sexually transmitted infection *(eg genital herpes or warts, chlamydia)*	☐
v	Other major illness or disability *(please specify on page 30)*	☐
w	None of these conditions	☐

Q39 **Compared to when you were in your twenties, how good are you at:**

(Mark one on each line)

		Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now
a	Remembering the name of a person just introduced to you?	☐	☐	☐	☐	☐
b	Recalling telephone numbers or other numbers that you use on a daily or weekly basis?	☐	☐	☐	☐	☐
c	Recalling where you put objects *(such as keys)* in your home?	☐	☐	☐	☐	☐
d	Remembering specific facts from a newspaper or magazine article you have just finished reading?	☐	☐	☐	☐	☐
e	Remembering the item(s) you intend to buy when you arrive at the shops?	☐	☐	☐	☐	☐
f	In general, how would you describe your memory compared to when you were in your twenties?	☐	☐	☐	☐	☐

Q40 **In the PAST THREE YEARS, have you had any of the following operations or procedures?**

(Mark all that apply)

		Yes, in the past 3 years
a	Both ovaries removed	☐
b	Repair of prolapsed vagina, bladder or bowel	☐
c	Endometrial ablation *(removal of the lining of the uterus)*	☐
d	Joint replacement *(eg hip, knee)*	☐
e	Mastectomy *(removal of one or both breasts)*	☐
f	Lumpectomy *(removal of lump from breast)*	☐
g	Removal of skin cancer	☐
h	Any cancer surgery *(other than skin or breast)*	☐
i	Chemotherapy or radiotherapy for any cancer	☐
j	Breast biopsy *(taking a sample of breast tissue)*	☐
k	Hysteroscopy *(investigative procedure to examine the uterus)*	☐
l	Cholecystectomy *(gall bladder removed)*	☐
m	Gastroscopy / colonoscopy	☐
n	None of these	☐

Q41 **Do you have any of these sleeping problems?**
(Mark <u>all that apply</u>)

		Yes
a	Waking up in the early hours of the morning	☐
b	Lying awake for most of the night	☐
c	Taking a long time to get to sleep	☐
d	Worry keeping you awake at night	☐
e	Sleeping badly at night	☐
f	None of these problems	☐

Q42 **In the PAST FOUR WEEKS, have you taken any:**
(Mark <u>one on each line</u>)

		Yes	No	
a	Medications prescribed by a doctor?	☐	☐	If No to both, go to Q44
b	Medications / vitamins / supplements or herbal therapies bought without a prescription at the chemist, supermarket or health food shop?	☐	☐	

Q43 **Please write down the names of all your medications, vitamins, supplements or herbal therapies taken in the PAST FOUR WEEKS. Where possible, copy names from the packets.**
(Please write in block letters)

a		i	
b		j	
c		k	
d		l	
e		m	
f		n	
g		o	
h		p	

Q44 **In the LAST 12 MONTHS, have you had any of the following:**
(Mark one on each line in column A.
For all that apply also answer column B.)

		A				B
		Never	Rarely	Some-times	Often	For the problems you had, DID you seek help? Mark here if you DID seek help
a	Allergies, hay fever, sinusitis	☐	☐	☐	☐	☐
b	Breathing difficulty	☐	☐	☐	☐	☐
c	Indigestion / heartburn	☐	☐	☐	☐	☐
d	Chest pain	☐	☐	☐	☐	☐
e	Headaches / migraines	☐	☐	☐	☐	☐
f	Severe tiredness	☐	☐	☐	☐	☐
g	Stiff or painful joints	☐	☐	☐	☐	☐
h	Back pain	☐	☐	☐	☐	☐
i	Urine that burns or stings	☐	☐	☐	☐	☐
j	Haemorrhoids *(piles)*	☐	☐	☐	☐	☐
k	Other bowel problems	☐	☐	☐	☐	☐
l	Vaginal discharge or irritation	☐	☐	☐	☐	☐
m	Hot flushes	☐	☐	☐	☐	☐
n	Night sweats	☐	☐	☐	☐	☐
o	Eyesight problems	☐	☐	☐	☐	☐
p	Leaking urine	☐	☐	☐	☐	☐
q	Mouth, teeth or gum problems	☐	☐	☐	☐	☐
r	Avoided eating some foods because of problems with your teeth, mouth or dentures	☐	☐	☐	☐	☐
s	Toothache	☐	☐	☐	☐	☐
t	Hearing problems	☐	☐	☐	☐	☐
u	Depression	☐	☐	☐	☐	☐
v	Anxiety	☐	☐	☐	☐	☐
w	Episodes of intense anxiety *(eg panic attacks)*	☐	☐	☐	☐	☐
x	Palpitations *(feeling that your heart is racing or fluttering in your chest)*	☐	☐	☐	☐	☐

Q45 **In the PAST WEEK, have you been feeling that life isn't worth living?** *(Mark one only)*

Yes ☐
No ☐

Q46 **In the PAST 6 MONTHS, have you EVER deliberately hurt yourself or done anything that you knew might have harmed or even killed you?** *(Mark one only)*

Yes ☐
No ☐

If you answered YES to either of the last 2 questions, you might like to talk to someone about how you are feeling. You could ring Lifeline on 131114 (local call).

women's health is about coping with stress

Q47 **Over the LAST TWELVE MONTHS, how stressed have you felt about the following areas of your life:** *(Mark one on each line)*

		Not applicable	Not at all stressed	Somewhat stressed	Moderately stressed	Very stressed	Extremely stressed
a	Own health		☐	☐	☐	☐	☐
b	Health of family members	☐	☐	☐	☐	☐	☐
c	Work / employment	☐	☐	☐	☐	☐	☐
d	Living arrangements		☐	☐	☐	☐	☐
e	Study	☐	☐	☐	☐	☐	☐
f	Money		☐	☐	☐	☐	☐
g	Relationship with parents	☐	☐	☐	☐	☐	☐
h	Relationship with partner / spouse	☐	☐	☐	☐	☐	☐
i	Relationship with children	☐	☐	☐	☐	☐	☐
j	Relationship with other family members	☐	☐	☐	☐	☐	☐

Q48 **How much do you agree or disagree with each of the following statements?** *(Mark one on each line)*

		Disagree strongly	Disagree	Disagree slightly	Agree slightly	Agree	Agree strongly
a	At home, I feel I have control over what happens in most situations	☐	☐	☐	☐	☐	☐
b	I feel that what happens in my life is often determined by factors beyond my control	☐	☐	☐	☐	☐	☐
c	Over the next 5-10 years I expect to have more positive than negative experiences	☐	☐	☐	☐	☐	☐
d	I often have the feeling that I am being treated unfairly	☐	☐	☐	☐	☐	☐
e	In the past 10 years my life has been full of changes without my knowing what will happen next	☐	☐	☐	☐	☐	☐
f	I gave up trying to make big improvements or changes in my life a long time ago	☐	☐	☐	☐	☐	☐

Q49 **Thinking about your current approach to life, please indicate how much you think each statement describes you:** *(Mark one on each line)*

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a	In uncertain times, I usually expect the best	☐	☐	☐	☐	☐
b	If something can go wrong for me, it will	☐	☐	☐	☐	☐
c	I'm always optimistic about my future	☐	☐	☐	☐	☐
d	I hardly ever expect things to go my way	☐	☐	☐	☐	☐
e	I rarely count on good things happening to me	☐	☐	☐	☐	☐
f	Overall, I expect more good things to happen to me than bad	☐	☐	☐	☐	☐

Q50 **What is your postcode?**

a What is your RESIDENTIAL postcode?
(where you live)

b What is the postcode of your POSTAL ADDRESS?
(if different from residential)

Q51 **Which of the following events have you experienced?**
(Mark all that apply)

		A Yes, in the last 12 months	B Yes, more than 12 months ago
a	Major personal illness	☐	☐
b	Major personal injury or involvement in a serious accident	☐	☐
c	Major personal achievement	☐	☐
d	Birth of a grandchild	☐	☐
e	Major surgery *(not including dental work)*	☐	☐
f	Going through menopause	☐	☐
g	Major decline in health of spouse or partner	☐	☐
h	Major decline in health of other close family member or close friend	☐	☐
i	Starting a new, close personal relationship	☐	☐
j	Infidelity of spouse or partner	☐	☐
k	Break-up of a close personal relationship	☐	☐
l	Divorce	☐	☐
m	Major conflict with teenage or older children	☐	☐
n	Child or other family member leaving home *(due to marriage, to attend university, etc)*	☐	☐
o	Death of spouse or partner	☐	☐
p	Death of a child	☐	☐
q	Death of other close family member	☐	☐
r	Death of close friend	☐	☐
s	Changing your type of work / hours / conditions / responsibilities at work	☐	☐
t	Retirement	☐	☐
u	Your spouse or partner retiring from work	☐	☐
v	Being made redundant	☐	☐
w	Your spouse / partner being made redundant	☐	☐
x	Decreased income	☐	☐
y	Moving house	☐	☐
z	Natural disaster *(fire, flood, drought, earthquake etc)* or house fire	☐	☐
aa	Major loss or damage to personal property	☐	☐
bb	Being robbed	☐	☐
cc	Being pushed, grabbed, shoved, kicked or hit	☐	☐
dd	Being forced to take part in unwanted sexual activity	☐	☐
ee	Legal troubles or involved in a court case	☐	☐
ff	Family member / close friend being arrested / in gaol	☐	☐
gg	You or a family member involved in problem gambling	☐	☐
hh	None of these events	☐	

Q52 **Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way DURING THE LAST WEEK.**
(Mark one on each line)

		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)
a	I was bothered by things that don't usually bother me	☐	☐	☐	☐
b	I had trouble keeping my mind on what I was doing	☐	☐	☐	☐
c	I felt depressed	☐	☐	☐	☐
d	I felt that everything I did was an effort	☐	☐	☐	☐
e	I felt hopeful about the future	☐	☐	☐	☐
f	I felt fearful	☐	☐	☐	☐
g	My sleep was restless	☐	☐	☐	☐
h	I was happy	☐	☐	☐	☐
i	I felt lonely	☐	☐	☐	☐
j	I could not "get going"	☐	☐	☐	☐
k	I felt terrific	☐	☐	☐	☐

Q53 **In the past month:** *(Mark one on each line)*

		Yes	No
a	Have you felt keyed up or on edge?	☐	☐
b	Have you been worrying a lot?	☐	☐
c	Have you been irritable?	☐	☐
d	Have you had difficulty relaxing?	☐	☐
e	Have you been sleeping poorly?	☐	☐
f	Have you had headaches or neck aches?	☐	☐
g	Have you had any of the following: trembling, tingling, dizzy spells, sweating, diarrhoea or needing to pass urine more often than normal?	☐	☐
h	Have you been worried about your health?	☐	☐
i	Have you had difficulty falling asleep?	☐	☐

Q54 **Do you regularly NEED help with daily tasks because of long-term illness, disability or frailty *(eg personal care, getting around, preparing meals etc)*?**
(Mark one only)

Yes ☐
No ☐

The following sections are about other health habits, time use and your relationships.

Often there are no "right" or "wrong" answers – we are interested only in your opinion or feelings.

If you feel uncomfortable about answering a question, just leave it and go on to the next one, but please try to finish the survey if you can.

You may like to take a break now and do the second part later.

women's health is about healthy weight and shape

Q55 **a** **How much do you weigh?** *(no clothes or shoes)*

☐☐☐ **kg** **OR** ☐☐ **stones** ☐☐ **pounds**

b **How tall are you without shoes?**

☐☐☐ **cm** **OR** ☐☐ **feet** ☐☐ **inch**

Q56 **What is your waist measurement?**

*Please measure your waist while in your underwear. If possible, get someone to help you take the measurement. Find your navel (belly button) and measure at that level. Be careful not to have the tape too tight. You should be able to slip your little finger under it comfortably. Write the measurement to the **nearest** centimetre (or inches if this is the only measure you have available).*

☐☐☐ **cm** **OR** ☐☐ **inches**

Q57 **In the LAST THREE YEARS, have you:**

(Mark one on each line)

		Yes	No
a	Lost 5 kg or more on purpose?	☐	☐
b	Lost 5 kg or more for any other reason?	☐	☐
c	Gained 5 kg or more?	☐	☐

Q58 **Have you used any of these methods to lose weight or to control your weight or shape in the LAST TWELVE MONTHS?**

(Mark one on each line)

		Yes	No
a	Commercial weight loss programs *(eg Weight Watchers®, Lite n' Easy®, Sureslim®, Jenny Craig®)*	☐	☐
b	Meal replacements or slimming products *(eg OPTIFAST®, Herbalife®)*	☐	☐
c	Exercise	☐	☐
d	Cut down on the size of meals or between meal snacks	☐	☐
e	Cut down on fats *(low fat)* and / or sugars	☐	☐
f	Low glycaemic index (GI) diet	☐	☐
g	Diet book diets *(eg Atkins, Zone, CSIRO diet, Liver Cleansing diet)*	☐	☐
h	Laxatives, diuretics or diet pills *(eg Xenical®, Reductil®)*	☐	☐
i	Fasting	☐	☐
j	Smoking	☐	☐
k	Other *(please specify on page 30)*	☐	☐

Scan marks incorrect

Q59 **How often do you usually drink alcohol?**
(Mark one only)

- I have never drunk alcohol in my life ☐
- I never drink alcohol, but I have in the past ☐

Go to Q62

- I drink rarely ☐
- Less than once a week ☐
- On 1 or 2 days a week ☐
- On 3 or 4 days a week ☐
- On 5 or 6 days a week ☐
- Every day ☐

Q60 **On a day when you drink alcohol, how many drinks do you usually have?**
(Mark one only)

- 1 or 2 drinks per day ☐
- 3 or 4 drinks per day ☐
- 5 to 8 drinks per day ☐
- 9 or more drinks per day ☐

Q61 **How often do you have five or more drinks of alcohol on one occasion?**
(Mark one only)

- Never ☐
- Less than once a month ☐
- About once a month ☐
- About once a week ☐
- More than once a week ☐

Q62 **How many glasses / cups of non-alcoholic drinks do you usually have each day *(eg juice, tea, coffee, water, milk, etc)*?**
(Mark one only)

- 0 – 2 glasses ☐
- 3 – 5 glasses ☐
- 6 – 8 glasses ☐
- 9 or more glasses ☐

Questions 63 to 73 are modified from the Cancer Council of Victoria Food Frequency Questionnaire and are used with permission.

This section is about your **usual** eating habits over the **LAST TWELVE MONTHS**. Where possible, give only **one answer per question** for the type of food you eat **most often** (if you can't decide which type you have most often, answer for the types you usually eat).

Q63 How many pieces of FRESH fruit do you usually eat per day?
(Count ½ cup diced fruit, berries or grapes as one piece)

- I don't eat fruit ☐
- Less than 1 piece of fruit per day ☐
- 1 piece of fruit per day ☐
- 2 pieces of fruit per day ☐
- 3 pieces of fruit per day ☐
- 4 pieces of fruit per day ☐
- 5 or more pieces of fruit per day ☐

Q64 How many DIFFERENT vegetables do you usually eat per day?
(Count all types fresh, frozen or tinned)

- Less than 1 vegetable per day ☐
- 1 vegetable per day ☐
- 2 vegetables per day ☐
- 3 vegetables per day ☐
- 4 vegetables per day ☐
- 5 vegetables per day ☐
- 6 or more vegetables per day ☐

Q65 How many SERVES of vegetables do you usually eat each day?
(A serve = half a cup of cooked vegetables or a cup of salad vegetables)

- None ☐
- 1 serve ☐
- 2-3 serves ☐
- 4 serves ☐
- 5 serves or more ☐

Q66 What type of milk do you usually use?

- **a** None ☐
- **b** Full cream milk ☐
- **c** Reduced fat milk ☐
- **d** Skim milk ☐
- **e** Soya milk ☐

Q67 How much milk do you usually use per day?
(Include flavoured milk and milk added to tea, coffee, cereal etc)

- None ☐
- Less than 250ml *(1 large cup or mug)* ☐
- Between 250ml and 500ml *(1-2 cups)* ☐
- Between 500ml and 750ml *(2-3 cups)* ☐
- 750ml *(3 cups)* or more ☐

Q68 What type of bread do you usually eat?

- **a** I don't eat bread ☐
- **b** High fibre white bread ☐
- **c** White bread ☐
- **d** Wholemeal bread ☐
- **e** Rye bread ☐
- **f** Multi-grain bread ☐

Q69 How many slices of bread do you usually eat per day? *(Include all types, fresh or toasted and count one bread roll as 2 slices)*

- Less than 1 slice per day ☐
- 1 slice per day ☐
- 2 slices per day ☐
- 3 slices per day ☐
- 4 slices per day ☐
- 5-7 slices per day ☐
- 8 or more slices per day ☐

Q70 Which spread do you usually put on bread?

- **a** I don't use any fat spread ☐
- **b** Margarine of any kind ☐
- **c** Polyunsaturated margarine ☐
- **d** Monounsaturated margarine ☐
- **e** Butter and margarine blends ☐
- **f** Butter ☐

Q71 On average, how many eggs do you usually eat per week?

- I don't eat eggs ☐
- Less than 1 egg per week ☐
- 1 to 2 eggs per week ☐
- 3 to 5 eggs per week ☐
- 6 or more eggs per week ☐

Q72 What types of cheese do you usually eat?

- **a** I don't eat cheese ☐
- **b** Hard cheeses eg parmesan, romano ☐
- **c** Firm cheeses eg cheddar, edam ☐
- **d** Soft cheeses eg camembert, brie ☐
- **e** Ricotta or cottage cheese ☐
- **f** Cream cheese ☐
- **g** Low fat cheese ☐

Scan marks incorrect

Q73a **Over the LAST 12 MONTHS, on average, how often did you eat the following foods?**
(Mark one on each line)

		Never	Less than once a week	Once a week or more
a	All-Bran™	☐	☐	☐
b	Sultana Bran™, Fibre Plus™, Branflakes™	☐	☐	☐
c	Weet Bix™, Vita Brits™, Weeties™	☐	☐	☐
d	Cornflakes, Nutrigrain™, Special K™	☐	☐	☐
e	Porridge	☐	☐	☐
f	Muesli	☐	☐	☐
g	Rice	☐	☐	☐
h	Pasta or noodles *(include lasagne)*	☐	☐	☐
i	Nuts	☐	☐	☐
j	Peanut butter or peanut paste	☐	☐	☐
k	Vegemite™, Marmite™, Promite™	☐	☐	☐
l	Tinned or frozen fruit *(any kind)*	☐	☐	☐
m	Oranges or other citrus fruit	☐	☐	☐
n	Apples	☐	☐	☐
o	Pears	☐	☐	☐
p	Bananas	☐	☐	☐
q	Watermelon, rockmelon, honeydew etc	☐	☐	☐
r	Pineapple	☐	☐	☐
s	Strawberries	☐	☐	☐
t	Apricots	☐	☐	☐
u	Peaches or nectarines	☐	☐	☐
v	Mango or paw paw	☐	☐	☐
w	Avocado	☐	☐	☐
x	Fruit or vegetable juice	☐	☐	☐
y	Potatoes cooked without fat	☐	☐	☐
z	Tomato sauce, tomato paste or dried tomatoes	☐	☐	☐
aa	Fresh or tinned tomatoes	☐	☐	☐
bb	Peppers *(capsicum)*	☐	☐	☐
cc	Lettuce, endive or other salad greens	☐	☐	☐
dd	Cucumber	☐	☐	☐
ee	Celery	☐	☐	☐
ff	Beetroot	☐	☐	☐
gg	Carrots	☐	☐	☐
hh	Cabbage or Brussels sprouts	☐	☐	☐
ii	Cauliflower	☐	☐	☐
jj	Broccoli	☐	☐	☐
kk	Silverbeet or spinach	☐	☐	☐
ll	Peas	☐	☐	☐
mm	Green beans	☐	☐	☐

		Never	Less than once a week	Once a week or more
nn	Bean sprouts or alfalfa sprouts	☐	☐	☐
oo	Baked beans	☐	☐	☐
pp	Soy beans, soy bean curd or tofu	☐	☐	☐
qq	Other beans *(include chick peas, lentils etc)*	☐	☐	☐
rr	Pumpkin	☐	☐	☐
ss	Onions or leeks	☐	☐	☐
tt	Garlic *(not garlic tablets)*	☐	☐	☐
uu	Mushrooms	☐	☐	☐
vv	Zucchini	☐	☐	☐

Q73b **Over the LAST 12 MONTHS, on average, how often did you eat the following foods?**
(Mark one on each line)

		Never	Less than once a week	Once a week	2-4 times per week	5 or more times per week
a	Cheese	☐	☐	☐	☐	☐
b	Ice cream	☐	☐	☐	☐	☐
c	Yoghurt	☐	☐	☐	☐	☐
d	Beef	☐	☐	☐	☐	☐
e	Veal	☐	☐	☐	☐	☐
f	Chicken	☐	☐	☐	☐	☐
g	Lamb	☐	☐	☐	☐	☐
h	Pork	☐	☐	☐	☐	☐
i	Fish, steamed, grilled or baked	☐	☐	☐	☐	☐
j	Fish, tinned *(salmon, tuna, sardines etc)*	☐	☐	☐	☐	☐

Q74 **How often do you currently smoke cigarettes or any tobacco products?**
(Mark one only)

Daily ☐ ← Go to Q75
At least weekly *(but not daily)* ☐ ← Go to Q76
Less often than weekly ☐
Not at all ☐ ← Go to Q77

Q75 **If you smoke daily, on average how many cigarettes do you smoke EACH DAY?**
PRINT the number in the box

☐☐☐ cigarettes per day ← Go to Q79

Q76 **If you smoke, but not daily, on average how many cigarettes do you smoke PER WEEK?**
PRINT the number in the box

☐☐☐ cigarettes per week

Q77 **Have you ever smoked DAILY?**
(Mark one only)

Yes ☐
No ☐ ← If No, go to Q79

Q78 **At what age did you finally stop smoking DAILY?**
PRINT age in the box

☐☐ years old

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.

Q79 **How many hours EACH DAY do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television or working at a desk or computer?**

a On a usual **WEEK DAY** ☐☐ hours

b On a usual **WEEKEND DAY** ☐☐ hours

The next two questions are about the amount of physical activity you did LAST WEEK.

Q80 **How many *times* did you do each type of activity LAST WEEK?**
Only count the number of times when the activity lasted for 10 minutes or more.
*(If you did **not** do an activity, please write "0" in the box)*

a **Walking briskly** *(for recreation or exercise, or to get from place to place)* ☐☐ *times*

b **Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)* ☐☐ *times*

c **Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)* ☐☐ *times*

d **Vigorous household or garden chores** *(that make you breathe harder or puff and pant)* ☐☐ *times*

Q81 **If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity?**
*(If you did **not** do an activity, please write "0" in the box)*

a **Walking briskly** *(for recreation or exercise, or to get from place to place)* ☐☐ hours ☐☐ minutes

b **Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)* ☐☐ hours ☐☐ minutes

c **Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)* ☐☐ hours ☐☐ minutes

d **Vigorous household or garden chores** *(that make you breathe harder or puff and pant)* ☐☐ hours ☐☐ minutes

Q82 **This question asks about your physical activity in your MAIN job (this could be paid work, unpaid work, caring etc – whatever you spend most of your "working day" doing).**
On a usual working day, how often do you do each of the following while you are at work?
(Mark one on each line)

		All of the time	Most of the time	Some of the time	A little of the time	None of the time
a	Sitting	☐	☐	☐	☐	☐
b	Standing	☐	☐	☐	☐	☐
c	Walking	☐	☐	☐	☐	☐
d	Heavy labour or physically demanding work	☐	☐	☐	☐	☐

Q83 **In a USUAL WEEK, how much time in total do you spend doing the following things?**
(Mark one on each line)

		I don't do this activity	1-15 hours	16-24 hours	25-34 hours	35-40 hours	41-48 hours	49 hours or more
a	Full time paid work	☐	☐	☐	☐	☐	☐	☐
b	Part-time paid work	☐	☐	☐	☐	☐	☐	☐
c	Casual paid work	☐	☐	☐	☐	☐	☐	☐
d	Home duties *(own / family home)*	☐	☐	☐	☐	☐	☐	☐
e	Work without pay *(eg family business)*	☐	☐	☐	☐	☐	☐	☐
f	Looking for work	☐	☐	☐	☐	☐	☐	☐
g	Unpaid voluntary work	☐	☐	☐	☐	☐	☐	☐
h	Active leisure *(eg walking, exercise, sport)*	☐	☐	☐	☐	☐	☐	☐
i	Passive leisure *(eg TV, music, reading, relaxing)*	☐	☐	☐	☐	☐	☐	☐
j	Studying	☐	☐	☐	☐	☐	☐	☐

Q84 **Managing time is often difficult. How often do you feel:**
(Mark one on each line)

		Every day	A few times a week	About once a week	About once a month	Never
a	That you are rushed, pressured, too busy?	☐	☐	☐	☐	☐
b	That you have time on your hands that you don't know what to do with?	☐	☐	☐	☐	☐

Q85 **Are you happy with your share of the following tasks and activities?**
(Mark one on each line)

		Happy the way it is	Would like other household members to do more	Would prefer another arrangement	Not applicable (don't do this)
a	Domestic work *(shopping, cooking, cleaning etc)*	☐	☐	☐	☐
b	Childcare	☐	☐	☐	☐
c	Caring for another adult *(who is elderly / disabled / sick)*	☐	☐	☐	☐
d	Other household work *(gardening, home / car maintenance)*	☐	☐	☐	☐

Q86 **Do you regularly provide (unpaid) care for grandchildren or other people's children?**
(Mark one only)

- Yes, daily ☐
- Yes, weekly ☐
- Yes, occasionally ☐
- No, never ☐

Q87 **Do you regularly provide care or assistance *(eg personal care, transport)* to any other person because of their long-term illness, disability or frailty?**
(Mark one on each line)

		Yes	No	
a	For someone who lives with you	☐	☐	If No to both, go to Q91
b	For someone who lives elsewhere	☐	☐	

Q88 **How many people with a long-term illness, disability or frailty do you regularly provide care for?**
(Mark one only)

- One person ☐
- Two people ☐
- More than two people ☐

Q89 **How often in total do you provide this care or assistance?**
(Mark one only)

- Every day ☐
- Several times a week ☐
- Once a week ☐
- Once every few weeks ☐
- Less often ☐

Q90 **How much time do you usually spend providing such care or assistance on each occasion?**
(Mark one only)

- All day and night ☐
- All day ☐
- All night ☐
- Several hours ☐
- About an hour ☐

Q91 **Do you normally do any of the following kinds of paid work?**
(Mark all that apply)

		Yes
a	Paid shift work	☐
b	Paid work at night	☐
c	Paid work from home	☐
d	Self employment	☐
e	Paid work in more than one job	☐
f	Casual paid work	☐
g	Paid work involving none of the above	☐
h	I don't do any paid work	☐

Q92 **We would like to know YOUR and YOUR PARTNER'S main occupation NOW:**
(Mark one in each column)

	A self	B partner
Manager or administrator *(eg magistrate, farm manager, media producer, school principal)*	☐	☐
Professional *(eg registered nurse, allied health professional, teacher, artist)*	☐	☐
Associate professional *(eg office manager, branch manager, shop manager, retail buyer, youth worker, police officer)*	☐	☐
Tradesperson or related worker *(eg cook, dressmaker, hairdresser, gardener, florist)*	☐	☐
Advanced clerical or service worker *(eg credit officer, radio despatcher, personal assistant, flight attendant, law clerk)*	☐	☐
Intermediate clerical, sales or service worker *(eg accounts clerk, checkout supervisor, data entry operator, child care worker, nursing assistant, hospitality worker)*	☐	☐
Intermediate production or transport worker *(eg machine operator, bus driver)*	☐	☐
Elementary clerical, sales or service worker *(eg filing / mail clerk, parking inspector, sales assistant, telemarketer, housekeeper)*	☐	☐
Labourer or related worker *(eg cleaner, factory worker, kitchen hand, fast food cook)*	☐	☐
No paid job	☐	☐
Don't know or no partner		☐

Q93 **How do you manage on the income you have available?**
(Mark one only)

- It is impossible ☐
- It is difficult all the time ☐
- It is difficult some of the time ☐
- It is not too bad ☐
- It is easy ☐

Q94 **Are there people who do NOT live with you who are dependent on your household income?**
(Mark one only)

- No ☐
- Yes, one ☐
- Yes, more than one ☐

Q95 **Women's employment patterns have changed a lot over recent years. We are keen to learn how women see retirement in their own lives. Please indicate the following description that best fits your life now. If you want to add more please write this in on page 30.**
(Mark one only)

- I am not retired at all ☐
- I am partially retired ☐
- I am completely retired from paid work ☐
- I gave up paid work over 20 years ago ☐
- I have never been in paid work ☐

Q96 **When did you retire or give up work completely?**

(Print year in the box) ☐☐☐☐ Not applicable ☐

Q97 **At what age do you expect to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q98 **You have said when you expect to retire, but if you had the choice, at what age would you like to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q99a **What are your CURRENT sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q99b **When you are OVER 65 what will be your sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q100 **Have you begun to think about your life in retirement? In particular, have you made any plans for the following aspects of your life?**
(Mark one on each line)

		Not at all	Thought about it	Made some plans	Have firm plans
a	To be socially active with friends or family or the community	☐	☐	☐	☐
b	To be mentally active *(eg join a group, do word or number puzzles)*	☐	☐	☐	☐
c	To be physically active	☐	☐	☐	☐
d	To be financially secure	☐	☐	☐	☐
e	To be in some kind of paid, unpaid or voluntary work	☐	☐	☐	☐
f	To be in housing that meets your needs	☐	☐	☐	☐

Q101 **When you are 65 how do you expect to manage on your available income?**
(Mark one only)

It will be impossible	☐
It will be difficult all of the time	☐
It will be difficult some of the time	☐
It will be not too bad	☐
It will be easy	☐

Q102 **These questions are about getting on with other people:**
(Mark one on each line)

		Yes	No
a	Are you sad or lonely often?	☐	☐
b	Do you feel uncomfortable with anyone in your family?	☐	☐
c	Can you take your own medication and get around by yourself?	☐	☐
d	Do you feel that nobody wants you around?	☐	☐
e	Does someone in your family make you stay in bed or tell you you're sick when you know you are not?	☐	☐
f	Has anyone forced you to do things you didn't want to do?	☐	☐
g	Has anyone taken things that belong to you without your OK?	☐	☐
h	Do you trust most of the people in your family?	☐	☐
i	Do you have enough privacy at home?	☐	☐
j	Has anyone close to you tried to hurt or harm you recently?	☐	☐
k	Has anyone close to you called you names or put you down or made you feel bad recently?	☐	☐
l	Are you afraid of anyone in your family?	☐	☐
m	Does anyone in your family drink a lot of alcohol?	☐	☐
n	Have you ever been in a violent relationship with a partner / spouse?	☐	☐

Q103 **What is your present marital status?** *(Mark one only)*

- Married *(registered)* ☐
- De facto relationship *(opposite sex)* ☐
- De facto relationship *(same sex)* ☐
- Separated ☐
- Divorced ☐
- Widowed ☐
- Never married ☐

Q104 **How many people live with you now?** *(Mark all that apply)*

a No one, I live alone ☐

		One	Two	Three or more
b	Partner or spouse	☐	☐	☐
c	Children under 16 years	☐	☐	☐
d	Children 16-18 years	☐	☐	☐
e	Children over 18 years	☐	☐	☐
f	Your parents or in-laws	☐	☐	☐
g	Other adult relatives	☐	☐	☐
h	Other adults *(not family members)*	☐	☐	☐

Q105 **People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it?**
(Mark one on each line)

		None of the time	A little of the time	Some of the time	Most of the time	All of the time
a	Someone to help you if you are confined to bed	☐	☐	☐	☐	☐
b	Someone you can count on to listen to you when you need to talk	☐	☐	☐	☐	☐
c	Someone to give you good advice about a crisis	☐	☐	☐	☐	☐
d	Someone to take you to the doctor if you need it	☐	☐	☐	☐	☐
e	Someone who shows you love and affection	☐	☐	☐	☐	☐
f	Someone to have a good time with	☐	☐	☐	☐	☐
g	Someone to give you information to help you understand a situation	☐	☐	☐	☐	☐
h	Someone to confide in or talk to about yourself or your problems	☐	☐	☐	☐	☐
i	Someone who hugs you	☐	☐	☐	☐	☐
j	Someone to get together with for relaxation	☐	☐	☐	☐	☐
k	Someone to prepare your meals if you are unable to do it yourself	☐	☐	☐	☐	☐
l	Someone whose advice you really want	☐	☐	☐	☐	☐
m	Someone to do things with to help you get your mind off things	☐	☐	☐	☐	☐
n	Someone to help with daily chores if you are sick	☐	☐	☐	☐	☐
o	Someone to share your most private worries and fears with	☐	☐	☐	☐	☐
p	Someone to turn to for suggestions about how to deal with a personal problem	☐	☐	☐	☐	☐
q	Someone to do something enjoyable with	☐	☐	☐	☐	☐
r	Someone who understands your problems	☐	☐	☐	☐	☐
s	Someone to love and make you feel wanted	☐	☐	☐	☐	☐

Q106 **In general, are you satisfied with what you have achieved in your life so far in the areas of:**
(Mark one on each line)

		Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
a	Work	☐	☐	☐	☐
b	Career	☐	☐	☐	☐
c	Study	☐	☐	☐	☐
d	Family relationships	☐	☐	☐	☐
e	Partner / closest personal relationship	☐	☐	☐	☐
f	Friendships	☐	☐	☐	☐
g	Social activities	☐	☐	☐	☐

Q107 **What is your date of birth?**

Day Month 19 Year

Q108 **Did someone help you fill in this survey?** *(Mark one only)*

- No ☐
- Yes, but I told them the answers I wanted ☐
- Yes, but the helper answered for me using his / her own judgement ☐

Q109 **What was the MAIN reason for your needing help to fill in this survey?** *(Please describe)*

Have we missed anything?

If there is ANYTHING else you would like to tell us about changes in your health (especially in the last three years) please write on the lines below.

Consent

I agree to the research team following health and other records relating to me, including hospital and health service use records and cancer registers and other chronic conditions registers as described to me in the accompanying brochure. I also understand this means I agree to Medicare releasing information concerning services provided to me under Medicare, the Department of Veterans' Affairs, the Pharmaceutical Benefits Scheme and the Repatriation Pharmaceutical Benefits Scheme, including past information, for the duration of the study, as outlined in the enclosed brochure. *(Mark one only)*

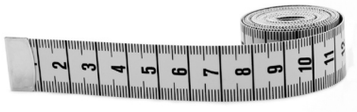
Yes → ☐ **No →** ☐

Please sign below and send the completed survey back to us in the envelope supplied as soon as possible. We will detach the consent form and store it in a separate locked room.

I consent to the researchers 'matching' the information provided in this survey with that given in previous surveys so that any change in my health can be noted.

Signature **Date** / /

What is your Maiden Name? (Please print in the boxes)



Have you remembered to measure your waist?
Page 17 Question 56.

Help us keep in touch

Sometimes we lose touch with our participants. It would be helpful if you could give us your mobile phone number and email address.

Mobile

Email

It would be helpful also, if you could give us details of **parents, a relative or friend** who will be able to help us find you, after checking that the relative or friend is happy for you to provide these details.

Name

Address

Town / Suburb State Postcode

Phone ( )

Relationship to you

perf

Thank you for taking the time to complete this survey.

If you have any questions you can contact us by telephoning
1800 068 081 ***(freecall).***

Don't forget to sign the consent and post this back to us!

women's health australia

Sixth survey for the women of the 1946-1951 cohort 2009

Australian Longitudinal Study on Women's Health

The University of Newcastle, Callaghan NSW 2308.
Phone: 02 4913 8872 Fax: 02 4913 8888
Email: whasec@newcastle.edu.au
Web: www.alswh.org.au

women's health australia

As previously explained, you are one of our pilot group.
As well as completing the survey, we would like to know what you think of it.
We may make changes before sending it to others in your age group in 2010.
Please help by answering the questions below.

1. Were there any questions you found difficult to understand?

Yes ☐
No ☐

If Yes, which questions were they and why?

2. Were there any questions you didn't want to answer?

Yes ☐
No ☐

If Yes, which questions were they and why?

3. Were there any questions you found too personal or not relevant?

Yes ☐
No ☐

If Yes, which questions were they and why?

4. Would you be willing to complete the survey online (on the internet) in the future?

Yes ☐
No ☐

Please turn over ➔

5. Did you find the information brochure helpful?

Yes ☐
No ☐

What did you find helpful / not helpful?

6. Was there any information you felt was missing in the brochure?

Yes ☐
No ☐

If Yes, what sort of information and why?

7. Were you concerned by any information in the information brochure?

Yes ☐
No ☐

If Yes, what information and why?

8. How long did it take you to complete this survey? ☐☐ Mins

9. How would you rate the survey length?

Too short ☐
Just right ☐
Too long ☐

10. Do you have any other comments about the survey wording, layout or anything else?

Your feedback will help us improve the survey.
Thank you for taking the time to complete this evaluation sheet.

You are a unique and irreplaceable participant in the Women's Health Australia project.

We recently sent you a survey but have not heard back from you.

If you don't have a survey please contact us:

Freecall 1800 068 081

Email whasec@newcastle.edu.au

women's health australia

Did you know that...

73% of women your age say they are happy with their share of domestic work

20% of women in your age group use the internet to find information about lifestyle changes

50% of women your age rate their health as either excellent or very good

Freecall number 1800 068 081

Email whasec@newcastle.edu.au

Website www.alswh.org.au

Address Reply Paid 70,
Hunter Region MC
NSW 2310

Thank you

We have received your completed survey.

Congratulations on your ongoing commitment to the Women's Health Australia project. With your help we have provided accurate information to the government about the health needs of women across Australia.

women's health australia

Did you know that...

76% of women in your age group take vitamins or minerals

43% of women your age rate their number of GPs to choose from as either excellent or very good

27% of women in your age group do unpaid voluntary work

Freecall number 1800 068 081

Email whasec@newcastle.edu.au

Website www.alswh.org.au

Address Reply Paid 70,
Hunter Region MC
NSW 2310

women's health
australia

No stamp required
if posted in Australia

Women's Health Australia
Reply Paid 70
HUNTER REGION MC NSW 2310

HAVE YOUR DETAILS CHANGED?

If you have changed your name, address or telephone number, please advise us of your new details by calling FREECALL 1800 068 081 or by completing and returning this card.

New Title_____First Name_____Middle Name(s)_____

(if changed)

Surname_____Previous Surname_____

(if changed)

Address_____

Suburb_____State_____Postcode_____

Ph(home) (__ __) __ __ __ __ __ __ __ __ Ph(work) (__ __) __ __ __ __ __ __ __ __

Ph(mobile) __ __ __ __ __ __ __ __ __ __

Email_____

ID Number __ __ __ – __ __ __ __ __ – __

Please keep this card in a safe place until you need to contact us.

Your ID number is located on the survey and letter.

www.alswh.org.au

women's health australia

December 2009