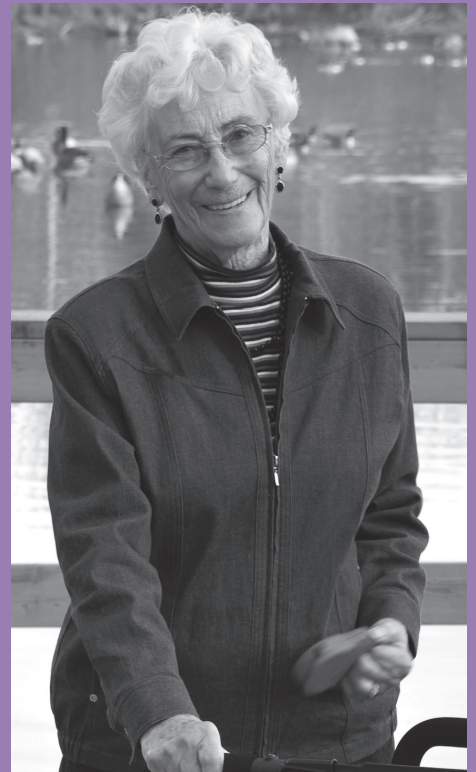


# women's health *a u s t r a l i a*



the australian longitudinal  
study on women's health



## Annual Report **2010**



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# DIRECTOR'S REPORT

In December 2010, the Australian Department of Health & Ageing released the new National Women's Health Policy, the first revision since 1989. This was the end result of an extensive process including public consultations and formal submissions. Papers, reports, and a formal submission from the Australian Longitudinal Study on Women's Health formed a substantial part of the evidence base for this policy. Detailed reliance of the Policy on the Study findings, including more than 10% of the references, shows its importance to governments.

The first chapter of the Policy provides an overview: 'The 1989 policy also resulted in the establishment of the Australian Longitudinal Study on Women's Health. The study is a landmark longitudinal population-based survey over a 20-year period that examines the health of more than 40,000 women. The Australian Longitudinal Study on Women's Health provides valuable information on women's health and wellbeing across three generations. It examines most aspects of life, including physical health, relationships, reproductive health, body weight, emotional and mental health, paid work and retirement, ageing and caring roles. Participants have been surveyed at least four times over the past 12 years and the results of the surveys are widely used by government and academics. The Australian Longitudinal Study on Women's Health data have been analysed for reports on topics such

as reproductive health, women's health and ageing and an upcoming report on the health of women in rural and remote Australia. Further reports are planned for release over the next two years.'

The Policy recommendations include a commitment to 'Continue building the evidence base through programs such as the Australian Women's Longitudinal Health Study and explore its capacity to further investigate aspects of women's health.'

In 2010 we surveyed for the sixth time women born in 1946-51. These women are now aged 59-64 and many are entering retirement. We also developed and pilot-tested the sixth survey for women born in 1921-26 who are now aged 84-89 years.

An important achievement this year has been the release of a comprehensive report on the reproductive health of Australian women. The longitudinal data provided by the Study show changes in childbearing, contraception, fertility and infertility, maternal health (including postnatal depression) and mother's workplace participation over the ten year period 1996-2006.

We have continued to work on data quality and documentation, and to produce scientific papers and conference presentations on all aspects of women's

health. In addition to the main survey, work has been conducted on a number of additional projects covering topics including the health of spouse carers of World War II veterans, postnatal depression, and use of complementary and alternative medicine.

Many thanks to the Australian Government Department of Health and Ageing for their continuing support of this study. I would particularly like to thank the many women who are giving their time over many years to participate in this research and contribute to improving the health of future Australians.

*Annette Dobson*

Annette Dobson  
Study Director



# RESEARCH STEERING COMMITTEE

## Professor Annette Dobson



BSc, MSc, GCert Mngt, PhD, AStat

Director, Australian Longitudinal Study on Women's Health

School of Population Health

University of Queensland

## Professor Wendy Brown



BSc(Hons), DipEd, MSc, PhD

School of Human Movement Studies

University of Queensland

## Professor Christina Lee



BA, PhD, FAPS

School of Psychology

University of Queensland

## A/Professor Jayne Lucke



BA(Hons), PhD

Addiction Neuroethics, UQ Centre for Clinical Research

University of Queensland

## Dr Deborah Loxton



BPsych(Hons), Dip Mgt, PhD

Deputy Director, Australian Longitudinal Study on Women's Health

Research Centre for Gender, Health & Ageing

University of Newcastle

## Professor Julie Byles



BMed, PhD

Co-Director, Australian Longitudinal Study on Women's Health

Director, Research Centre for Gender, Health & Ageing  
University of Newcastle

## Professor Gita Mishra



BSc, MSc, PhD

School of Population Health  
University of Queensland

## A/Professor Nancy Pachana



AB, MA, PhD

School of Psychology  
University of Queensland

## A/Professor David Sibbritt



BMath, MMedStat, PhD

School of Medicine and Public Health  
University of Newcastle

## Dr Leigh Tooth



BOccThy(Hons), PhD

Project Co-Ordinator, Australian Longitudinal Study on Women's Health

School of Population Health  
University of Queensland



# COLLABORATORS & INVESTIGATORS

This list includes the first named investigator or collaborator from all currently active projects as recorded through the ALSWH Expression of Interest process.

For more information please see [www.alsw.org.au](http://www.alsw.org.au).

## A/Professor Jon Adams

School of Population Health, University of Queensland

## Professor Kaarin Anstey

Centre for Mental Health Research, Australian National University

## Professor Marie-Paule Austin

St John of God Health Care & School of Psychiatry, Perinatal & Women's Mental Health, University of New South Wales

## Dr Alexander Broom

Discipline of Behavioural & Social Sciences in Health, University of Sydney

## Dr Nicola Burton

School of Human Movement Studies, University of Queensland

## A/Professor Pauline Chiarelli

School of Health Sciences (Physiotherapy), University of Newcastle

## Catherine Chojenta

Research Centre for Gender, Health & Ageing, University of Newcastle

## A/Professor Lindy Clemson

Faculty of Health Sciences, University of Sydney

## A/Professor Clare Collins

School of Health Sciences (Nutrition & Dietetics), University of Newcastle

## Xenia Dolja-Gore

Research Centre for Gender, Health & Ageing, University of Newcastle

## A/Professor Alison Ferguson

School of Humanities & Social Sciences, University of Newcastle

## Peta Forder

Research Centre for Gender, Health & Ageing, University of Newcastle

## Dr Coral Gartner

School of Population Health, University of Queensland

## Richard Gibson

Research Centre for Gender, Health & Ageing, University of Newcastle

## Dr Katharina Hauck

Centre for Health Economics, Monash University

## Dr Kristi Heesch

School of Human Movement Studies, University of Queensland

## Danielle Herbert

School of Population Health, University of Queensland

## Dr Melissa Johnstone

School of Psychology, University of Queensland

## A/Professor Jonathan Karnon

School of Population Health & Clinical Practice, University of Adelaide

## Dr Christine Lu

Sansom Institute, University of South Australia

## Dr Deirdre McLaughlin

School of Population Health, University of Queensland



**Mark McEvoy**

School of Medicine & Public Health, University of Newcastle

**Sharon Matthews**

Turning Point Alcohol & Drug Centre, Melbourne

**Dr Nawi Ng**

Research Centre for Gender, Health & Ageing, University of Newcastle

**A/Professor Lynne Parkinson**

Research Centre for Gender, Health & Ageing, University of Newcastle

**Dr Geeske Peeters**

School of Human Movement, University of Queensland

**Dr Sabrina Pit**

School of Public Health, Department of Rural Health, University of Sydney

**Jennifer Powers**

Research Centre for Gender, Health & Ageing, University of Newcastle

**Professor Sue Richardson**

National Institute of Labour Studies, Flinders University

**Dr Jane Robertson**

School of Medicine & Public Health, University of Newcastle

**Dr Ingrid Rowlands**

Gynaecological Cancers Group, Queensland Institute of Medical Research

**Professor Margot Schofield**

School of Public Health, La Trobe University

**Dr Efty Stavrou**

Clinical & Population Perinatal Health Research, Kolling Institute of Medical Research, University of Sydney

**Dr Jennifer Stewart Williams**

Research Centre for Gender Health & Ageing, University of Newcastle

**Dr Angela Taft**

Mother & Children's Health Research, La Trobe University

**Professor Nicholas Talley**

Faculty of Health, University of Newcastle

**Dr Meredith Taverer**

Faculty of Spatial Sciences, University of Groningen

**Dr Ann Taylor**

School of Social Sciences, University of Newcastle

**Professor Helena Teede**

Jean Hailes Research Group, Monash University

**Lany Trinh**

Cardiovascular, Diabetes & Kidney Unit, Australian Institute of Health and Welfare

**Dr Mireille van Poppel**

Department of Public & Occupational Health, Free University Amsterdam

**Dr Jannique van Uffelen**

School of Human Movement Studies, University of Queensland

**Professor Theo Vos**

Centre for Burden of Disease and Cost-effectiveness, University of Queensland

**Professor Tracey Wade**

School of Psychology, Flinders University

**Dr Lyndsey Watson**

Mother & Child Health Research, La Trobe University

**Professor Philip Weinstein**

School of Population Health, University of Queensland

**Dr Lauren Williams**

School of Health Sciences, University of Newcastle

# CURRENT STUDENTS

## PhD Students

### Amy Anderson

University of Newcastle  
Supervisor: Dr Deborah Loxton &  
Dr Frances Kay-Lambkin

### Nicole Au

Monash University  
Supervisors: Dr Katharina Hauck &  
A/Professor Bruce Hollingsworth

### Michelle Blumfield

University of Newcastle  
Supervisors: A/Professor Clare  
Collins, Dr Alexis Hure &  
Dr Lesley MacDonald-Wicks

### Steven Bowe

University of Newcastle  
Supervisors: A/Professor David  
Sibbritt, Dr Patrick McElduff &  
A/Professor Anne Young

### Catherine Chojenta

University of Newcastle  
Supervisors: Dr Deborah Loxton &  
A/Professor Jayne Lucke

### Sue Conrad

University of Queensland  
Supervisors: Dr Leigh Tooth,  
Professor Annette Dobson &  
A/Professor Fran Boyle

### Elizabeth Crowe

University of Queensland  
Professor Steve Kisely,  
Professor Annette Dobson &  
A/Professor David Whiteman

### Joanne Flavel

Flinders University  
Supervisor: Professor Sue  
Richardson

### Leanne Fray

University of Newcastle  
Supervisors: Dr Penny Warner-Smith  
& Dr Kevin Lyons

### Kees van Gool

University of Technology Sydney  
Supervisors: A/Professor Elizabeth  
Savage & A/Professor Rosalie Viney

### Anju Joham

Monash University  
Supervisor: Professor Helena Teede

### Melissa Harris

University of Newcastle  
Supervisors: Dr Deborah Loxton,  
A/Professor David Sibbritt &  
Professor Julie Byles

### Danielle Herbert

University of Queensland  
Supervisors: A/Professor Jayne  
Lucke & Professor Annette Dobson

### Dr Jeannine Liddle

University of Newcastle  
Supervisors: A/Professor Lynne  
Parkinson, Professor Patrick Fuery &  
A/Professor David Sibbritt

### Rosie Mooney

University of Newcastle  
Supervisors: Dr Penny Warner-Smith  
& Dr Ann Taylor

### Jane Rich

University of Newcastle  
Dr Deborah Loxton & Dr Sarah  
Wright

## Masters Students

### Nazim Khan

University of Queensland  
Supervisor: Professor Annette  
Dobson

### Nicole Rutter

Charles Sturt University  
Supervisor: A/Professor Graham  
Tyson

## Honours Students

### Kristine Pezdirc

University of Newcastle  
Supervisor: A/Professor Clare Collins

## Undergraduate Students

### Georgina Ramsay

University of Newcastle  
Supervisor: Dr Ann Taylor

# CONGRATULATIONS TO OUR SUCCESSFUL GRADUATES FOR 2010

Beverley Lloyd, PhD

University of Melbourne

Supervisors: Associate Professor Susan  
Quine & Professor Christina Lee

*Mothers, work and mental health:  
Epidemiological and women's perspectives*

Heather McKay, PhD

University of Melbourne

Supervisor: A/Professor Jane Fisher

*Childlessness in Australian women: By  
choice?*

Meredith Tavener, PhD

University of Newcastle

Supervisors: Professor Julie Byles ,  
Dr Penny Warner Smith &  
Dr Deborah Loxton

*Your bloomin' lot: An empirical study of the  
popular baby boomer stereotype*



# PROJECT STAFF

University of Queensland

## **Project Director**

Professor Annette Dobson

## **Senior Research Fellow/Project Coordinator**

Dr Leigh Tooth

## **Data Manager - Surveys**

Mr David Fitzgerald

## **Research Project Manager**

Ms Megan Ferguson

## **Research Statistician**

Mr Richard Hockey

## **Research Assistants**

Ms Danielle Herbert

Ms Janni Leung

## **Administrative Officer**

Ms Leonie Gemmell





## University of Newcastle



### **Co-Director ALSWH/RCGHA Director**

Professor Julie Byles

### **Deputy Director**

Dr Deborah Loxton

### **Statisticians**

Ms Jenny Powers

Ms Xenia Dolja-Gore

### **Operations Manager**

Mrs Anna Graves

### **Data Assistant**

Mr Ryan Tuckerman

### **Communications and Research Officer**

Mrs Catherine Chojenta

### **Research Assistants**

Ms Jenny Helman

Ms Jane Rich

Ms Ashleigh O'Mara

### **Administrative Officer**

Ms Melanie Moonen

### **Casual Project Assistants**

Ms Alice Burgess

Ms Laura Croger

Ms Nicola Evans

Ms Claire Rooney

Ms Megan Wilson

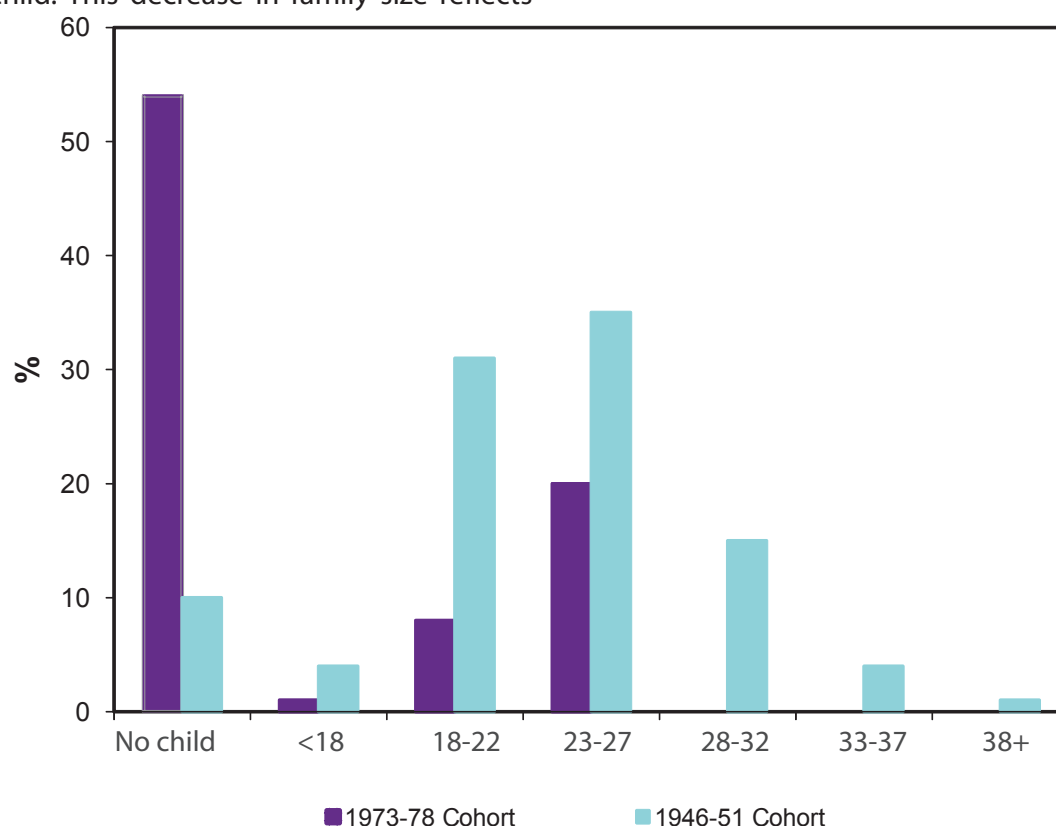
# REPRODUCTIVE HEALTH: FINDINGS FROM THE AUSTRALIAN LONGITUDINAL STUDY ON WOMEN'S HEALTH

In 2010 the Department of Health and Ageing released our report on women's reproductive health. Capitalising on the longitudinal design of ALSWH, the report particularly focuses on women of childbearing age (those born 1973-78 who were aged 18-23 in 1996 and 28-33 in 2006) and tracks changes in childbearing, contraception, fertility and infertility, maternal health (including postnatal depression) and mother's workplace participation over the period 1996-2006.

## Changes in childbearing

There are clear generational differences in childbearing. Family sizes have decreased – older women (in the cohort born 1921-1926) were more likely to have four or more children than mid-aged women (in the cohort born 1946-1951), who were more likely to have two or three children. In 1996 the youngest women (in the cohort born 1973-1978) aspired to have two children, but over time an increasing proportion changed their aspirations to only one child. This decrease in family size reflects

the ages when women had their first child. About half of the 1946-1951 cohort had their first child before 24 years of age, compared with less than 20% of the 1973-1978 cohort. In 2006, when they were aged between 28 and 33 years, almost 60% of women in the 1973-1978 cohort had not had children.



**Figure 1** Age at which women in the 1973-1978 and 1946-1951 cohorts first gave birth  
(Note: data incomplete for the 1973-1978 cohort from age 28 onwards).

## Use of contraception

The availability of a wide range of contraceptive choices has played a key role in current patterns of childbearing. Among the 1973-1978 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 over this period were more likely to be in de facto relationships or

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 impact on how women manage their fertility as they complete their families. For example, 3% of women were using an implant (e.g. Implanon) at Survey 3, and one third of these women continued using an implant three years later at Survey 4. 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.

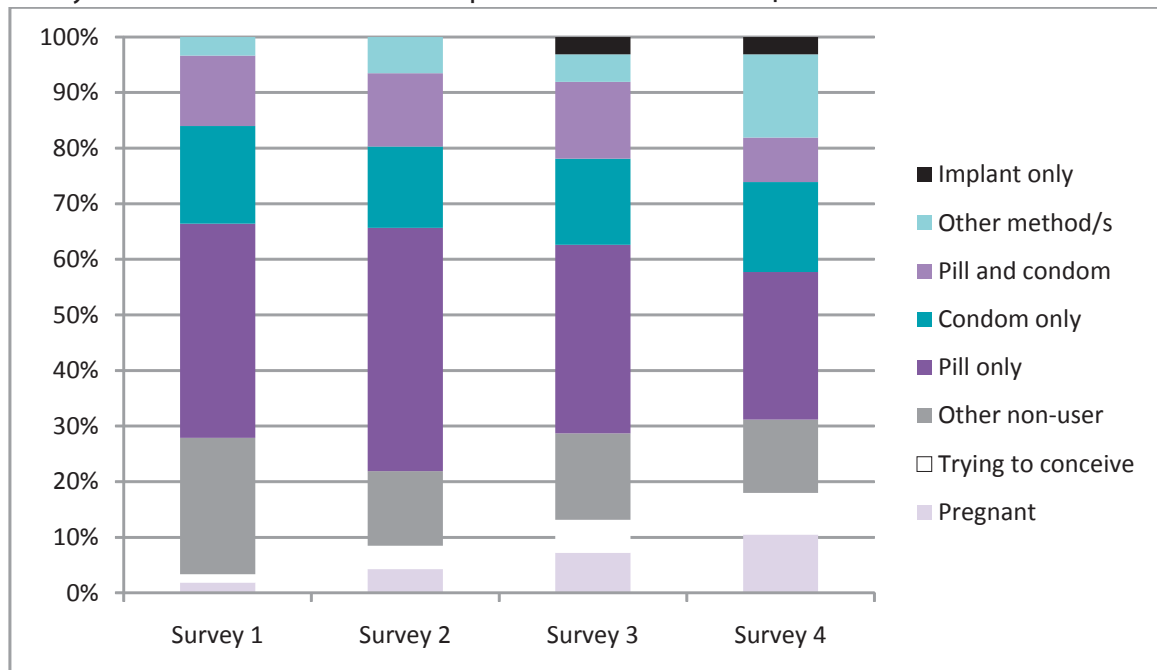


Figure 2 Contraceptive use at each survey

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 1973-1978 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. Condoms were the next most common single method used; 15-18% of women used condoms only, although only 3% used condoms consistently across time. Condoms and the oral contraceptive pill were used by around 14% of all women from Survey 1 to 3 (ages 18-30) but this decreased to 8% of all women at Survey 4 (ages 28-33), when the use of other methods 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





## Aspirations

The majority of the 1973-1978 cohort want children, with the most popular aspiration at all 4 surveys being for two children, followed by three or more children. 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 two or more children started to decline.

Changes in aspirations were dependent on circumstances. Approximately two-thirds of women 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; childless women dramatically reduced 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.

Half of the women 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 related to fertility and infertility will increase. By Survey 4, one in six had already had a problem with infertility.

## 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. Reproductive history is an important factor in understanding fertility issues.



Pregnancy losses (miscarriage or termination) are common - half of the women who had ever been pregnant up to Survey 4 had experienced a pregnancy loss. For every ten women aged 28-33 years in 2006: four had not been pregnant; five had a live birth (with or without a recognised pregnancy loss); and one had had a recognised pregnancy loss only.

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 infertility, seeking advice and using treatment were: polycystic ovary syndrome, endometriosis and miscarriage. Of the women who reported infertility, two-thirds sought advice but only half used treatment. 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.

## Prenatal and maternal health behaviour

**Diet:** ALSWH research has found that while women make alterations to their diets while pregnant, many fail to meet important nutrient recommendations such as those for folate, iron and iodine intake during pregnancy. Thus it is important to continue to stress the recommended levels of nutrients during pregnancy and the post-partum period.

**Medications:** Analyses of linked ALSWH and Pharmaceutical Benefits Scheme (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 their pregnancy. Nevertheless, 17% of women who had children in 2005 (and consented for their survey data to be linked with PBS data) had claims for prescription medication while pregnant. The most commonly claimed medications during pregnancy were antidepressants, with 4% of women pregnant in 2005 continuing the use of antidepressants during pregnancy. However, claims made during pregnancy for medications that are known or suspected of harming fetal development were very rare.

**Tobacco and alcohol use:** Tobacco and alcohol are known to harm fetal development when used in sufficient quantities. Of women in the 1973-78 cohort 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. 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, during pregnancy healthy behaviours generally increased and potentially harmful behaviours decreased. However, a substantial number of women maintained risky behaviours during pregnancy. This indicates an ongoing need for effective public health interventions that promote healthy behaviours before and during pregnancy.

## Maternal health

Women's health after birth is as important as their health during pregnancy. Data from Survey 4 of the 1973-78 cohort (when the women were aged 28-33)



show 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, as well as women who did not have children. This indicates 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 had higher incidence of some symptoms such as incontinence and severe tiredness. Around 10% of 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 reported 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 postnatal depression, especially those who had limited affectionate support and positive social interactions.

## Motherhood and paid work

Involvement in the workforce may influence the health and wellbeing of mothers. From 1996 to 2006, of women in the 1973-1978 cohort, 23 % have alternated between full-time and part-time employment, while 63% reported not being in the labour force at least once across the four surveys during this period (Figure 3).

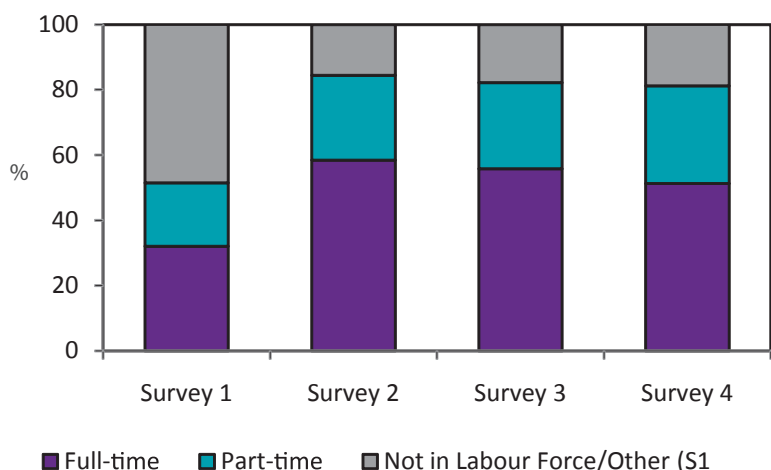


Figure 3 Employment patterns of the 1973-1978 cohort for Surveys 1, 2, 3 and 4

women with university qualifications, while taking no maternity leave was more common among women who had other children.

The ALSWH data demonstrate the importance of viewing maternity leave in the 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 before pregnancy, time since the birth of their last child and the 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 other factors. 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 before pregnancy and time since the birth of the last child. The ALSWH will be well place to evaluate the effects of the new government policy on parental leave.

Compared with women with no children, women having a first birth were likely to change from full-time to part-time employment, or to change from full-time or part-time employment to not being in the labour force. Employment status before the birth of the first child appears to influence subsequent employment - more women who worked full-time before their first birth remained in the labour force after the birth compared with women who worked part-time or who were not in the labour force (Figure 4).

The availability of maternity leave plays an important role in employment patterns. 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

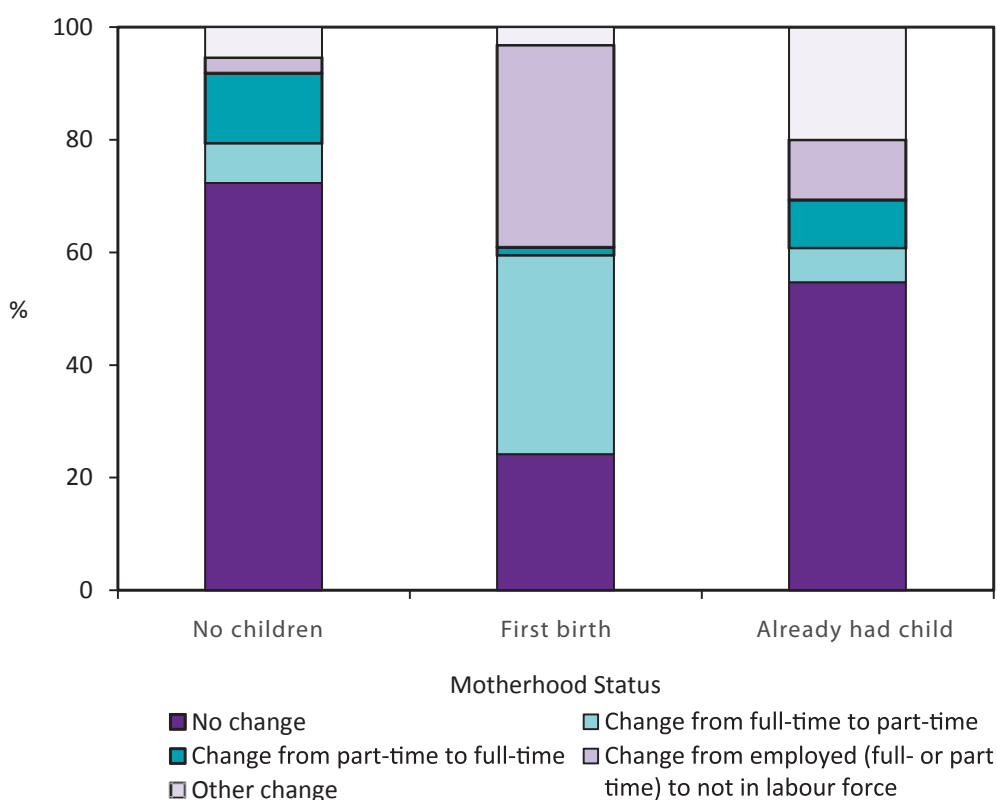


Figure 4 Employment according to motherhood status from Survey 3 to Survey 4

# PUBLICATIONS

## PUBLISHED PAPERS

Anstey K, Burns R, Birrell C, Steel D Kiely K & Luszcz M.

**Estimates of probable dementia prevalence from population-based surveys compared with dementia prevalence estimates based on meta analyses.**

*BMC Neurology*, 2010; 10(62): 1-12.

Background: National data on dementia prevalence are not always available, yet it may be possible to obtain estimates from large surveys that include dementia screening instruments. In Australia, many of the dementia prevalence estimates are based on European data collected between 15 and 50 years ago. We derived population-based estimates of probable dementia and possible cognitive impairment in Australian studies using the Mini-Mental State Examination (MMSE), and compared these to estimates of dementia prevalence from meta-analyses of European studies.

Methods: Data sources included a pooled dataset of Australian longitudinal studies (DYNOPTA), and two Australian Bureau of Statistics National Surveys of Mental Health and Wellbeing. National rates of probable dementia (MMSE < 24) and possible cognitive impairment (24-26) were estimated using combined sample weights.

Results: Estimates of probable dementia were higher in surveys than in meta-analyses for ages 65-84, but were similar at ages 85 and older. Surveys used weights to account for sample bias, but no adjustments were made in meta-analyses. Results from DYNOPTA and meta-analyses had a very similar pattern of increase with age. Contrary to trends from some meta-analyses, rates of probable dementia were not higher among women in the Australian surveys. Lower education was associated with higher prevalence of probable dementia. Data from investigator-led longitudinal studies designed to assess cognitive decline appeared more reliable than government health surveys.

Conclusions: This study shows that estimates of probable dementia based on MMSE in studies where cognitive decline and dementia are a focus, are a useful adjunct to clinical studies of dementia prevalence. Such information may be used to inform projections of dementia prevalence and the concomitant burden of disease.

Anstey K, Byles J, Luszcz M, Mitchell P, Steel D, Booth H, Browning C, Butterworth P, Cumming R, Healy J, Windsor T, Ross L, Bartsch L, Burns R, Kiely K, Birrell C, Broe G, Shaw J & Kendig H. **Cohort profile: The Dynamic Analyses to Optimize Ageing (DYNOPTA) project.** *International Journal of Epidemiology*, 2010; 39(1): 44-51.

No abstract available.

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*, 2010; 21(3): 479-485.

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.

**Brilleman S, Pachana N & Dobson A.**  
**The impact of attrition on the representativeness of cohort studies of older people.**

*BioMed Central Medical Research Methodology, 2010; 10 (71): 1-9.*

Background: There are well-established risk factors, such as lower education, for attrition of study participants. Consequently, the representativeness of the cohort in a longitudinal study may deteriorate over time. Death is a common form of attrition in cohort studies of older people. The aim of this paper is to examine the effects of death and other forms of attrition on risk factor prevalence in the study cohort and the target population over time.

Methods: Differential associations between a risk factor and death and non-death attrition are considered under various hypothetical conditions. Empirical data from the Australian Longitudinal Study on Women's Health (ALSWH) for participants born in 1921-26 are used to identify associations which occur in practice, and national crosssectional data from Australian Censuses and National Health Surveys are used to illustrate the evolution of bias over approximately ten years.

Results: 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 being underweight (body mass index < 18.5) was associated with death but not other forms of attrition. Compared to national data, underrepresentation of women with non-English speaking country of birth increased from 3.9% to 7.2% and over-representation of current and ex-smoking increased from 2.6% to 5.8%.

Conclusions: Deaths occur in both the target population and study cohort, while other forms of attrition occur only in the study cohort. Therefore non-death attrition may cause greater bias than death in longitudinal studies. However although more than a quarter of the oldest participants in the ALSWH died in the 12 years following recruitment, differences from the national population changed only slightly.

**Brown WJ, Hockey R & Dobson, AJ.**  
**Effects of having a baby on weight gain.**  
*American Journal of Preventive Medicine, 2010; 38(2): 163-170.*

Background: Women often blame weight gain in early adulthood on having a baby.

Purpose: The aim was 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.

Methods: A longitudinal study of a randomly selected cohort of 6458 Australian women, aged 18–23 years in 1996, was conducted. Self-report mailed surveys were completed in 1996, 2000, 2003, and 2006, and data were analyzed in 2008.

Results: On average, women gained weight at the rate of 0.93% per year (95% CI\_0.89, 0.98) or 605 g/year (95% CI\_580, 635) for a 65-kg woman. Over the 10-year study period, partnered women with one baby gained almost 4 kg more, and those with a partner but no baby gained 1.8 kg more, than unpartnered childless women (after adjustment for other significant factors: initial BMI and age; physical activity, sitting time, energy intake (2003); education level, hours in paid work, and smoking).

Conclusions: Having a baby has a marked effect on 10-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.

**De Cocker K, van Uffelen J & Brown W.**  
**Associations between sitting time and weight in young adult Australian women.**  
*Preventive Medicine, 2010; 51: 361-367.*

Objective: Sedentary behaviour may be a contributor to weight gain in today's young adult women, who are gaining weight faster than women in their mothers' generation. The aim was to examine the relationships between sitting time and weight in young women.

Method: Data were from women born in 1973–1978 who completed surveys in 2000, 2003 and 2006 for the Australian Longitudinal Study on Women's Health. Associations between concurrent changes in sitting time and weight, and prospective associations between these variables, were examined using ANOVA and linear regressions, stratified by BMI-category in 2000 (n=5562).

Results: Among overweight and obese women, percentage weight change from 2000 to 2006 was higher in those whose sitting time increased (N20%) than in those whose sitting time decreased (N20%) over the same period (pb0.05). Conversely, percentage change in sitting time was significantly higher in those who gained weight (N5%) than in those who lost weight (N5%) (pb0.05). There were no prospective

associations between (change in) sitting time and weight change, or between (change in) weight and change in sitting time.

**Conclusion:** The results confirm associations between concurrent changes in weight and changes in sitting time in overweight and obese women, but no prospective relationships were found.

**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*, 2010; 42(5): 1022-1028.

**Given** the social nature of participation in sport, we hypothesized that club sports participants would have greater well-being and quality of life than participants in other forms of physical activity (PA).

**Purpose:** The purpose of this study was to examine health-related quality of life and life satisfaction in women who participate in three contrasting forms of PA: club sport, gym activities, and walking.

**Methods:** This was a cross-sectional study of the relationship between type of PA setting and measures of health-related quality of life (Short-Form Health Survey [SF-36]) and life satisfaction in 818 women living in rural Victoria, Australia, in 2007. Data were also compared with those from a normative sample of 2345 women.

**Results:** After adjustment for potential confounders (age, education, marital status, children aged <16 yr, perceived financial stress, and level of recreational PA), four of the eight SF-36 subscales, the SF-36 mental health component summary score, and life satisfaction were significantly higher in the club sport group than that in the other groups.

**Conclusion:** Although cross sectional research cannot establish causal links, the results suggest that participation in club sport may enhance the health benefits

**Flicker L, McCaul KA, Hankey GJ, Jamrozik K, Brown W, Byles J & Almeida OP.**  
**Body mass index and mortality in men and women aged 70 to 75 years.**

*Journal of the American Geriatric Society*, 2010; 58: 234-241.

**Objectives:** To examine in an older population all-cause and cause-specific mortality associated with underweight (body mass index (BMI) <18.5), normal weight (BMI 18.5–24.9), overweight (BMI 25.0–29.9), and obesity (BMI ≥30.0).

**Design:** Cohort study.

**Setting:** The Health in Men Study and the Australian Longitudinal Study of Women's Health. **PARTICIPANTS:** Adults aged 70 to 75, 4,677 men and 4,563 women recruited in 1996 and followed for up to 10 years.

**Measurements:** Relative risk of all-cause mortality and cause-specific (cardiovascular disease, cancer, and chronic respiratory disease) mortality.

**Results:** Mortality risk was lowest for overweight participants. The risk of death for overweight participants was 13% less than for normal-weight participants (hazard ratio (HR) 0.87, 95% CI 0.78–0.94). The risk of death was similar for obese and normal-weight participants (HR 0.98, 95% CI 0.85–1.11). Being sedentary doubled the mortality risk for women across all levels of BMI (HR 2.08, 95% CI 1.79–2.41) but resulted in only a 28% greater risk for men (HR 1.28 (95% CI 1.14–1.44)).

**Conclusion:** These results lend further credence to claims that the BMI thresholds for overweight and obese are overly restrictive for older people. Overweight older people are not at greater mortality risk than those who are normal weight. Being sedentary was associated with a greater risk of mortality in women than in men.

**Herbert D, Lucke J & Dobson A.**  
**Early users of fertility treatment with hormones and IVF: women who live in major cities and have private health insurance.**

*Australian and New Zealand Journal of Public Health*, 2010; 34(6): 629-634.

**Objective:** To identify early users (women aged <34 years) of fertility treatment with hormones and in vitro fertilisation (IVF).

**Methods:** A cross-sectional survey of infertile women from fertility clinics (n=59) and from the community (Australian Longitudinal Study on Women's Health participants) who had (n=121) or had not (n=110) used hormones/IVF as treatment for infertility. Associations between socio-demographic, reproductive and lifestyle factors, medical conditions and recurrent symptoms and using treatment (or not) were analysed using multivariable logistic regression.

**Results:** Among infertile women who had used treatment (community vs clinic), women from clinics had lower odds of living outside major cities, using hormones only, i.e., not IVF, or recurrent headaches/migraines, severe tiredness, or stiff/painful joints; and higher odds of recent diagnoses of urinary tract infection or anxiety disorder. Compared to infertile women who had not used treatment, women from clinics had lower odds of living outside major cities, recurrent allergies or severe tiredness; and higher odds of having private health insurance for hospital or ancillary services, recent diagnosis of polycystic ovary syndrome or recurrent constipation.

**Conclusions:** Compared to infertile women in the community, living in major cities and having private health insurance are associated with early use of treatment for infertility at specialist clinics by women

aged <34 years.

Implications: These results provided evidence of inequity of services for infertile women.

Herbert D, Lucke J & Dobson A.  
**Depression: An emotional obstacle to seeking medical advice for infertility.**  
*Fertility and Sterility*, 2010; 94(5): 1817-21.

Objective: To investigate the mental and general health of infertile women who had not sought medical advice for their recognized infertility and were 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 ¼ 5,936).

Intervention(s): None.

Main Outcome Measure(s): Infertility, not seeking medical advice.

Result(s): Compared with fertile women (n ¼ 4,905), infertile women (n ¼ 1,031) had higher odds of self-reported depression (odds ratio [OR] 1.20, 95% confidence interval [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 ¼ 728), those who had not sought medical advice (n ¼ 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 have sought medical advice for infertility. Depression and depressive symptoms may be barriers to seeking medical advice for infertility.

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*, 2010; 12(2): 162-170.

Interpretation of changes in health and health care utilization patterns across the life span depends on an understanding of the effects of age, period, and cohort. The purpose of this article is to illustrate differences among three generations of women in

demographic factors, health risk factors, and health status indicators from 1996 to 2008. The article examines data from the Australian Longitudinal Study on Women's Health, a broad-ranging project funded by the Australian Government Department of Health and Ageing (DoHA) and involving three age groups of women (born in the periods 1973–1978, 1946–1951, and 1921–1926) who were first surveyed in 1996 and will be surveyed every 3 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, and body mass index [BMI]), and health status indicators (asthma, hypertension, diabetes and depression; physical functioning and mental health scores from the SF-36) were examined 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 that will meet the needs of different generations of women across their life span.

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*, 2010; 42(6): 1094-1102.

Purpose: Although independent relationships between sitting behaviors (mainly television viewing) and health outcomes have been reported, few studies have examined the measurement properties of self-report sitting questions. This study assessed gender-specific test–retest reliability and validity of a questionnaire that assessed time spent sitting on weekdays and weekend days: 1) traveling to and from places, 2) at work, 3) watching television, 4) using a computer at home, and 5) for leisure, not including television.

Methods: Test–retest reliability of domain-specific sitting time (minIdj1) on weekdays and weekend days was assessed using data collected on two occasions (median = 11 d apart). Validity of domain-specific self-reported sitting time on weekdays and weekend days was assessed against log data and sedentary accelerometer data.

Results: Complete repeat questionnaire and log data were obtained from 157 women (aged 51–59 yr) and 96 men (aged 45–63 yr). Reliability coefficients were high for weekday sitting time at work, watching television, and using a computer at home ( $r = 0.84$ – $0.78$ ) but lower for weekend days across all domains ( $r = 0.23$ – $0.74$ ). Validity coefficients were highest for weekday sitting time at work and using a computer at home ( $r = 0.69$ – $0.74$ ). With the exception of computer use and watching television for women, validity of the weekend-day sitting time items was low.



**Conclusions:** This study confirms the importance of measuring domain- and day-specific sitting time. The measurement properties of questions that assess structured domain-specific and weekday sitting time were acceptable and may be used in future studies that aim to elucidate associations between domain-specific sitting and health outcomes.

**McCaul K, Almeida O, Hankey G, Jamrozik K, Byles J & Flicker L.**  
**Alcohol use and mortality in older men and women.**  
*Addiction, 2010; 105(8): 1391-1400.*

**Aims:** To compare the effect of alcohol intake on 10-year mortality for men and women over the age of 65 years.

**Design, setting and participants:** Two prospective cohorts of community-dwelling men aged 65-79 years at baseline in 1996 (n = 11 727) and women aged 70-75 years in 1996 (n = 12 432).

**Measurements:** Alcohol was assessed according to frequency of use (number of days alcohol was consumed per week) and quantity consumed per day. Cox proportional hazards models were compared for men and women for all-cause and cause-specific mortality.

**Findings:** Compared with older adults who did not consume alcohol every week, the risk of all-cause mortality was reduced in men reporting up to four standard drinks per day and in women who consumed one or two drinks per day. One or two alcohol-free days per week reduced this risk further in men, but not in women. Similar results were observed for deaths due to cardiovascular disease.

**Conclusions:** In people over the age of 65 years, alcohol intake of four standard drinks per day for men and two standard drinks per day for women was associated with lower mortality risk. For men, the risk was reduced further if accompanied with 1 or 2 alcohol-free days per week.

**McLaughlin D, Vagenas D, Pachana N, Begum N & Dobson A.**  
**Gender differences in social network size and satisfaction in adults in their seventies.**  
*Journal of Health Psychology, 2010; 15(5): 671-679.*

Strong social support is associated with lower mortality and morbidity and better self-rated health in later life. The aim of this study was to compare social network size and satisfaction in men (N = 2589) and women (n = 3152), aged 72-78 years. Women reported significantly larger networks (Difference 1.36, 95% CI 0.89, 1.83) than men. However, being separated, divorced or single had a significantly greater impact on men's social networks (Difference 0.92, 95% CI 0.17, 1.68). Poor mental health and sensory impairments

were associated with smaller networks and lower satisfaction with support for both men and women.

**Parkinson L, Gibson R, Robinson I & Byles J.**  
**Older women and arthritis: Tracking impact over time.**  
*Australasian Journal on Ageing, 2010; 29(4): 155-160.*

**Aim:** To explore the ongoing impact of arthritis on older community-dwelling women over 9 years of Australian Longitudinal Study on Women's Health data.

**Methods:** National longitudinal surveys (1996-2005) were conducted with a random sample of 12432 Australian women, aged 70-75 years in 1996. Self-report of doctor diagnosis of arthritis was the factor of interest. The main outcome measure was SF-36 health-related quality of life.

**Results:** A total of 7088 women completed the 2005 survey (58% of original cohort): 63% of women aged 77-85 years in 2005 reported doctor diagnosis of arthritis. Women with arthritis were more likely to report comorbid conditions, have poorer health and score as depressed and anxious. Arthritis was associated with decreasing scores for physical function, pain and social function over time.

**Conclusion:** Arthritis was associated with an increasing negative impact on health and quality of life for older women over time.

**Parkinson L, Warburton J, Sibbritt D & Byles J.**  
**Volunteering and older women: Psychosocial and health predictors of participation.**  
*Ageing and Mental Health, 2010; 14(8): 917-927.*

**Objectives:** As populations age, there will be a need for more volunteers in social welfare, and consequently a need to better understand potential effects of volunteering for older people. Whilst there is a body of international literature exploring health benefits of volunteering in later life, there are currently no longitudinal studies of Australian populations. Internationally, there is a lack of studies focusing on older women, who comprise the majority of the ageing population. The aim of this article was to explore the relationship between volunteering and psychosocial and health factors for a cohort of older Australian women over time.

**Method:** Data for this study were from the oldest cohort of Australian Longitudinal Study on Women's Health, a 20-year longitudinal survey of Australian women aged 70-75 years in 1996. Volunteering status was the factor of interest and study factors included a broad range of demographic, health and social factors. A longitudinal model was developed for mediators of volunteering over time.

**Results:** Of 7088 women in 2005, 24.5% reported actively volunteering, 15.5% were continuing, 7.5%

were new, 15.3% were intermittent and 34.7% had never been volunteers. Volunteering was associated with increased quality of life and social support. Women were more likely to continue volunteering over time if they lived in a rural area, had higher socioeconomic indicators, and better levels of physical and mental health.

**Conclusions:** This study contributes to the literature on the relationship between volunteering and health for older women. Understanding the potential health implications of volunteering is a critical issue in current policy debates.

Powers J & Loxton D.

### **The impact of attrition in an 11-year prospective longitudinal study of younger women.**

*The Annals of Epidemiology, 2010; 20(4) 318-321.*

**Purpose:** To investigate the impact of attrition on prevalence and associations between variables across four waves of a longitudinal study.

**Methods:** Prevalence of socio-demographic and health characteristics were estimated for respondents to one, two, three or all four waves of the Australian Longitudinal Study of Women's Health cohort born between 1973 and 1978. Associations with self-rated General Health (GH) and Mental Health (MH) were compared using fixed effects in separate mixed models for respondents to at least one wave, at least two waves, at least three waves, or four waves of the longitudinal study.

**Results:** 14,247 women aged 18-23 years responded to Wave 1 in 1996. Respondents to all waves were more educated, and less likely to be stressed about money, to be smokers and to have children than respondents to some waves. Across all models, better GH was consistently associated with more education, no monetary stress, being married, having children, fewer visits to the doctor and not smoking. Similar results were obtained for MH.

**Conclusions:** Although the potential for bias due to attrition must be considered, the current paper contributes to the growing body of evidence that suggests such biases are insufficient to preclude meaningful longitudinal analyses.

Powers J, Loxton D, Burns L, Shakeshaft A, Elliott E & Dunlop A.

### **Assessing alcohol guidelines for pregnant women: results from an 11-year prospective study**

*Medical Journal of Australia, 2010; 192(12): 690-693.*

**Objective:** To assess women's compliance with different Australian guidelines on alcohol intake during pregnancy and examine factors that might

influence compliance. Design, setting and participants: We analysed prospective, population-based data on women aged 22-33 years who were pregnant before October 2001, when guidelines recommended zero alcohol (n = 419), or were first pregnant after October 2001, when guidelines recommended low alcohol intake (n = 829). Data were obtained from surveys conducted in 1996, 2000, 2003 and 2006 as part of the Australian Longitudinal Study on Women's Health.

**Main outcome measures:** Relative risks (RRs) for zero alcohol intake, low alcohol intake and compliance with alcohol guidelines, estimated by a modified Poisson regression model with robust error variance.

**Results:** About 80% of women consumed alcohol during pregnancy under zero and low alcohol guidelines. Compliance with zero alcohol guidelines or low alcohol guidelines (up to two drinks per day and less than seven drinks per week) was the same for women who were pregnant before October 2001 and women who were first pregnant after October 2001 (20% v 17% for compliance with zero alcohol guidelines,  $P > 0.01$ ; 75% v 80% for compliance with low alcohol guidelines,  $P > 0.01$ ). Over 90% of women drank alcohol before pregnancy and prior alcohol intake had a strong effect on alcohol intake during pregnancy, even at low levels (RR for zero alcohol, 0.21 [95% CI, 0.16-0.28]; RR for low alcohol, 0.91 [95% CI, 0.86-0.96]). RR for compliance with guidelines was 3.54 (95% CI, 2.85-4.40) for women who were pregnant while low alcohol intake was recommended, compared with those who were pregnant while zero alcohol guidelines were in place.

**Conclusion:** The October 2001 change in alcohol guidelines does not appear to have changed behaviour. Risks associated with different levels of alcohol intake during pregnancy need to be clearly established and communicated.

Ross L, Anstey K, Kiely K, Windsor T, Byles J, Luszcz M & Mitchell P.

### **Response letter to Drs. O'Callaghan and O'Neill.**

*Journal of the American Geriatrics Society, 2010; 58(6): 1213-1214.*

No abstract available

Rowlands I & Lee C.

### **Adjustment after miscarriage: Predicting positive mental health trajectories among young Australian women.**

*Psychology, Health & Medicine, 2010; 15 (1): 34-49.*

Understanding predictors of adjustment after miscarriage can assist in the development of supportive interventions. This article uses data from three waves of the Younger Cohort of the Australian Longitudinal Study on Women's Health

(1996, 2000, 2003) to examine predictors of positive Mental Health trajectories among 998 women who had experienced miscarriages. Using the five-item Mental Health subscale of the SF-36 (MHI-5) as an outcome, a multilevel model of change showed a general positive trend in Mental Health over time; also, higher education and satisfaction with the primary care physician were associated with higher Mental Health scores at each survey. After adjusting for sociodemographic factors, stress and negative life events were negatively associated with Mental Health. A history of medically diagnosed depression or anxiety was a significant predictor of change in Mental Health across the surveys, with women with such a history showing downward trajectories in Mental Health over time. The data suggest that greater targeted support and monitoring for women who have a history of mental health problems may assist those women to cope following miscarriage.

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*, 2010; 29(1): 25-32.

Back problems and back pain are amongst the most prevalent conditions afflicting Australians and carry high direct and indirect costs for the health care systems of all developed countries. A major gap in the research literature on this topic is the longitudinal analysis of health seeking behaviour for people with back pain. All studies to date have been cross-sectional and it is important that the use of different providers (both conventional and complementary and alternative medicine, CAM) is examined over time. This study analysed data from a longitudinal study conducted over a 3-year period on 8,910 young Australian women. Information on health service use, self-prescribed treatments, and health status was obtained from two questionnaires mailed to study participants in 2003 and 2006. We found that there is little difference in the consultation practises or use of self-prescribed CAM between women who recently sought help for back pain and women who had longer-term back pain; the only difference being that women with longer-term back pain consulted more with chiropractors. We conclude that women who seek help for their back pain are frequent visitors to a range of conventional and CAM practitioners and are also high users of self-prescribed CAM treatments. The frequent use of a range of conventional providers and practitioner-based and self-prescribed CAM amongst women with back pain warrants further investigation.

Sibbritt D, Byles J & Tavenor M.

**Older Australian women's use of dentists: A longitudinal analysis over 6 years.**

*Australasian Journal on Ageing*, 2010; 29(1): 14-20.

**Aim:** To identify factors associated with dentist consultation by older Australian women.

**Methods:** Participants from the older cohort of the Australian Longitudinal Study on Women's Health which originally involved 12 432 older women.

**Results:** 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 (RR = 1.26; 95% CI: 1.21, 1.32), were non-smokers (RR = 1.38; 95% CI: 1.21, 1.57), did not have diabetes (RR = 1.16; 95% CI: 1.08, 1.25), had better physical health (RR = 1.02 (95% CI: 1.01, 1.02)). Women were less likely to consult with a dentist if they found it difficult to live on their income (RR = 0.90; 95% CI: 0.85, 0.95).

**Conclusion:** Access to dentists, cost of consultations and poor health appear to be significant factors influencing visits to a dentist by older Australian women.

**van Uffelen J, Berecki J, Brown W & Dobson A. What is a healthy Body Mass Index for women in their seventies? Results from the Australian Longitudinal Study on Women's Health.**

*Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 2010; 65(8): 847-853.

**Background:** This study examines the relevance of the World Health Organization (WHO) optimal range for body mass index (BMI) of 18.5–25 kg/m<sup>2</sup> to morbidity in older women.

**Methods:** Data were from 11,553 women who completed five mailed surveys at 3-year intervals between 1996 (age 70–75 years) and 2008 (age 82–87 years). Incidence and prevalence of diabetes mellitus (DM), hypertension, heart disease, and osteoporosis; hospital admissions; and mortality were assessed. The association between BMI in 1996 and each outcome was examined using logistic regression models with repeated measures and a proportional hazards model for survival.

**Results:** There were consistent associations between increasing BMI and increasing incidence and prevalence of DM, hypertension, and heart disease and between increasing BMI and decreasing risk of osteoporosis. The association with hospital admission was J shaped and lowest for BMI of 22–24 kg/m<sup>2</sup>, whereas the association with mortality was U shaped, being lowest for BMI of 25–27 kg/m<sup>2</sup>. These associations were not affected by excluding women with cancer or excluding the first 5 years of follow-up.



Conclusions: results illustrate the complexity of determining the optimal BMI range for women who survived to age 70–75 years. Although the WHO recommendation is appropriate for DM, hypertension, heart disease, and hospitalization, a slightly higher BMI range may be optimal for osteoporosis and mortality.

van Uffelen J, Watson M, Dobson A & Brown W. **Sitting time is associated with weight, but not with weight gain in mid-aged Australian women.** *Obesity*, 2010; 18(9): 1788-1794.

The aim of this study was to examine the associations between sitting time, weight, and weight gain in Australian women born in 1946–1951. Data were from 8,233 women who completed surveys for the Australian Longitudinal Study on Women's Health (ALSWH) in 2001, 2004, and 2007. Associations between sitting time and weight, and between sitting time and weight change in each 3-year period were examined using repeated measures modeling. The associations between weight and change in sitting time were also examined. Analyses were stratified for BMI categories: normal weight ( $18.5 \leq \text{BMI} < 25$ ), overweight ( $25 \leq \text{BMI} < 30$ ), and obese ( $\text{BMI} \geq 30$ ). In cross-sectional models, each additional hour of sitting time was associated with 110 g (95% confidence interval (CI): 40–180) and 260 g (95% CI: 140–380) additional weight in overweight and obese women, respectively (fully adjusted model). In prospective analyses, sitting time was not consistently associated with weight change, after adjustment for other variables, and weight was not associated with change in sitting time over successive 3-year periods. In conclusion, although the cross-sectional associations between sitting time and weight were evident in overweight and obese women, there was no consistent association between sitting time and weight gain. A potential explanation is that prospective associations may only be apparent over longer periods of time. These results do not support a role for reducing sitting time as a short-term means of weight control in mid-aged women.

van Uffelen J & Brown W. **BMI and longevity in women: a time for reflection** *Maturitas*, 2010; 67(4): 294-295.

The World Health Organization (WHO) recommends a body mass index range of 18.5–25 kg/m<sup>2</sup> for optimal health in adults aged 18+ years, with BMI 25–30 kg/m<sup>2</sup> categorized as 'overweight' and >30 kg/m<sup>2</sup> as 'obese'. Although it is likely that the health consequences of overweight and obesity change with increasing age, there are no distinctions in the BMI recommendations for young, mid-aged and older adult women.

## PUBLISHED BOOK CHAPTERS

Byles J, Young A & Lowe J. **Women's knowledge and self-management of diabetes.** In Eliza I. Swahn (Ed.) *Diabetes in Women*. Nova Science Publishers.

## ACCEPTED PAPERS

Sibbritt D, Adams J & Lui C. **Health service utilisation by pregnant women over a seven-year period.** *Midwifery*.

Objective: to examine the use of complementary and alternative medicine during pregnancy using data from a longitudinal cohort study.

Design and setting: the research was conducted as part of the Australian Longitudinal Study on Women's Health which was designed to investigate multiple factors affecting the health and well-being of women over a 20-year period.

Participants: the younger cohort of the Australian Longitudinal Study on Women's Health who had completed four surveys in 1996, 2000, 2003 and 2006.

Findings: the data reveal an increase both in consumption of complementary and alternative medicine and in consultations with general practitioners/specialists during pregnancy. Women utilised complementary and alternative medicine as a supplement for conventional maternity care.

Implications: given the potential risks of some complementary and alternative medicine for pregnant women and their unborn child, it is essential that maternity care providers are adequately informed about these treatments and that further research investigates the details of such concurrent use.

Adams J, Sibbritt D & Lui C. **The use of complementary and alternative medicine during pregnancy: A longitudinal study of Australian Women.** *Birth*.

Background: This paper reports the first longitudinal analysis of complementary and alternative medicine consumption before, during and after pregnancy and between pregnancies. Methods: Analysis focused upon data from 13,961 women from the younger cohort of the Australian Longitudinal Study on Women's Health collected between 1996 and 2006. Chi-square

tests were employed for the cross-sectional analysis of categorical variables and t-tests for continuous variables. Generalized Estimating Equations were used to conduct multivariate longitudinal analysis. Results: Complementary and alternative medicine use among pregnant and non-pregnant women continued to increase over the ten-year period. Although pregnancy status was not predictive of the use of alternative treatments, pregnant women did employ these therapies or modalities for the relief of pregnancy-related complaints and symptoms. Analysis also reveals that women use complementary and alternative treatments selectively during pregnancy. Conclusions: This study highlights the need for further research which is sensitive to the consumption of specific complementary and alternative therapies or modalities and to the wider contexts within which women perceive risk associated with their use of complementary and alternative treatments.

**Burton N, Brown W & Dobson A.**  
**Accuracy of body mass index estimated from self-reported height and weight in mid-aged Australian women.**

*Australian and New Zealand Journal of Public Health.*

Objective: To assess the accuracy of body mass index (BMI) estimated from self-reported height and weight from a mailed survey, in a population-based sample of mid-aged Australian women.

Methods: 159 women (age 54-59 years) were recruited from the Australian Longitudinal Study on Women's Health (ALSWH). Participants provided height and weight data in a mailed survey and were then measured (Brisbane, Australia 2005). Differences between self-reported and measured data were examined by plotting against the measured values and using paired t-tests and kappa statistics. Factors associated with biased reporting were assessed using regression models.

Results: Both self-reported height and weight tended to be underestimated, with a mean difference of 0.67cm (95% CI 0.26 to 1.08cm) and 0.95kg (95% CI 0.44 to 1.47kg) respectively. Married women reported height and BMI more accurately than single women (average difference of 1.28cm, 95%CI 0.19 to 2.37cm and -1.00, 95%CI -1.69 to -0.30, respectively). Women with BMI 18.5-24.9 reported weight more accurately than obese women (average difference of 2.26kg, 95% CI 0.14 to 4.38kg). There was 84% agreement between BMI categories derived from self-reported and measured data, with 85%, 73% and 94% of women correctly classified as obese, overweight, and healthy BMI using self-reported data and kappa=0.81.

Conclusions: There is substantial agreement between self-reported and measured height and weight data for mid-aged women, especially among married and

healthy weight women.

Implications: Population-based studies among mid-aged women in Australia can use self-reported data obtained from mailed surveys to derive BMI estimates.

**Byles JE, Dolja-Gore X, Loxton D, Parkinson L & Stewart Williams J.**

**Women's Uptake of Medicare Benefits Schedule Mental Health Items for General Practitioners, Psychologists and Other Allied Mental Health Professionals**

*Medical Journal of Australia.*

No abstract available

**Dobson A, McLaughlin D, Vagenas D & Wong K.**

**Why are death rates higher in rural areas? Evidence from the Australian Longitudinal Study on Women's Health.**

*Australian and New Zealand Journal of Public Health.*

Objective: Death rates in Australia are higher in rural than urban areas. Our objective is to examine causes of death of urban and rural women to gain insight into potential explanations for differences in mortality.

Methods: Participants were a community-based random sample of women (n=12,400) aged 70-75 years when recruited in 1996 to the Australian Longitudinal Study on Women's Health. The main variables used were: area of residence classified according to the Australian Standard Geographic Classification, survival to 31st October 2006 and cause of death.

Results: The total number of deaths at 31st October 2006 was 2,803 and total number of women still alive was 9,597. Mortality was substantially higher in regional and remote areas for chronic obstructive pulmonary disease (COPD), lung cancer, ischaemic heart disease (IHD), but not for other cancers or stroke. Analyses were repeated with adjustment for smoking history but this did not change the hazard ratios (HR) for area of residence much. For example, COPD HR=2.01 (95% confidence interval 1.34, 3.02) for inner regional areas, HR=1.57 (0.96, 2.64) for outer regional areas and HR=3.00 (1.26, 7.16) for remote areas (after adjustment for smoking and age). Other high values included HR=1.88 (1.14, 3.09) for lung cancer and HR=1.40 (1.12, 1.75) for IHD in outer regional areas.

Conclusion: Possible explanations for the differences in survival between urban and rural women include inequities in health services and environmental hazards. Implications: People in rural areas may suffer from a double disadvantage of poorer health services and greater exposure to health hazards.

Heesch K, Burton N & Brown W.  
**Concurrent and prospective associations between physical activity and mental health in older women.**

*Journal of Epidemiology and Community Health.*

**Background:** Leisure-time physical activity (LTPA) shows promise for reducing the risk of poor mental health in later life, although gender- and age-specific research is required to clarify this association. This study examined the concurrent and prospective relationships between both LTPA and walking with mental health in older women.

**Methods:** Community-dwelling women aged 73-78 years completed mailed surveys in 1999, 2002 and 2005 for the Australian Longitudinal Study on Women's Health. Respondents reported their weekly minutes of walking, moderate LTPA and vigorous LTPA. Mental health was defined as the number of depression and anxiety symptoms, as assessed with the Goldberg Anxiety and Depression Scale (GADS). Multivariable linear mixed models, adjusted for socio-demographic and health related variables, were used to examine associations between five levels of LTPA (none, very low, low, intermediate and high) and GADS scores. For women who reported walking as their only LTPA, associations between walking and GADS scores were also examined. Women who reported depression or anxiety in 1999 were excluded, resulting in data from 6653 women being included in these analyses.

**Results:** Inverse dose-response associations were observed between both LTPA and walking with GADS scores in concurrent and prospective models ( $p < 0.001$ ). Even low levels of LTPA and walking were associated with lowered scores. The lowest scores were observed in women reporting high levels of LTPA or walking.

**Conclusion:** The results support an inverse dose-response association between both LTPA and walking with mental health, over 3 years in older women depression or anxiety.

Hockey R, Tooth L & Dobson A.  
**Relative survival: A useful tool to assess generalisability in longitudinal studies of health in older persons.**

*Emerging Trends in Epidemiology.*

**Background:** 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.

**Methods:** The authors used data from the 1921-26 cohort ( $n=12,416$ , aged 70-75 in 1996) from the Australian Longitudinal Study on Women's Health. 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.

**Results:** 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.

**Conclusion:** 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.

Johnstone M, Lucke J & Lee C.  
**Influences of marriage, motherhood, and other Life Events on Australian women's employment aspirations.**

*Psychology of Women Quarterly.*

The study contributes to the understandings of how women negotiate work and family over the life course by investigating what factors impact young women's aspirations for full time, part-time, and other forms of work. Using data from the Australian Longitudinal Study on Women's Health (ALSWH) with its nationally representative sample of Australian women, the authors examine how women moving from their 20s to early 30s change their aspirations for employment (at the age of 35) after significant life events and changes, including the birth of a child. Multinomial logistic regression analyses across two transition periods ( $N = 7,505$  and  $N = 7,584$ ) showed 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 become mothers, or move into situations in which motherhood is likely, many adjusted their employment aspirations away from full-time employment and toward part-time work. The findings suggest a growing awareness of the practical difficulties of balancing paid work and family roles within the current context of work and family policy and practice in Australia. Women's choices are not free of constraints; rather, younger generations of women negotiate work and family life by adjusting and changing their own aspirations within the context and circumstances of their lives.



Lowe J, Byles J, Dolja-Gore X & Young A.  
**Does systematically organized care improve outcomes for women with diabetes?**

*Journal of Evaluation in Clinical Practice.*

Objective: To investigate whether financial reimbursement for a bundle of diabetes care items self-reported by general practitioners (GPs) leads to improved outcomes for women with diabetes.

Methods: Longitudinal cohort study of women in the Australian Longitudinal Study on Women's Health aged 45–50 and 70–75 years when recruited in 1996.

Outcomes: Short Form 36-item (SF-36), Medicare and pharmaceutical benefits costs 2002–2005, uptake of annual cycle of care for diabetes (ACC).

Results: Annual cycle of care claims were identified for 23% of 388 mid-age, and 40% of 616 older women with diabetes. ACC was not associated with statistically significantly higher costs in either group. Women for whom the GP had received an ACC fee were more likely to have been overweight, had more GP visits, more medications, and more 'no cost' visits. Unlike older women, mid-age women for whom the GP had received an ACC fee were more likely to have difficulty managing on their income and tended to have worse physical and social function scores prior to the time the ACC was introduced and compared with other women with diabetes continued to have poorer scores at subsequent surveys. There was no association between ACC, co-morbidities or country of birth. Women who developed diabetes after the first survey (incident cases) tended to have better SF-36 health profile scores and lower costs than those who reported diabetes on the first survey (prevalent cases).

Conclusions: General practitioners of women with diabetes, who have more health care encounters and poorer health-related quality of life, have adopted ACC with little impact on the decline in quality of life of the women nor on health care costs.

McKenzie S, McLaughlin D, Dobson A & Byles J.  
**Urban–rural comparisons of outcomes for informal carers of elderly people in the community : A systematic review.**

*Maturitas.*

As the age of the general population increases, the number of elderly people who need care is increasing. It has been suggested that rural carers may be disadvantaged compared to urban carers, but it is not clear what affect geographic location has on carers. This paper presents a systematic review of the literature on urban–rural comparisons on various outcomes for informal carers who provide care for elderly people in the community. Of 150 articles that were reviewed, eight articles were included with three themes in the outcomes for carers: service use, health promotion behaviors and psychological health

(such as carer stress, burden or depressive symptoms). Overall, there were few consistent or statistically significant differences between urban and rural carers. Many of the differences observed were explained by other factors, such as carer or care recipient characteristics. The literature search was limited to papers in the English language, involving quantitative methods and published in peer-reviewed journals. There were not enough studies found to examine other outcomes or to pool data across studies. There is too little evidence comparing urban and rural carers to inform clinicians and policy makers. More good-quality research is urgently needed.

McKerras D, Powers J, Boorman J, Loxton D & Giles G.

**Estimating the impact of mandatory fortification of bread with iodine on pregnant and post-partum women.**

*Epidemiology and Community Health.*

No abstract available.

McLaughlin D, Adams J, Vagenas D & Dobson A.

**Factors which enhance or inhibit social support: A mixed methods analysis of social networks in older women.**

*Ageing and Society.*

Evidence suggests that people with strong social support have lower mortality and morbidity and better self-rated health in later life, but few studies have used longitudinal data to examine the factors that inhibit or enhance social support. This study used both quantitative data and qualitative texts to explore older women's social networks. The mixed-methods design drew participants from the 1921–26 cohort of the Australian Longitudinal Study on Women's Health (ALSWH). Regression modelling for repeated measures was used to analyse the longitudinal data. The qualitative data was content analysed by the themes identified from the quantitative analyses. The quantitative analyses revealed that larger social networks associated with better mental health, widowhood, illness or death of a family member, and no mobility problems. Women who were not Australian-born, had sight problems or who had moved house were more likely to have smaller social networks. The qualitative data provided insight into the lived experiences of this group of women. The use of a mixed methodology enabled the longitudinal quantitative results to be enriched by the women's own words. The findings highlight the importance to older women of being able to access their social network members to gain the psychological and emotional benefits.



McLaughlin D, Adams J, Almeida O, Brown W, Byles J, Dobson A, Flicker L, Hankey G, Jamrozik K, McCaul K, Norman P & Pachana N.  
**Are the national guidelines for health behaviour appropriate for older Australians? Evidence from the Men, Women and Ageing project.**  
*Australasian Journal of Ageing.*

No abstract available.

Mehraban A, MacKenzie L & Byles J.  
**A self-report tool was able to identify older women at risk of falls in their home environment.**

*Journal of Clinical Epidemiology.*

No abstract available.

Menz H, Barr E & Brown W.  
**Predictors and persistence of foot problems in women aged 70 years and over: A prospective study.**  
*Maturitas.*

Objective: To examine the prevalence and correlates of foot problems in older women over a 6-year period.

Study design: Women aged 70–75 years who participated in the Australian Longitudinal Study on Women's Health completed a postal questionnaire incorporating questions relating to demographics, major medical conditions and health status in 1999 (n = 8059) and 2005 (n=4745).

Main outcome measures: Self-reported foot problems at baseline and at 6 years follow-up, major medical conditions, body mass index (BMI).

Results: At baseline, 26% of the sample reported foot problems. At follow-up, 37% remained free of foot problems, 36% had developed a new foot problem, 13% experienced resolution of their foot problems and 14% experienced persistent foot problems. Increase in BMI was significantly associated with the development of new foot problems and the persistence of existing foot problems.

Conclusions: Foot problems are common in older women and are associated with increased BMI. Maintaining a healthy body weight may therefore play a role in the prevention of foot disorders in older women.

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.**  
*European Journal of Clinical Nutrition.*

The aims of this study were to assess the major dietary patterns of two age cohorts of women, to determine to extent to which the dietary patterns differ between the cohorts and to assess whether they

vary according to socio-demographic and behavioural characteristics and patterns of nutrient intake. Dietary intake was assessed using an 80-item food frequency questionnaire for women aged 50–55 years (n=10150; “mid-age”) in 2001 and aged 25–30 years (n=7371; “young”) in 2003, from the Australian Longitudinal Study on Women's Health. Factor analysis using principal component extraction was used to identify dietary patterns and a pattern score was calculated from the consumption of the food items identified with each dietary pattern. Associations between the dietary pattern scores and socio-demographic and behavioural characteristics and nutrient intakes were investigated using regression analysis. Six dietary patterns were identified among the women. Patterns identified were labelled: cooked vegetables; fruit; Mediterranean-type; processed meat, meat and takeaway; reduced fat dairy and high fat and sugar foods. Healthier dietary patterns were associated with other favourable health related behaviours, higher socio-economic status and living in urban areas. Young and mid-age women have similar dietary patterns that are associated with key sociodemographic and behavioural factors. Future follow-up of these cohorts will help identify whether these differences are age or cohort effects and the impact of these differences on chronic disease outcomes.

Pachana N, Brilleman S & Dobson A.  
**Reporting of Life Events over time: Methodological issues in a longitudinal sample of women.**

*Psychological Assessment.*

The number of life events reported by study participants is sensitive to the method of data collection and time intervals under consideration. Individual characteristics also influence reporting; respondents with poor mental health report more life events. Much current research on life events is cross-sectional. Data from a longitudinal study of women's health from four waves over a decade suggest that over time additional systematic biases in reporting life events occur. Inconsistency over time is due to both fall-off of reporting and telescoping. Intra-category variability, ambiguity of items, as well as respondent characteristics also potentially contribute to response biases. While some factors (e.g. item wording) are controllable, others (e.g. respondents' mental health) are not, and must be factored into data analysis and interpretation.

Rowlands I & Lee C.  
**The silence was deafening: Social and health service support after miscarriage.**  
*Journal of Reproductive and Infant Psychology.*

No abstract available.

Sibbritt D, Adams J & Moxey A.  
**Mid-age women's consultations with acupuncturists: A longitudinal analysis of 11,200 women, 2001-2007.**

*Journal of Alternative and Complementary Medicine.*

No abstract available.

Sibbritt D, Adams J & van der Riet P.  
**The prevalence and characteristics of young and mid-age women who use yoga and meditation: results of a nationally representative survey of 19,209 Australian women.**

*Complementary Therapies in Medicine.*

No abstract available.

van Uffelen J, Watson M, Dobson A & Brown W.  
**Comparison of self-reported week-day and weekend-day sitting time and weekly time-use: results from the Australian Longitudinal Study on Women's Health.**

*International Journal of Behavioral Medicine.*

**Background:** The study of sedentary behavior is a relatively new area in population health research, and little is known about patterns of sitting time on weekdays and weekend-days.

**Purpose:** To compare self-reported week-day and weekend day sitting time with reported weekly time spent in other activities.

**Method:** Data were from 8,717 women born between 1973 and 1978 ('younger'), and 10,490 women born between 1946 and 1951 ('mid-age') who completed surveys for the Australian Longitudinal Study on Women's Health in 2003 and 2001, respectively. They were asked about time spent sitting on week-days and weekend-days. The women were also asked to report time spent in employment, active leisure, passive leisure, home duties, and studying. Mean week-day and weekend-day sitting times were compared with time-use using analysis of variance.

**Results:** Younger women sat more than mid-aged women, and sitting time was higher on week-days than on weekend-days in both cohorts. There were marked positive associations between week-day and weekend-day sitting times and time spent in passive leisure in both cohorts, and with time spent studying on week-days for the younger women. Week-day sitting time was markedly higher in women who reported >35 h in employment, compared with those who worked <35 h. In contrast, there were inverse associations between sitting time and time spent in home duties. Associations between sitting and active leisure were less consistent.

**Conclusion:** Although week-day sitting time was higher than weekend-day sitting time, the patterns of the relationships between week-day and weekend-day

sitting and time-use were largely similar, except for time spent in employment.

van Uffelen J, Heesch N & Brown W.  
**Correlates of sitting time in working age Australian women: Who should be targeted with interventions to decrease sitting time?**  
*Journal of Physical Activity and Health.*

**Background:** While there is emerging evidence that sedentary behavior is negatively associated with health risk, research on the correlates of sitting time in adults is scarce.

**Methods:** Self-report data from 7,724 women born between 1973-1978 and 8,198 women born between 1946-1951 were collected as part of the Australian Longitudinal Study on Women's Health. Linear regression models were computed to examine whether demographic, family and caring duties, time use, health and health behavior variables were associated with weekday sitting time.

**Results:** Mean sitting time (SD) was 6.60 (3.32) hours/day for the 1973-1978 cohort and 5.70 (3.04) hours/day for the 1946-1951 cohort. Indicators of socio-economic advantage, such as full-time work and skilled occupations in both cohorts and university education in the mid-age cohort, were associated with high sitting time. A cluster of 'healthy behaviours' was associated with lower sitting time in the mid-aged women (moderate/high physical activity levels, non-smoking, non-drinking). For both cohorts, sitting time was highest in women in full-time work, in skilled occupations and in those who spent the most time in passive leisure.

**Conclusions:** The results suggest that, in young and mid-aged women, interventions for reducing sitting time should focus on both occupational and leisure-time sitting.

# CONFERENCE PRESENTATIONS

Astbury J, Bruck D & Loxton D.

**Sexual violence as a predictor of sleep difficulties in a community sample of young women (oral & poster presentation).**

22nd Annual Scientific Meeting of the Australasian Sleep Association, Christchurch, New Zealand, 21-23 October 2010.

Astbury J, Bruck D & Loxton D.

**Sexual violence as a predictor of sleep difficulties in a community sample of young women.**

20th Congress of the European Sleep Research Society, Lisbon, Portugal, 14-18 September 2010.

Astbury J, Bruck D & Loxton D.

**Sexual violence as a predictor of sleep difficulties in a community sample of young women (poster presentation).**

2010 Australian Health and Medical Research Congress, Melbourne, Victoria, 14-18 November 2010.

Beatty L.

**Complementary and alternative medicine use and distress among Australian women with cancer: A prospective longitudinal investigation.**

IPOS 12th World Congress of Psycho-Oncology, Quebec, Canada, 25-29 May 2010.

Blumfield M, Hure A, MacDonald-Wicks, Patterson A, Smith R & Collins C.

**The food choices of Australian women prior to conception.**

Dietitians Association of Australia 28th National Conference, Melbourne, Victoria, 27-29 May 2010.

Byles J & Gibson R.

**Living long and living well: Factors associated with maintenance of physical function among older women (poster presentation).**

South East Asian Conference on Ageing (SEACA2010), Kuala Lumpur, Malaysia, 17-18 July 2010.

Byles J, McLaughlin D, Leung J & Dobson A.

**Living with stairs: Functioning in a large cohort of older Australian women and men.**

2010 Australian Association of Gerontology Rural Conference. Ageing at home: sustainable housing and communities for older people, Ballina, New South Wales, 15-16 April 2010.

Byles J, Pachana N & Tooth L.

**Women, health and ageing: 12 years of results from the Australian Longitudinal Study on Women's Health (Symposium).**

International Federation on Ageing 10th Global Conference, Melbourne, Victoria, 4 May 2010.

Byles J, McLaughlin D, Leung J & Dobson A.

**Living with stairs: Functioning in a large cohort of older Australian women and men.**

Australian Association of Gerontology 43rd National Conference, Hobart, Tasmania, 17-19 November 2010.

Byles J, McLaughlin D, Leung J & Dobson A.

**Sleeping difficulty and mortality among older Australian men and women.**

Australian Association of Gerontology 43rd National Conference, Hobart, Tasmania, 17-19 November 2010.

Chojenta C, Loxton D & Lucke J.

**The perfect mother wouldn't have that: Australian women's experiences of motherhood and postnatal depression (poster presentation).**

International Marce Society Conference, Pittsburgh, United States of America, 27-30 October 2010.

Chojenta C, Loxton D & Lucke J.

**The perfect mother wouldn't have that: Australian women's experiences of motherhood and postnatal depression.**

Challenging the Boundaries: 16th Annual Qualitative Health Research Conference, Vancouver, Canada, 3-5 October 2010.

Chojenta C, Loxton D & Lucke J.

**Prevalence and antecedents of postnatal depression in Australia.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May 2010.

Dobson A & Mishra G.

**Study design and statistical analysis challenges in women's health studies.**

2010 Joint Statistical Meetings, Vancouver, British Columbia, 31 July-5 August 2010.

Fearnley E, Soares Magalhaes R, Speldewinde P, Clements A, Weinstein P & Dobson A.

**Dryland salinity and its impact on physical and mental health in rural southern Western Australia.**

4th International Symposium on Geospatial Health, Melbourne, Victoria, 13-14 August 2010.

Harris M, Loxton D, Sibbritt D & Byles J.

**Psychosocial characteristics of midlife women with arthritis: Results from the Australian Longitudinal Study on Women's Health.**

National Conference of Emerging Researchers in Ageing: "Getting the Right Skill Mix", Newcastle, New South Wales, 21-22 October 2010.

Herbert D, Lucke J, & Dobson A.

**History behind the egg: Women's comprehensive histories and IVF outcomes, Australia, 2008-2009.**

Society for Epidemiologic Research (SER) Annual Conference, Seattle, United States of America, 23-26 June 2010.

Hockey R.

**Trends in health across three generations of Australian women: Findings from the Australian Longitudinal Study on Women's health.**

15th Biennial Conference of the Australian Population Association, Surfers Paradise, Queensland, 30 November–3 December, 2010.

Jordan S, Wilson A & Dobson A.

**The management of heart conditions in older rural and urban Australian women.**

Australasian Epidemiological Association Annual Conference 2010: Translating the Evidence into Practice, Sydney, New South Wales, 29 September - 01 October 2010.

Liddle J, Parkinson L & Sibbritt D.

**Do art and music making activities contribute to health and health-related quality of life in older women?**

National Conference of Emerging Researchers in Ageing: "Getting the Right Skill Mix", Newcastle, New South Wales, 21-22 October 2010.

Lopez D, Almeida O, Flicker L, McCaul K, Hankey G, Yeap B & Byles J

**Sensory impairment and mortality among the elderly: What do we know?**

Australian Association of Gerontology 43rd National Conference, Hobart, Tasmania, 17-19 November 2010

Loxton D, Powers J & Furber K.

**Intimate partner violence, health and social support.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May 2010.

Loxton D, Powers J, McDermott L, & Chojenta C.

**Alcohol and tobacco consumption during pregnancy.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May, 2010.

Loxton D. (chair)

**Symposium: Women's experiences of abuse: Findings from the ALSWH.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May, 2010.

Loxton D.

**Experiences of abuse across three generations.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May, 2010.

Loxton D, (chair)

**Motherhood, drought and elder abuse: Stories from three generations of women who participate in the Australian Longitudinal Study on Women's Health.**

Challenging the Boundaries: 16th Qualitative Health Research Conference, Vancouver, British Columbia, October 3-5, 2010.

Loxton D, Chojenta C & Powers J.

**Alcohol consumption among pregnant women: How do service providers and mothers learn about and react to official guidelines?**

Challenging the Boundaries: 16th Qualitative Health Research Conference, Vancouver, British Columbia, October 3-5, 2010.

Loxton D.

**Abuse in older age: Australian women's experiences of elder abuse.**

Challenging the Boundaries: 16th Annual Qualitative Health Research Conference, Vancouver, Canada, 3-5 October, 2010.

Lucke J, Watson M, Herbert D & Loxton D.

**Factors associated with STI among young women: Findings from the Australian Longitudinal Study on Women's Health (poster presentation).**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May 2010.



Lucke J, Chojenta C & Loxton D.

**Reproductive health: Findings from the Australian Longitudinal Study on Women's Health. Panel discussion.**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May 2010.

Lui C, Adams J & Sibbritt D.

**Creating wellbeing and managing chronic conditions: Use of complementary and alternative medicine among mid-age Australian women.**

5th International Congress on Complementary Medicine Research, Tromsø, Norway, 19-21 May, 2010.

McKay H.

**Permanently childless women have selfishly chosen careers over children (contribution to group presentation).**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May 2010.

McLaughlin D.

**Effect of mobility limitations and moving house on the social networks of older women.**

2010 AAG Rural Conference. Ageing at home: Sustainable housing and communities for older people, Ballina, New South Wales, 15-16 April, 2010.

McLaughlin D, Vagenas D, Pachana N & Dobson A.

**Social networks in older Australian men and women.**

27th International Congress of Applied Psychology, Melbourne, Victoria, 11-16 July, 2010.

McLaughlin D & Dobson A.

**Why are death rates higher in rural areas?**

John Richards Initiative, Melbourne, Victoria, 17 July, 2010.

McLaughlin D & Dobson A.

**Why are death rates higher in rural areas?**

Rural Medicine Australia Conference, Hobart, Tasmania, 22-24 October, 2010.

McLaughlin D & Pachana N.

**Sexual functioning in older men and women.**

The Gerontological Society of America's 63rd Annual Scientific Meeting, New Orleans, United States of America, 19-23 November, 2010.

Pachana N & McLaughlin D.

**Factors which enhance or inhibit social support: a longitudinal analysis of social networks in older women.**

The Gerontological Society of America's 63rd

Annual Scientific Meeting, New Orleans, United States of America, 19-23 November, 2010.

Parkinson L, Gibson R, Robinson I & Byles J.

**Arthritis and depression: Tracking the prevalence, impact and management in older women**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May, 2010.

Parkinson L.

**Volunteering and older people: Psychosocial and health predictors from an analysis of Australian Longitudinal Study on Women's Health (poster presentation).**

6th Australian Women's Health Conference: The New National Agenda, Hobart, Tasmania, 18-21 May, 2010.

Pit S & Byles J.

**Employment among mature age women: Health problems and quality of life.**

4th Symposium on Work Ability, Tampere, Finland, 6-9 June, 2010.

Pit S & Byles J.

**Employment among mature age women: Health conditions.**

International Federation on Ageing 10th Global Conference, Melbourne, Victoria, 4 May, 2010.

Powers J & Loxton D.

**Do adverse climate conditions affect women's self-rated health?**

Australasian Epidemiological Association Annual Scientific Meeting 2010, Sydney, New South Wales, 29 September - 1 October, 2010.

Powers J & the ALSWH team.

**Discussant on Missing data at the Early Career Workshop.**

Australasian Epidemiological Association Annual Scientific Meeting 2010: Translating the Evidence into Practice, Sydney, New South Wales, 29 September - 1 October, 2010.

Rich J, Wright S & Loxton D.

**Stories from women living with drought in Australia: A longitudinal exploration.**

Challenging the Boundaries: 16th Annual Qualitative Health Research Conference, Vancouver, Canada, 3-5 October, 2010.

Rich J.

**Stories from women in drought: A longitudinal exploration.**

2010 Emerging Researchers in Ageing. National Conference of Emerging Researchers in Ageing: 'Getting the Right Skill Mix', Newcastle, New South Wales, 21-22 October 2010.

Sibbritt D & Adams J.

**CAM use by a representative cohort of young Australian women with asthma, 1996-2006.**

*5th International Congress on Complementary Medicine Research, Tromsø, Norway, 19-21 May, 2010.*

Sibbritt D, Adams J & Parkinson L.

**Consultation practices, with both CAM practitioners and conventional health care providers, and self-prescribed CAM use by a cohort of mid-aged Australian women with arthritis.**

*5th International Congress on Complementary Medicine Research, Tromsø, Norway, 19-21 May, 2010.*

Stavrou E.

**Validation of self-reported cancer and predictors of false reports in Australian women.**

*Australasian Epidemiological Association Annual Scientific Meeting 2010: Translating the Evidence into Practice, Sydney, New South Wales, 29 September - 1 October, 2010.*

Stewart Williams J & Cunich M.

**Equity and cardiovascular disease in Australian women (poster presentation).**

*Heart and Mind Psychogenic Cardiovascular Disease, Prato, Italy, 1-4 September, 2010.*

Stewart Williams J & Cunich M.

**Equity and cardiovascular disease in Australian women.**

*23rd Scientific Meeting of the International Society of Hypertension, Vancouver, Canada, 26-30 September, 2010.*

Tavener M, Byles J & Loxton D.

**Identity construction in Australian baby boomer women (poster presentation).**

*British Society of Gerontology (BSG) 39th Annual Conference. 'Identities, Care and Everyday Life', Uxbridge, United Kingdom, 6-8 July, 2010.*

Teede H.

**Body mass index as a predictor of polycystic ovary syndrome risk: Results of a longitudinal cohort study.**

*Endo 2010: The 92nd Annual Meeting and Expo, San Diego, United States of America, 19-22 June, 2010.*

Tooth L, McKenzie SJ, Hockey R, Lucke J & Dobson A.

**Perceptions and disconnections of caregiving.**

*43rd Australian Association of Gerontology Conference, Hobart, Tasmania, 17-19 November, 2010.*

Tooth L, McKenzie SJ, Hockey R, Lucke J & Dobson A.

**Caregivers use of health and community services: Importance of stage of care transition.**

*43rd Australian Association of Gerontology Conference, Hobart, Tasmania, 17-19 November, 2010.*

Trinh L.

**Preliminary findings on the prevalence of poor mental health and wellbeing in the diabetes population.**

*Australian Diabetes Society and Australian Diabetes Educators Association Annual Scientific Meeting, Sydney, New South Wales, 1-3 September, 2010.*

Tu F, Goldstein G, Du H, Beaumont J, Pozolo K & Senapati S.

**Does regular physical activity protect women from development of endometriosis? (poster presentation).**

*American College of Obstetricians & Gynecologists (ACOG) 2010 Annual Clinical Meeting, San Francisco, United States of America, 18 May, 2010.*

van Gool K.

**The impact of out-of-pocket health care costs on GP use and cervical screening.**

*The 32nd Australian Conference for Health Economists, Sydney, New South Wales, 30 September - 1 October, 2010.*

van Uffelen, J, Heesch K & Brown W.

**Who is at risk of sedentary behaviour? Results from the Australian Longitudinal Study on Women's Health (poster presentation).**

*3rd International Congress on Physical Activity and Public Health, Toronto, Canada, 5-8 May, 2010.*

Wade T.

**A prospective investigation of the impact of disordered eating on quality of a young Australian female cohort (poster presentation).**

*Eating Disorders Research Society 16th Annual Meeting, Massachusetts, United States of America, 7-9 October, 2010.*

Williams L & Young A.

**The effect of social class on weight control in mid-age women: A longitudinal study.**

*Annual Meeting of the Australian and New Zealand Obesity Society, Melbourne, Victoria, 23-25 October, 2010.*

# SEMINARS & WORKSHOPS

Dobson A.

## **Statistical challenges in modelling health symptoms during menopausal transition.**

ALSWH University of Queensland Seminars, Herston, Queensland, 15 July 2010.

Dobson A.

## **Women's Health in 2025: Extrapolations from the Australian Longitudinal Study on Women's Health.**

ALSWH University of Queensland Seminars, Herston, Queensland, 22 April 2010.

Fitzgerald D.

## **Sleep difficulty and quality of life.**

ALSWH University of Queensland Seminars, Herston, Queensland, 17 June 2010.

Herbert D.

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ALSWH University of Queensland Seminars, Herston, Queensland, 9 September 2010.

Hockey R.

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Jenkins L.

## **Is fresh meat associated with a greater vegetable intake?**

Honours oral presentations. Newcastle, New South Wales, 1 June 2010.

Lucke J.

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Lui C.

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McLaughlin D.

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ALSWH University of Queensland Seminars, Herston, Queensland, 8 April 2010.

McLaughlin D.

## **Social networks in older Australian men and women.**

ALSWH University of Queensland Seminars, Herston, Queensland, 1 July 2010.

McLaughlin D.

## **Why are death rates higher in rural areas? Evidence from the Australian Longitudinal Study on Women's Health.**

ALSWH University of Queensland Seminars, Herston, Queensland, 1 July 2010.

Parkinson L.

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"Current & Proposed" Public Health Research Seminar program, Faculty of Health, University of Newcastle, Newcastle, New South Wales, 23 September 2010.

Rich J.

## **Narratives from women in drought.**

The Tom Farrell Institute for the Environment Research Higher Degree Seminars, Newcastle, New South Wales, 20 August 2010.

Stewart-Williams J & Dolja-Gore X.

## **Using linked data for health services research.**

ALSWH University of Newcastle Seminar, Newcastle, New South Wales, 9 - 10 November 2009.

Tavener M.

## **"My privileged life". Analysing the written stories of others: Issues of identity and belonging.**

ALSWH University of Queensland Seminars, Herston, Queensland, 12 October 2010.

Tooth L.

## **Caregivers use of health and community.**

ALSWH University of Queensland Seminars, Herston, Queensland, 8 November 2010.

Tooth L.

## **Needs of spouse carers of World War II veterans before and after widowhood.**

ALSWH University of Queensland Seminars, Herston, Queensland, 27 October 2010.

Tooth L.

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ALSWH University of Queensland Seminars, Herston, Queensland, 22 April 2010.



# COMPLETED STUDENT PROJECTS

## Mothers, work and mental health: Epidemiological and women's perspectives

Candidate: Beverley Lloyd

Degree: PhD

University: School of Public Health, Faculty of Medicine, University of Sydney

Supervisors: A/Professor Susan Quine & Professor Christina Lee

This thesis aimed to describe structural, social and individual influences on the mental health of young Australian women, focusing on women who become mothers in their twenties and who may wish to combine work with motherhood. It combines different disciplinary perspectives - social epidemiology, psychology and social sciences - in three studies that use a mixed methods approach. The key discipline is social epidemiology and the intention overall was to contribute to research and theory that might inform health and social policy to support contemporary women to combine their roles.

Study 1 extended recent UK and Canadian research on social inequalities in women's mental health. It commenced with an investigation of the combined impact of social roles and socio-economic position (SEP) on mental health. The indicator of SEP was (level of) education. There was no evidence that the effect of roles on mental health was moderated by women's SEP and roles did not mediate the strong association of SEP with mental health. Study 1 then considered the extent to which social inequalities may be explained by social stress and social support. It showed that overall social roles are associated with mental health, and their impact on mental health is mediated by stress and social support. Work however was not associated with mental health in this data. As expected there was a gradient of mental health inequality on the basis of education. However this was not mediated by stress or social support.

Study 2 turned to qualitative methods to gather the perceptions and views of young mothers about integrating family and work. Young mothers spoke of a variety of topics, but the

analysis concentrated on their talk of maternal and work identity, their motivations for employment and the issues that were distressing at the time of the interview. Their discussion of maternal and work identity demonstrated that young women view these roles quite differently. Maternal identity involves relational and task components related to the dependency and care of children. Work identity was expressed as a need 'to be me', to develop an identity separate from the demands of motherhood. Although normative discourses about appropriate maternal behaviour appeared to be unavoidable and gendered ideologies of motherhood were



present in the talk of these women, their work and family decisions were made as much by their need to exercise an identity that was separate to motherhood, as their concerns for their children. At the same time women demonstrated a moral commitment to the care of the children, and sought childcare that matched their perceptions of appropriate care, either formal or informal. Integrating work and family was not always easy, and a range of chronic difficulties and life events impinged on women's ability to feel some 'balance' between the two roles. This was particularly evident for mothers who were in full-time employment as a result of extrinsic (usually financial) motivation rather than intrinsic (usually career or self-expression) orientation to work. Mothers who could find no flexibility in the work place and who had little support at home experienced severe psychological reactions as a result of putting "family first, work second and self last".

Study 3 integrated the findings of Study 1 and Study 2 with the literature on time use and satisfaction, topics that play key roles in work/family research. The primary aim was to identify the variables that mediate the associations between lone and partnered mother with and without employment. The results showed that the mental health of lone mothers without employment is significantly compromised in comparison to other mothers. Their

poorer mental health was maintained over a three-year period. Poorer mental health was due to their higher levels of stress, life events and possibly to their desire to do work. In a separate set of analyses the variables that distinguish lone from partnered mothers were explored. Finally this study identified the variables that were related to mental health among all young women, irrespective of partner status or employment. The need to do less work was highly correlated with mental health, adding credence to the results of the qualitative study. This association was explained by stress.

Overall this study demonstrates the complex nature of managing work and motherhood among contemporary young Australian women. Policies that provide opportunities for flexible working arrangements when family context demands it and appropriate consideration of the gendered nature of motherhood and work, are required. Public health can contribute in a number of ways including advocating for and/or undertaking formal health impact assessment of policies that concern mothers and work, particularly lone mothers. Social epidemiology could consider the interaction of the three primary roles as a social gradient with the same vigour with which it investigates indicators of social and economic status.

# Childlessness in Australian women: by choice?

Candidate: Heather McKay

Degree: PhD

University: School of Public Health, The University of Melbourne.

Supervisor: A/Professor Jane Fisher.

In Australia, as in other industrialised countries, rates of childlessness amongst women are rising. This has been attributed, in part, to a rise in the number of women choosing never to give birth; however, women's perception of what constitutes choice in remaining childless is under-investigated. The aim of this study was to investigate Australian women's experience of childlessness at mid age and explore the role of choice in this reproductive outcome. It investigated the determinants of childlessness, considered the consequences of never giving birth, and explored how choice affects childless women's evaluation of non-motherhood. A cross-sectional study of the experience of never giving birth was conducted, which comprised two components. The minor component was a secondary analysis of survey data (collected in 1996) from the Australian Longitudinal Study on Women's Health (ALSWH) project. ALSWH is a longitudinal study which recruited a nationally representative sample of 14,099 women born between 1946 and 1951. These women are amongst the first to have lived all their reproductive lives since the introduction of the oral contraceptive. This study compared demographic characteristics, self-rated health, and life satisfaction between 1,069 mid-aged childless women (exclusive of known adoptive and step-mothers) and 12,643 of their peers who are mothers. It was found that at mid-age, childless women have higher levels of education and are more extensively engaged in the paid workforce than mothers, however, there were no differences in health status between mothers and childless women. Life satisfaction differences between the two groups are complex and

mediated by marital status. The major component of the investigation was a survey (October 2002) completed by 426 women who had never had children and who were all participants in the 1946-51 cohort of the ALSWH. This component investigated the determinants of childlessness, the role of choice, and the experience of non-motherhood. In contrast to existing studies into childlessness, this large quantitative investigation has a sample which comprises a broad selection of women who have never given birth to a child, irrespective of their marital status, medical history, or level of choice in never giving birth. Using an original classification system, women were categorised into three childless groups which describe three levels of choice in never giving birth: 37.1% of respondents chose childlessness actively (Active Choice), 15.4% chose childlessness given their personal circumstances (Constrained Choice), and 47.5% felt denied the opportunity to give birth (Denied Choice). The predominant reason for childlessness among the Active Choice women was not experiencing a strong 'maternal instinct', the Denied Choice group mainly cited infertility or the lack of a husband/partner, whilst the Constrained Choice group gave a mixture of voluntary and involuntary explanations. This study developed a balance sheet approach to assessing both the positive and negative aspects of non-motherhood – the Consequence of Childlessness Balance Sheet (CCBS). It also introduced a technique for measuring ambivalence that was developed within social psychology. In contrast to the public discourse that depicts childlessness as a negative life outcome, participants in this study gave a favourable evaluation of their lives. Even so, more than half (55.6%) of the participants experienced moderate levels of ambivalence. Comparisons between the three childless groups revealed that as choice increased participants were more likely to give a higher rating to the positive aspects of their lives, a lower rating to the negative ones, and experience lower levels of ambivalence. However, Denied Choice women generally did not find childlessness a devastating experience. Therefore, amongst the participants in this study the experience of childlessness was complex and diverse, varying with the level of choice women had in never giving birth. Childlessness was not, however, a burdensome or detrimental life outcome for these women.





# Your bloomin' lot: An empirical study of the popular baby boomer stereotype

Candidate: Meredith Tavener

Degree: PhD

University: School of Medicine and Public Health, Faculty of Health, University of Newcastle

Supervisors: Professor Julie Byles, Dr Penny Warner-Smith & Dr Deborah Loxton

This research focused on women born during the post-World War II baby boom period, and asked the questions:

- a. Does a popular stereotype exist regarding baby boomers?
- b. What features characterise the stereotype?
- c. To what extent does the stereotype apply to a sample of Australian women born during the post-War baby boom period?

The thesis contended that if a popular stereotype did exist, it would relate to a minority of baby boomers. This study involved:

1. Development of key criteria which characterised the popular baby boomer stereotype
2. Testing stereotypic repertoires against scholarly expertise and a sample of baby boomer women
3. Describing the characteristics and behaviours of women who did and did not meet the popular stereotype, and exploring issues of social identity through narrative analysis.

110 newspaper articles and 54 images from two Australian newspapers were reviewed, and were found to show selective repertoires when describing people born during the post-war baby boom. Key criteria of a baby boomer stereotype were identified and tested by interviewing experts and surveying 900 mid-aged women from the Australian Longitudinal Study on Women's Health. In-depth exploration of baby boomer reality, as opposed to rhetoric, revealed marked differences within the baby boomer cohort, and this led to the development of four baby boomer categories, based on self-reported levels of health and material comfort versus levels of disadvantage. Analysis of free text comments of baby boomers revealed feelings of isolation and aloneness, financial difficulties, uncertainty about the future, and health worries - findings that differed from the popular stereotype.

Evidence from this research into baby boomers suggests that the popular stereotype may apply only to a minority. A great number and variety of differences existed, which need to be acknowledged.





# ENQUIRIES

## University of Newcastle

**Dr Deborah Loxton**

**Deputy Director**

Australian Longitudinal Study on Women's Health  
Priority Research Centre for Gender, Health & Ageing  
University of Newcastle  
Callaghan NSW 2308  
AUSTRALIA

T +61-2-4913 8872

F +61-2-4913 8888

E [whasec@newcastle.edu.au](mailto:whasec@newcastle.edu.au)

## University of Queensland

**Dr Leigh Tooth**

**Project Co-Ordinator**

Australian Longitudinal Study on Women's Health  
School of Population Health  
University of Queensland  
Herston QLD 4006  
AUSTRALIA

T +61-7-3346 4691

F +61-7 3365 5540

E [sph-wha@sph.uq.edu.au](mailto:sph-wha@sph.uq.edu.au)

## Data Archiving

The Australian Longitudinal Study on Women's Health has a policy to archive the ALSWH data with the Australian Social Sciences Data Archive (ASSDA) at the Australian National University on an annual basis. To date, data have been archived for Surveys 1, 2, 3 and 4 of the 1973-78 cohort. Data from Surveys 1, 2, 3, 4 and 5 have been archived for the 1921-26 and 1946-51 cohorts.

**[www.alswh.org.au](http://www.alswh.org.au)**

A detailed description of the background, aims, themes, methods, representativeness of the sample and progress of the study is given on the project web page. Copies of surveys are also available on the website, along with contact details for the research team, abstracts of all papers published, papers accepted for publication, and conference presentations.

[www.alswh.org.au](http://www.alswh.org.au)