women's health australia

the australian longitudinal study on women's health

Annual Report 2006

ISSN: 2653-3227

The University Of Queensland AUSTRALIA

The University of Newcastle AUSTRALIA

Contents

Director's Report

The Australian Longitudinal Study on Women's Health is now in its eleventh year. It is funded by the Australian Government Department of Health and Ageing and involves around 40,000 women in three age cohorts, selected from the Australian population. We expect to follow each woman for over twenty years to track changes in health and life circumstances as they move through major life transitions. The information from the study is used to provide evidence to develop and evaluate policies that will lead to better health for all Australians.

This year we surveyed the Younger cohort for the fourth time. Now aged 28 to 33 years, many of these women have had a baby since they last filled out a survey. We are looking forward to hearing more about this exciting and challenging time in their lives.

With the completion of the fourth survey for Young women we have now surveyed all the cohorts four times – a very important milestone for us.

However, there is never time to celebrate for long as we have been working hard to prepare and pilot the fifth survey for Mid-aged women which will be conducted next year in 2007 when the women are aged 56-61. Many of these women will be approaching the end of their working lives and thinking about planning for retirement.

An important achievement this year has been the completion of a comprehensive report on chronic conditions, risk factors and health behaviours for all age cohorts. We focused on heart disease, hypertension, osteoporosis, diabetes, asthma and arthritis and explored prevalence and incidence rates over time. We also examined the characteristics of women with different conditions, and most importantly we asked what long-term effects risk factors have on women's health.

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, there are a number of additional projects underway, specifically examining retirement issues and the relationship between paid employment and caring for someone with a long-term illness or disability.

Our aim is to continue to conduct world-class scientific research that informs policy development in Australia and internationally.

As we gather more and more information about women's health, there are more and more opportunities to answer important questions about how to best sustain women's health in the future. I would like to thank the Australian Government Department of Health and Ageing for their continuing support of this study, and to particularly 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 2006

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 Julie Byles

BMed, PhD

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

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

Professor Wendy Brown

BSc(Hons), DipEd, MSc, PhD

School of Human Movement Studies
University of Queensland

Emeritus Professor Lois Bryson

BA, DipSocStud, DipEd, PhD

Research Centre for Gender, Health & Ageing
University of Newcastle

Professor Christina Lee

BA, PhD, FAPS

Head, School of Psychology
University of Queensland

Dr Deborah Loxton

BPsych(Hons), PhD

Project Manager, Australian Longitudinal Study on Women's Health

Research Centre for Gender, Health & Ageing
University of Newcastle

Dr Jayne Lucke

BA(Hons), PhD

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

School of Population Health
University of Queensland

Dr Leigh Tooth

BOccThy(Hons), PhD

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

School of Population Health
University of Queensland

Dr Penny Warner-Smith

BA, DipEd, MEd, PhD

Research Centre for Gender, Health & Ageing
University of Newcastle

Dr Anne Young

BMath(Hons), DipMedStat, PhD, AStat

Project Statistician, Australian Longitudinal Study on Women's Health

Research Centre for Gender, Health & Ageing
University of Newcastle

Collaborators & Investigators 2006

Dr Jon Adams
School of Population Health, University of Queensland

Professor Osvaldo Almeida
Old Age Psychiatry, University of Western Australia

Dr Kaarin Anstey
Centre for Mental Health Research, Australian National University

Professor Jill Astbury
School of Psychology, Victoria University

A/Professor Siobhan Austen
School of Economics and Finance, Curtin University of Technology

Dr Adrian Barnett
School of Population Health, University of Queensland

A/Professor Garry Barrett
School of Economics, University of New South Wales

Dr Kylie Ball
Centre for physical activity and nutrition research, Deakin University

Dr Deborah Bateson
Family Planning Australia Health

Professor Adrian Bauman
School of Community Medicine, University of New South Wales

A/Professor Martin Bell
School of Geography, Planning and Architecture, University of Queensland

Professor Andrew Bisets
School of Medicine and Population Health, University of Newcastle

A/Professor Michael Bittman
Social Policy Research Centre, University of New South Wales

A/Professor Jenny Bowman
School of Behavioural Sciences, University of Newcastle

Dr Bruce Bradbury
Social Policy Research Centre, University of New South Wales

Professor Peter Brown
Centre for Work, Leisure and Community Research, Griffith University

Dr Steven Bunker
National Heart Foundation of Australia (Victoria Division)

Dr Nicola Burton
School of Human Movement Studies, University of Queensland

Dr Jim Butler
National Centre for Epidemiology and Population Health, Australian National University

A/Professor Gerard Byrne
Department of Psychiatry, University of Queensland

A/Professor Christopher Carpenter
The Paul Merage School of Business, University of California

Ms Ester Cerin
School of Population Health, University of Queensland

Dr Pauline Chiarelli
Discipline of Physiotherapy, University of Newcastle

Ms Susan Clemens
Turning Point Alcohol and Drug Centre, Melbourne

Dr Mark Clements
National Centre for Epidemiology and Population Health, Australian National University

A/Professor Deborah Cockrell
School of Health Sciences, University of Newcastle

Dr Clare Collins
School of Nutrition and Dietetics, University of Newcastle

Mr Kim Colyvas
School of Mathematical and Physical Science, University of Newcastle

A/Professor Robert Conlon
School of Economics, University of New South Wales

Ms Jan Currie
School of Economics and Finance, Curtin University of Technology

A/Professor Catherine D'Este
School of Population Health, University of Queensland

Ms Xenia Dolja-Gore
Research Centre for Gender, Health and Ageing, University of Newcastle

Dr Janine Duke
Centre for Clinical Epidemiology and Biostatistics, University of Newcastle

Ms Jane Estoesta
Family Planning New South Wales

Dr Christine Everingham
School of Social Sciences, University of Newcastle

Professor Kathleen Fahy
Nursing and Midwifery, University of Newcastle

Professor Denzil Fiebig
School of Economics, University of New South Wales

Dr Jane Fisher
Key Centre for Women's Health in Society, University of Melbourne

Ms Jane Fletcher
Centre for Behavioural Research in Cancer, Cancer Control Research Institute, The Cancer Council of Victoria

Professor Leon Flicker
School of Medicine and Pharmacology, University of Western Australia

A/Professor Manohar Garg
School of Nutrition and Dietetics, University of Newcastle

Dr John Germov
School of Humanities and Social Science, University of Newcastle

Mr Richard Gibson
Research Centre for Gender, Health and Ageing, University of Newcastle

Dr Peter Gibson
Hunter Medical Research Institute

Professor Graham Giles
Cancer Epidemiology Centre, Cancer Council Victoria

Professor Jane Hall
Centre for Health Economic Research and Evaluation, University of Technology Sydney

Professor Graeme Hankey
Royal Perth Hospital

Ms Margaret Hansford
Family Planning Australia Health

Dr Kristiann Heesch
School of Human Movement Studies, University of Queensland

Professor David Henry
School of Medicine and Public Health, University of Newcastle

Ms Trish Hill
Social Policy Research Centre, University of New South Wales

Dr Lynne Hiller
Australian Research Centre in Sex, Health and Society

Dr Allison Hodge
Cancer Epidemiology Centre, Cancer Council of Victoria

A/Professor Paul Hodges
School of Health and Rehabilitation Sciences, University of Queensland

Ms Philomena Horsley
Australian Research Centre in Sex, Health and Society, La Trobe University

Dr Rafat Hussain
School of Health, University of New England

A/Professor Duncan Ironmonger
Department of Economics, University of Melbourne

Collaborators continued....

Professor Konrad Jamrozik
Division of Health Systems, Policy and Practice, University of Queensland

Professor Peter Jones
University Department of Rural Health, University of Newcastle

A/Professor Anne Kavanagh
Key Centre for Women's Health in Society, University of Melbourne

Dr Margaret Kelaher
Key Centre for Women's Health in Society, University of Melbourne

A/Professor Justin Kenardy
School of Psychology, University of Queensland

Dr Gerard Kennedy
School of Psychology, Victoria University

Mr Asad Khan
School of Health, University of New England

Dr Natasha Koloski
School of Psychology, University of Queensland

Dr Robert Lajeunesse
School of Economics, Politics and Tourism, University of Newcastle

Mr Ha Duy Lao
School of Economics, Politics and Tourism, University of Newcastle

A/Professor Ann Larson
Combined Universities Centre for Rural Health, University of Western Australia

Professor Debbie Lawlor
Epidemiology and Public Health Medicine, University of Bristol

Ms Sharon Leigh
Australian Institute of Health and Welfare

Dr Julia Lowe
School of Medical Practice and Population Health, University of Newcastle

Professor Judith Lumley
Centre for Mothers and Child Health Research, La Trobe University

Dr Kevin Lyons
School of Economics, Politics and Tourism, University of Newcastle

Did you know?

ALSWH has over 120 current collaborators from over 30 national and international universities and institutions

Dr Lesley Macdonald-Wicks
School of Nutrition and Dietetics, University of Newcastle

Dr Lynette Mackenzie
School of Occupational Therapy, University of Newcastle

Dr Alison Marshall
School of Human Movement Studies, University of Queensland

Ms Sushma Mathur
Australian Institute of Health and Welfare

Ms Sharon Matthews
Turning Point Alcohol and Drug Centre, Melbourne

Dr Ruth Mcnair
Department of General Practice, University of Melbourne

Ms Cynthia Millar
Centre for Clinical Epidemiology and Biostatistics, University of Newcastle

Dr Yvette Miller
School of Human Movement Studies, University of Queensland

A/Professor Gita Mishra
University College London, UK

Ms Lynelle Moon
Australian Institute of Health and Welfare

Dr Stephen Morrell
Family Planning New South Wales

Professor Jake Najman
Queensland Alcohol and Drug Research and Education Centre, University of Queensland

A/Professor Paul Norman
School of Surgery and Pathology, University of Western Australia

Dr Sue Outram
School of Medical Practice and Population Health, University of Newcastle

Dr Nancy Pachana
School of Psychology, University of Queensland

Ms Bonny Parkinson
Access Economics Pty Ltd

Dr Lynne Parkinson
Research Centre for Gender, Health and Ageing, University of Newcastle

Dr Amanda Patterson
Department of Nutrition and Dietetics, Kings College London

Ms Elizabeth Penm
Australian Institute of Health and Welfare

A/Professor Susan Quine
School of Public Health, University of Sydney

Dr Christina Read
Family Planning Australia Health

Dr Prasuna Reddy
Department of Psychology, University of Melbourne

Mr Ian Robinson
Research Centre for Gender, Health and Ageing, University of Newcastle

Ms Penelope Robinson
School of Humanities and Social Sciences, University of Newcastle

Dr Kristy Sanderson
Menzies Research Institute, University of Tasmania

Mr Geoffrey Sayer
Access Economics Pty Ltd

Professor Margot Schofield
School of Public Health, La Trobe University

Ms Susana Senes
Australian Institute of Health and Welfare

Dr David Sibbritt
Centre for Clinical Epidemiology and Biostatistics, University of Newcastle

Professor Roger Smith
Mothers and Babies Research Centre, The University of Newcastle

Ms Michelle Smith
School of Health and Rehabiliation Sciences, University of Queensland

Mr Christopher Stevenson
Australian Institute of Health and Welfare

Dr Deborah Stevenson
School of Social Sciences, University of Newcastle

Dr Angela Taft
Centre For Mothers and Child Health Research, La Trobe University

Ms Meredith Tavener
Centre for Clinical Epidemiology and Biostatistics, University of Newcastle

Dr Ann Taylor
School of Humanities and Social Sciences, University of Newcastle

A/Professor Catrine Tudor-Locke
Department of Exercise and Wellness, Arizona State University

A/Professor Cathy Turner
School of Nursing, University of Queensland

Mr Bernard Van Den Berg
Centre for Health Economics, Research and Evaluation, University of Technology Sydney

Dr Jolieke Van Der Pols
School of Population Health, University of Queensland

Dr Mireille Van Poppel
Department of Public and Occupational Health, VU University Medical Center Amsterdam

Tracey Wade
School of Psychology, Flinders University

Dr Jeni Warburton
School of Social Work and Applied Human Sciences, University of Queensland

Ms Lyndsey Watson
Mother and Child Health Research, La Trobe University

Dr Edith Weisberg
Family Planning Australia

Dr Lauren Williams
School of Nutrition and Dietetics, University of Newcastle

Professor Andrew Wilson
School of Population Health, University of Queensland

Current Students 2006

PhD Students

Steven Bowe
University of Newcastle
Supervisors: Dr David Sibbritt & Dr Anne Young

Cate France
University of Newcastle
Supervisors: Professor Christina Lee & Dr Sue Outram

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

Lisa Hallsworth
Flinders University
Supervisor: Dr Tracey Wade

Lindy Humphreyes-Reid
University of Queensland
Supervisors: Professor Annette Dobson & Professor Andrew Wilson

Alexis Hure
University of Newcastle
Supervisors: Dr Clare Collins & Professor Roger Smith

Melissa Johnstone
University of Queensland
Supervisor: Professor Christina Lee

Rosemary Korda
Australian National University
Supervisors: Dr Jim Butler & Dr Mark Clements

Beverley Lloyd
University of Sydney
Supervisors: Professor Christina Lee & A/Professor Susan Quine

Liane McDermott
University of Queensland
Supervisors: Professor Neville Owen & Professor Annette Dobson

Heather McKay
University of Melbourne
Supervisors: Dr Jane Fisher & Professor Christina Lee

Afsoon Hassani Mehraban
University of Newcastle
Supervisor: Professor Julie Byles & Dr Lynette Mackenzie

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

Siobhan O'Dwyer
University of Queensland
Supervisors: Professor Wendy Brown, Dr Julia Lowe & Dr Nancy Pachana

Catherine Regan
University of Newcastle
Supervisors: Professor Julie Byles & Dr David Sibbritt

Gabrielle Rose
University of Queensland
Supervisors: Professor Annette Dobson, Professor Jake Najman & Professor Lenore Manderson

Ingrid Rowlands
University of Queensland
Supervisors: Professor Christina Lee & Dr Nancy Pachana

Nadine Smith
University of Queensland
Supervisors: Professor Annette Dobson & Dr Nancy Pachana

Doctorate of Psychology Students

Leah Collins
University of Queensland
Supervisors: Dr Prasuna Reddy, Dr Steven Bunker and Ms Jane Fletcher

Christopher Hart
University of Queensland
Supervisor: Dr Nancy Pachana

Carmen Tang
University of Queensland
Supervisor: Dr Nancy Pachana

Masters of Health Psychology Student

Toni Lindsay
University of Newcastle
Supervisors: Dr Deborah Loxton & A/Professor Jenny Bowman

Honours Student

Vineta Salale
University of New South Wales
Supervisors: Professor Denzil Fiebig, Professor Jane Hall & Dr Anne Young

Congratulations to our successful graduates for 2006

Karen Furlong
Masters of Public Health
University of Queensland

“Epidemiology of osteoporosis in Australian women”

Supervisor: Dr Nancy Pachana

Elizabeth Knock
Bachelor of Psychology (Honours)
University of Newcastle

“An analysis of the comorbidity between anxiety and depression”

Supervisors: Dr Deborah Loxton & A/Professor Jenny Bowman

Sally Price
Doctor of Psychology (Clinical and Clinical Neuropsychology)
University of Queensland

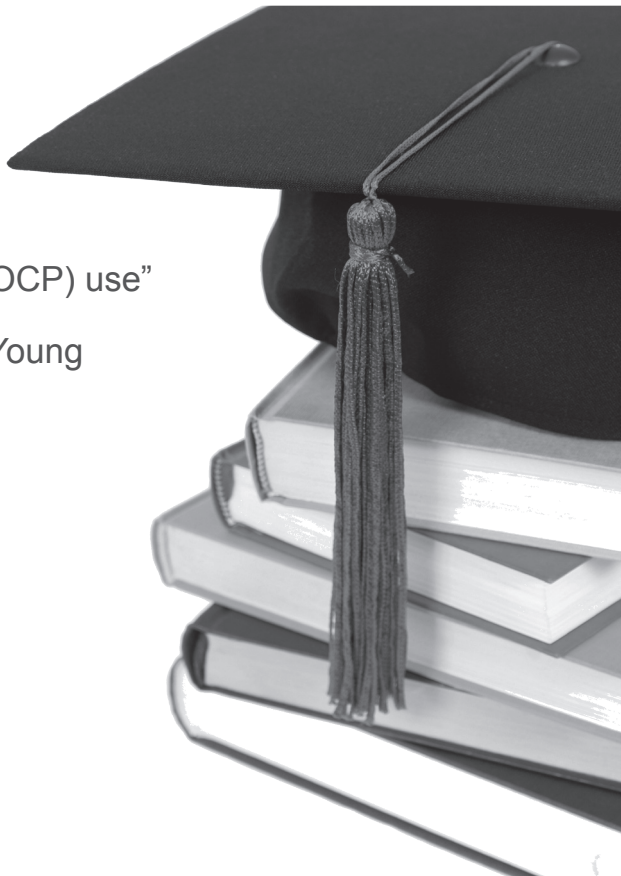
“Carers and psychosocial correlates across time: A longitudinal analysis”

Supervisor: Dr Nancy Pachana

Angela Wood
Masters of Applied Statistics
Macquarie University

“A longitudinal analysis of Oral Contraceptive Pill (OCP) use”

Supervisors: A/Professor Gillian Heller & Dr Anne Young



Project Staff 2006

Members of Staff of the University of Queensland

School of Population Health, University of Queensland

Project Director
Professor Annette Dobson

Project Coordinators
Dr Jayne Lucke

Dr Leigh Tooth

Senior Project Officer
Ms Anne Russell

Project Officer
Ms Bree Waters

Data Manager
Mr Calvin Wang

Research Assistants/Statisticians
Ms Gretchen Carrigan

Mr David Fitzgerald

Mr Richard Hockey

Ms Melanie Spallek

Research Technicians
Ms Eliza Fraser

Ms Nadine Smith

Administration Officers
Ms Cherie Harris

Ms Maree O'Mullane

Ms Leonie Gemmell

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

Project Co-Director
Professor Julie Byles

Project Manager
Dr Deborah Loxton

Project Statistician
Dr Anne Young

Statistician
Ms Jenny Powers

Assistant Statistician
Mr Andrew Hampson

Data Manager
Mrs Anna Graves

Data Assistants
Mrs Penny Knight
Mr Daniel Odd

Publicity Officer/Executive Officer
Mrs Lyn Adamson

Administration Officer
Mrs Melanie Moonen

Designer
Mr Timothy Neve

Research & Communications Officer
Mrs Catherine Chojenta

Research Assistants
Ms Rosie Mooney
Ms Jenny Helman
Ms Jodie Ryan

Part-time Project Assistants
Ms Liz Knock
Ms Ingrid O'Neill
Ms Monica O'Neill
Ms Amy Sales
Ms Jackie Sales
Ms Gaye Sheather
Ms Lauren Thoroughgood
Ms Angela Walker
Ms Claire Wilkinson

Members of Staff of the University of Newcastle

Trends in Women's Health:
Chronic Conditions, Risk Factors & Health Behaviours

How has women's health changed since 1996? As women become older they may develop any of a number of chronic conditions such as hypertension, heart disease, diabetes, asthma, osteoporosis, and arthritis. How many women suffer from these diseases, and is there anything that can be done to help women stay healthy as they get older? Data from the Australian Longitudinal Study on Women's Health can be used to answer these important questions.

How many women have chronic diseases?

HYPERTENSION is uncommon among the Younger women with less than 10% having hypertension, although there was an increase over time (see Figure 1). It was most common among the Older women. Over 60% had hypertension by Survey 3 when they were aged 76-81 years. There was a steep increase in the number of Mid-aged women with hypertension over time. Around 20% had hypertension at Survey 1 in 1996, but by Survey 4 in 2004, when they were aged 53-58 years, almost a third of the Mid-aged women had hypertension.

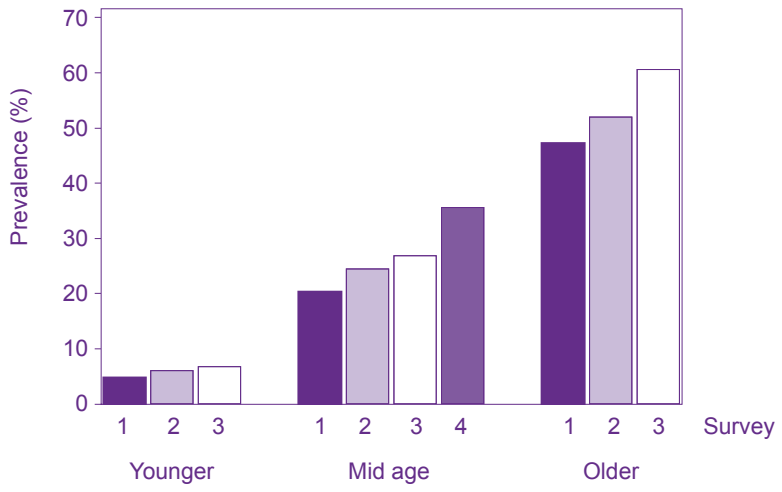


Figure 1: Percentage of women with hypertension in each cohort by survey.

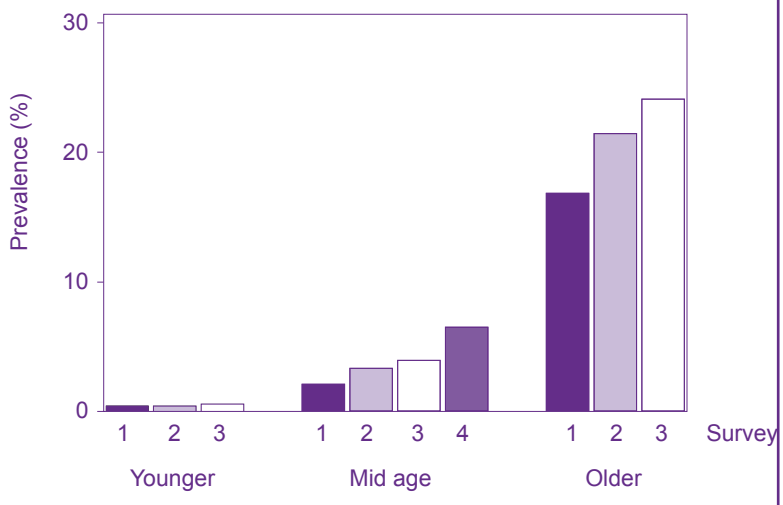


Figure 2: Percentage of women with heart disease in each cohort by survey.

HEART DISEASE is rare among Younger women with less than 5% reporting the condition (see Figure 2). The number of Mid-aged women with heart disease increased steadily from Survey 1 to nearly 7% by Survey 4. Heart disease was more common in the Older cohort with 17% of the women having heart disease at Survey 1 when they were 70-75 years of age. This figure increased to almost 1 in 4 women at Survey 3.

DIABETES increased steadily with age (see Figure 3). Among Younger women, 1% had diabetes at Survey 1 increasing to 2% at Survey 3. Less than 3% of the Mid-aged women had diabetes at Survey 1, but this figure increased to 8% by Survey 4. In comparison, 9% of the Older women had diabetes at Survey 1 compared to 12% at Survey 3. It is concerning that the Mid-aged women aged 53-58 had levels of diabetes approaching those of the Older aged women aged 76-81.

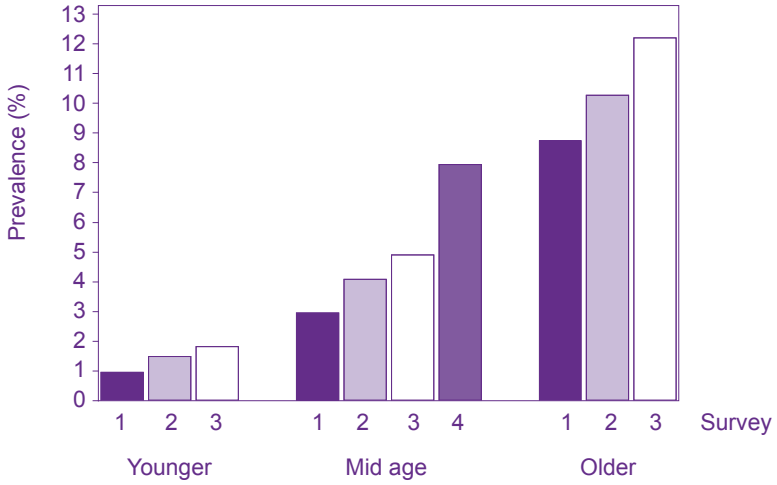


Figure 3: Percentage of women with diabetes in each cohort by survey.

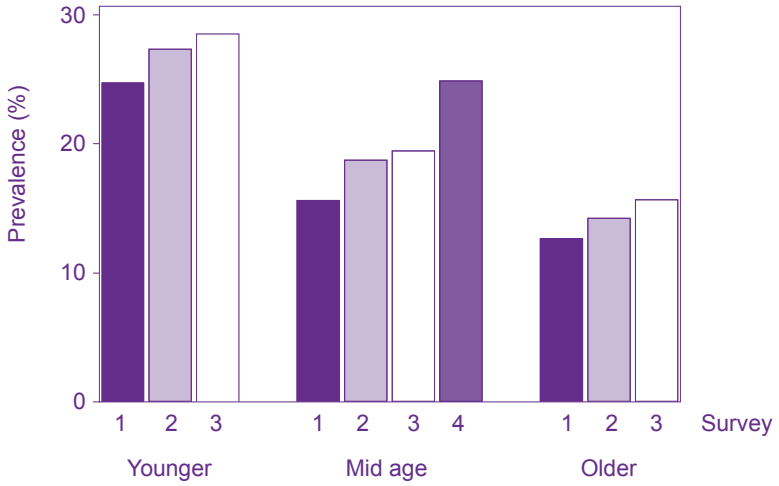


Figure 4: Percentage of women with asthma in each cohort by survey.

The pattern for **ASTHMA** was complicated because it was most common among Younger women and least common among Older women (see Figure 4). However, the proportion of women with asthma increased for each cohort with each Survey. There may be a number of reasons for this pattern, such as differences in the underlying risk of asthma for different age groups, because younger women may be more likely to be diagnosed with asthma, whilst older women may be diagnosed with other respiratory problems.

OSTEOPOROSIS increased markedly among Older women with 21% at Survey 1 rising to 32% at Survey 3 (see Figure 5). Osteoporosis increased among Mid-age women too, although fewer women were affected. Four percent of Mid-aged women had osteoporosis at Survey 1 and 12% had it at Survey 4. Women must have their bone density tested to know if they have osteoporosis and this testing may be more readily available in urban areas. Younger women were not asked about osteoporosis.

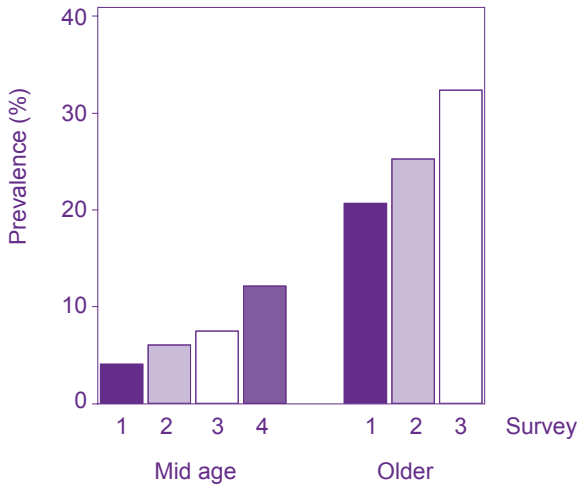


Figure 5: Percentage of women with osteoporosis in each cohort by survey.

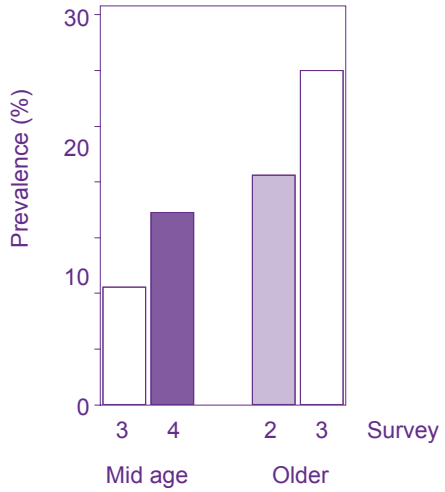


Figure 6: Percentage of women with arthritis in each cohort by survey.

ARTHRITIS was the second most common condition affecting women in the study after hypertension. Figure 6 shows that at Survey 3, 1 in 5 Mid-aged women and almost 2 out of 3 Older women had arthritis. More than 1 in 3 Mid-aged women had arthritis at Survey 4. Younger women were not asked about arthritis

Younger Women:
How Does Early Life Affect Health?

Body Mass Index (BMI) was the most important factor related to chronic disease among the Younger Women. When they were first surveyed, 1 in 10 was underweight and 1 in 5 was overweight. However, as they grew older, overweight became more common. Young women with high BMI were more likely to have hypertension, diabetes and asthma.

Young women who smoked were more likely to have hypertension and diabetes. Fortunately the proportion of smokers in the Younger cohort has decreased over time with fewer than 1 in 4 smoking at Survey 3 compared with 1 in 3 at Survey 1. Asthma was more common among Younger women with lower levels of education.

Neither the level of physical activity nor the level of alcohol consumption was related to the risk of chronic disease among the Younger women. Most of the Younger women were in fact not drinking at high risk levels, and their activity levels were reasonably high.

"I am generally feeling a lot happier about my health. I've quit smoking after approximately 10 years. On the other hand I have put on almost 10 kilos. I hate this. I never had to worry about weight. I have a horrible stomach. My clothes don't fit me. My self image is YUK. I know that I really need to exercise to maintain my weight, however this is a habit I am having trouble starting. Overall the positives I have done for my health do very much outweigh (joke) the negatives."

Younger participant, Survey 3

Mid-aged Women:
How Can Women Reduce Their Risk of Chronic Disease?

The Mid-aged cohort is the most overweight group of women in the Study with around 2 in 3 women being classified as overweight or obese at the time of Survey 4. A high BMI was related to the risk of having or developing hypertension, heart disease, diabetes, asthma, osteoporosis and arthritis.

Lack of physical activity was an important risk factor for hypertension, heart disease and asthma. There was some evidence that activity levels have increased among the Mid-aged women. At Survey 3, 46% of the women were getting sufficient physical activity for health benefits and the most common activity was walking. However, 16% of Mid-aged women did no physical activity other than house or yard work and this is not enough to protect against chronic disease. Increasing physical activity is an important health preventive behaviour at all life stages, but the benefits are particularly obvious in mid-life.

"In May 2003 I was diagnosed with diabetes. So I am now on medication and I am exercising more now. Walking, cycling, exercise biking and playing more tennis - which I love. Also I pay more attention to my diet."

Mid-aged participant, Survey 4

Smoking was associated with heart disease, diabetes, asthma and arthritis among the Mid-aged women. 13% of Mid-aged women were smokers and there were few changes in smoking over time.

There was a U-shaped association between alcohol consumption and risk of hypertension and asthma, meaning, that both women who did not drink and high drinkers had more risk of disease than women who consumed alcohol at moderate levels. Non-drinkers among the Mid-aged women were more likely to have diabetes and heart disease. This finding could be affected to some extent if women who developed these conditions subsequently gave up drinking.

"Since giving up smoking, I've got more involved in walking and exercise, therefore my health has improved greatly. Although I lost my mum recently I feel because I don't smoke anymore, I have been able to deal with her death much calmer than I would have if I had still been smoking."

Mid-aged participant, Survey 4

Older Women:
How Can Women Keep Well As They Become Older?

BMI, physical activity, alcohol use and education level were important factors in chronic disease among the Older women. In comparison with Mid-aged women, smoking was not an important risk factor because most of the Older women were non-smokers.

As with the Mid-aged women, the Older women showed a U shaped relationship between alcohol consumption and hypertension and asthma. Also in this cohort, non-drinkers were most likely to have hypertension, heart disease and diabetes.

Low levels of physical activity were associated with having hypertension, heart disease, diabetes, asthma, osteoporosis and arthritis. Levels of physical activity decreased as the women became older. At Survey 3, only about 1 in 3 women was sufficiently active, but nearly 40% were not doing any exercise.

"I am unable to do strenuous exercises but I still get on my motorised treadmill for 20 minutes every day. My health hasn't changed a great deal except extra medication for BP. I have slowed down with my activities such as golf, gardening etc. I still walk early morning three times a week for one hour."

Older participant, Survey 3

In Conclusion

Being overweight is the most important risk factor for chronic disease in women at all ages. Women who are overweight are more likely to have hypertension, heart disease, diabetes, osteoporosis and asthma. In comparison none of the other risk factors showed such consistent and strong associations with chronic conditions.

It is worrying that women in all three age groups are getting heavier. However, it is most concerning that if the trends towards weight gain continue among the Younger women, weight will be an even greater problem for them in mid-age than for the current Mid-aged women in the study. Average weight gain in Younger women is around 700 grams a year compared with an average 500 grams a year in Mid-aged women. Weight gain clearly poses a major threat to the health of Australian women.

"7 weeks ago I decided I wasn't feeling healthy. So I joined a gym and they created an exercise program for me (I now go to the gym 6 times a week). I also changed my diet to reduce the junk food and sugar I was eating and increase the amount of fruit and vegetables and water I was consuming. I feel so much better. I feel fitter, look healthier, sleep better and my mood is better. As as a side effect I have lost 5 kgs."

Younger participant, Survey 3

Footnote: This report is summarised from Brown W, Byles J, Carrigan G, Dobson A, Dolja-Gore X, Gibson R, Hockey R, Powers J, Russell A, Spallek M & Young A. *Trends in Women's Health: Results from the Australian Longitudinal Study on Women's Health. Priority Conditions, Risk Factors and Health Behaviours*. Report prepared for the Department of Health and Ageing, October 2006.

The report can be viewed at *www.alswh.org.au/reports/other_reports.html*

Publications 2006

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 has been archived with the ASSDA for Surveys 1, 2, and 3 of the Younger, Mid-age and Older groups.

Adamson L & Parker G.
'There's more to life than just walking': Older women's ways of staying healthy and happy.
Journal of Aging and Physical Activity, 2006; 14: 380-391.

This study assessed a range of activities reported by older women in Australia. Women between 75 and 81 years of age (N = 3,955) from the older cohort of the Australian Longitudinal Study on Women's Health responded to a request in a self-report survey for additional information concerning their health. Of these 3,955 women, 509 reported taking part in a variety of activities. Qualitative analysis of responses identified 55 coded categories of activities that were subsequently classified into four major themes: physical activities, creative pursuits, lifestyle, and social interaction. The data show that these older women are taking part in a wide range of activities.

Ball K & Crawford D.
An investigation of psychological, social and environmental correlates of obesity and weight gain in young women.
International Journal of Obesity, 2006; 30: 1240-1249.

Objectives: This study explored the biological, psychological, social and environmental correlates of young women's current weight and retrospective 2-year weight change.

Method: A total of 790 young women (mean age 26.8 years), sampled from the Australian Longitudinal Study on Women's Health, provided self-reported data on their height and weight, sociodemographics and a range of biological, psychological, social and environmental variables.

Results: Several variables from all domains (biological, psychological, social support and environmental) were correlated with higher body mass index, and less strongly greater 2-year weight change. Key correlates included the tendency to never put on weight, no matter what; self-efficacy for avoiding weight gain, and for healthy eating; attention paid to weight; family support and friends' support/sabotage of physical activity/healthy eating; and perceived difficulty of taking the stairs rather than the elevator as part of the daily routine.

Conclusions: Intervention strategies aimed at reducing weight gain and obesity may need to focus on social and environmental, as well as psychological factors; however, further research is necessary to confirm these findings given that a number of hypothesized associations were not observed.

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

Objectives: Evidence on the relative influence of childhood versus adulthood socioeconomic conditions on obesity risk is limited and equivocal. The objective of this study was to investigate associations of several indicators of mothers', fathers' and own socioeconomic status, and intergenerational social mobility, with body mass index and weight change in young women.

Study design/setting: The study was a population-based cohort study involving mailed surveys completed in 1996 and 2000. Participants were 8756 women in the young cohort (aged 18-23 years at baseline) of the Australian Longitudinal Study on Women's Health. The women reported their height and weight, and their own, mother's and father's education and occupation.

Results: Multiple linear regression models showed that both childhood and adulthood socioeconomic status were associated with women's body mass index and weight change, generally in the hypothesized (inverse) direction, but the associations varied according to socioeconomic status and weight indicator. Social mobility was associated with body mass index (based on father's socioeconomic status) and weight change (based on mother's socioeconomic status), but results were slightly less consistent.

Conclusions: Results suggest lasting effects of childhood socioeconomic status on young women's weight status, independent of adult socio-economic status, although the effect may be attenuated among those who are upwardly socially mobile. While the mechanisms underlying these associations require further investigation, public health strategies aimed at preventing obesity may need to target families of low socio-economic status early in children's lives.

Bell S & Lee C.
Does timing and sequencing of transitions to adulthood make a difference? Stress, smoking and physical activity among young Australian women.
Social Science and Medicine, 2006; 13: 265-274.

The major changes of the transition to adulthood are argued to be stressful, and health-related behaviors such as smoking and physical activity may be adopted, consolidated, or abandoned at this time. On the other hand, research has suggested that the normative transitions of emerging adulthood, although involving considerable change, may be associated with low stress because they are perceived as both positive and normal at this life stage. This article examines relations between the timing and sequencing of life transitions and stress and health-related behaviors, focusing on the transition to young adulthood among Australian women. A total of 853 women ages 22 to 27 provided information about the timing and sequencing of 6 life transitions: moving out of the home, stopping full-time education, starting full-time work, having the first live-in relationship, marriage, and motherhood—and stress, smoking, and physical activity. Most had moved out of the home, stopped full-time education, and started full-time work, but only 14% had undertaken all 6 transitions. Overall, 70% of participants had made transitions "in order." Overall, the findings suggest that the relations between timing and sequencing of transitions, and indicators of health, are moderate for smoking, but small for stress and for physical activity. These effects remained after controlling for socioeconomic status of the participants' families of origin. Matching current social norms for the timing and sequencing of life changes may be of less importance for women's well-being than is commonly believed. Although the significant relations between early or "out of order" transitions and smoking are of concern, the smaller relations with stress and with sedentariness suggest that such transitions may have limited negative consequences, and support the view that individuals are active in choosing the life path that is appropriate for them and their circumstances.

Bowe SJ, Young AF, Sibbritt DW & Furuya H.
Transforming the SF-36 to account for death in longitudinal studies with three year follow-up.
Medical Care, 2006; 44(10): 956-959.

Background: Analyses of longitudinal health-related quality of life data often exclude participants who die, which limits the generalisability of the results. Methods to incorporate death as a valid score in the Medical Outcomes Study Short-Form (SF-36) have been suggested but need to be evaluated in other populations.

Objectives: We sought to apply a method of transforming the SF-36 Physical Component Score (PCS) to include death. A transformation to estimate the probability of being 'healthy' in 3 years, based on the current PCS value, will be developed and validated.

Subjects: Women in the Australian Longitudinal Study on Women's Health (ALSWH), aged 70-75 years at Survey 1 in 1996 (n=12432), followed-up at 3 yearly intervals for 6 years.

Results: The transformation derived from the ALSWH data provides evidence that the methodology for transforming the PCS to account for deaths is sound. The 3-year equation provided good estimates of the probability of being healthy in 3 years and the method allowed deaths to be included in an analysis of changes in health over time.

Conclusions: For longitudinal studies involving the SF-36 in which subjects have died, we support the recommendation that both the PCS and its transformed value which includes deaths should be analysed to examine the influence of deaths on the study conclusions. Using study data to derive empirical parameters for the transformations may be appropriate for studies with follow-up intervals of other lengths.

Byles J, Powers J, Chojenta C & Warner-Smith P.
Older women in Australia: Ageing in urban, rural and remote environments.
Australasian Journal on Ageing, 2006; 25(3): 151-157.

Objective: To explore differences in quality of life and health service use for older women living in urban, rural and remote areas of Australia.

Methods: 8387 women aged 70–75 years when enrolled in the Australian Longitudinal Study on Women's Health completed mailed surveys in 1996, 1999 and 2002.

Results: Women living in urban, rural and remote areas reported few differences in health and had similar changes in health-related quality of life (SF-36) over time. Most SF-36 subscale scores

declined over time, with steeper drops between the ages of 73–78 years and 76–81 years. The use of health services, need for informal care and provision of care to others increased over time. Urban participants used more general practitioner, specialist and allied health services, whereas nonurban women used more community services and alternative health practitioners.

Conclusion: Despite similar health problems, health service use differs significantly across urban, rural and remote areas of Australia.

Byles JE, Young AF, Furuya H & Parkinson L.
A drink to healthy ageing: The association between older women's use of alcohol and their health-related quality of life.
Journal of American Geriatrics Society, 2006; 54(9): 1341-1347.

Objectives: To assess the relationship between alcohol intake and mortality in a cohort of women aged 70 and older and to explore the relationship between level of alcohol use and changes in physical and mental health-related quality of life.

Design: National longitudinal surveys from 1996 to 2002.

Setting: Community based.

Participants: A national random sample of 12,432 Australian women aged 70 to 75 at baseline.

Measurements: Alcohol consumption was the factor of interest, and the main outcome measures were survival and health-related quality of life, with adjustment for potential confounders.

Results: Women who did not consume alcohol or who drank rarely were more likely to die (nondrinkers' hazard (HR)=ratio 1.94, 95% confidence interval (CI)=1.4–2.6; rare drinkers' HR=1.58, 95% CI=1.2–2.1) than women in the low-intake reference category (1–2 drinks per day, 3–6 days per week), or if they survived, they had lower health-related quality-of-life scores on the General Health and Physical Functioning subscales of the Medical Outcomes Study 36-item Short Form Survey after adjustment for smoking, comorbidity, education, body mass index, and area of residence. Nondrinkers also scored lower on the Mental Health and Social Functioning subscales.

Conclusion: Being a nondrinker of alcohol was associated with greater risk of death and poorer health-related quality of life. Results for other levels of intake were consistent with current Australian alcohol consumption recommendations for women and indicated that moderate alcohol intake may carry some health benefits for older women in terms of survival and quality of life.

Cwikel J, Gramotnev H & Lee C.
Never-married childless women: Health and social circumstances in older age.
Social Science and Medicine, 2006; 62(8): 1991-2001.

A growing proportion of women reach older age without having married or having children. Assumptions that these older women are lonely, impoverished, and high users of social and health services are based on little evidence. This paper uses data from the Older cohort of the Australian Longitudinal Study on Women's Health to describe self-reported demographics, physical and emotional health, and use of services among 10,108 women aged 73-78, of whom 2.7% are never-married and childless. The most striking characteristic of this group is their high levels of education, which are associated with fewer reported financial difficulties and higher rates of private health insurance. There are few differences in self-reported physical or emotional health or use of health services between these and other groups of older women. Compared with older married women with children, they make higher use of formal services such as home maintenance and meal services, and are also more likely to provide volunteer services and belong to social groups. Overall, there is no evidence to suggest that these women are a "problem" group. Rather, it seems that their life experiences and opportunities prepare them for a successful and productive older age.

Lee C & Gramotnev H.
Predictors and outcomes of early motherhood in the Australian Longitudinal Study on Women's Health.
Psychology, Health & Medicine, 2006; 11(1): 29-47.

Early motherhood is identified as a social problem, and having children at an early age is assumed to lead to psychological distress, welfare dependence and socio-economic disadvantage. Analysis of responses from 9,689 Young participants in the Australian Longitudinal Study on Women's Health was used to examine predictors and outcomes of early motherhood in Australia. Survey 1 (1996, aged 18-23) and Survey 2 (2000, aged 22-27), were used to categorize women as Childless, Existing Mothers (before Survey 1) and New Mothers (became mothers before Survey 2). Multivariate logistic regressions provided comparisons on socio-demographics, gynaecological variables, psychological wellbeing and health behaviours. Survey 1 data show that Existing Mothers experience socio-economic disadvantages and unhealthy lifestyles. However, those who will go on to become mothers earlier than their peers already experience similar

disadvantages. Further, the Survey 2 data show that, when these pre-existing disadvantages are controlled for, the additional deficits experienced by early mothers are relatively minor. Social disadvantage predisposes women to become mothers early, and to adopt unhealthy behaviours. However, young Australian women cope well with the challenges of early motherhood. In the longer term, unhealthy lifestyles and low education may lead to ill health and disadvantage, but early motherhood is not the initiator of this trajectory.

Lee C & Gramotnev H.

Motherhood plans among young Australian women: Who wants children these days?

Journal of Health Psychology, 2006; 11(1): 5-20.

Fertility rates in the developed world have been below replacement level for 25 years, prompting policy concerns relating to demographic changes. Commentary is driven by an assumption that low fertility results from deliberate, unconstrained choice by young women. This paper uses data from the Australian Longitudinal Study on Women's Health to examine this assertion. Data from 7,448 childless women aged 22 to 27 indicate that 9% of young women aspire to childlessness, with 72% wanting one or two children and 19% more. Those who aspire to childlessness appear uninterested in relationships with men, of low socio-economic status, and with lifestyles and aspirations focused around education leading to full-time work. Indicators of poor psychological functioning disappeared after adjustment for other variables. Women wanting one or two children expected to be in full- or part-time paid work in addition to motherhood. Women wanting many children generally had "traditional" lifestyles and aspirations. Most young women envisage a future in which they will need to negotiate both motherhood and paid work. If increasing fertility rates is seen as a valuable social goal, policy-makers need to consider strategies that support this.

Lee C & Gramotnev H.

Predictors and correlates of coping well with early motherhood in the Australian Longitudinal Study on Women's Health.

Psychology, Health & Medicine, 2006; 11(4): 411-424.

Women who become mothers at an early age are characterised by socio-economic disadvantage and unhealthy lifestyles; however, some cope extremely well. This paper describes Australian women who become mothers at an early age, in order to identify factors that predict coping. The younger cohort of the Australian Longitudinal Study on Women's Health was used to identify 1064 young women who became mothers between Survey 1 and Survey 2. These women were categorised on the basis of the Mental Health Index of the SF-36 as having High, Normal or Low mental health. Survey 1 data were used to examine predictors, and Survey 2 data to examine correlates, of mental health. Surprisingly, few socio-demographic or health-related variables predict level of coping with early motherhood. Women who would have High mental health as mothers were likely to be in paid work, had few symptoms, and had low levels of stress. They were least likely to have a history of miscarriage and most likely to use contraception. There were no significant effects for other socio-demographic factors, or health-related behaviours. In the longer term, however, all young mothers may suffer an increasing level of disadvantage and distress relative to their peers.

Loxton D, Mooney R & Young AF.

The psychological health of sole mothers in Australia.

Medical Journal of Australia, 2006; 184(6): 265-268.

Objectives: To determine the psychological wellbeing of sole mothers in Australia.

Study design/setting: Cross-sectional analyses of survey data from The Australian Longitudinal Study on Women's Health.

Participants: 9,689 younger women (aged 22–27 years) surveyed in 2000 and 12,338 mid-age women (aged 47–52 years) surveyed in 1998.

Main outcome measures: Demographic characteristics and economic status; prevalence of suicidal thoughts, self-harm, and psychoactive medication use; depression (Center for Epidemiologic Studies Depression Scale) and psychological health (the Mental Health Component Score of the Medical Outcome Short-Form Health Survey [SF-36]).

Results: Among the younger women, sole mothers were more likely than other women to have experienced suicidal thoughts (odds ratio [OR], 2.18; 95% CI, 1.45–3.27) and self harm (OR, 3.25; 95% CI, 1.97–5.38). Among the younger and mid-age women, sole mothers were the group most likely to have used medication for depression (ORs, 2.75 [95% CI, 1.76–4.30] and 2.29 [95% CI, 1.56–3.37], respectively). They were more than twice as likely to have experienced depression, and had significantly poorer psychological health ($P< 0.001$). After adjusting for economic status, only depression and psychological health remained significantly associated with sole motherhood, and the strength of these relationships was reduced.

Conclusions: Economic status partly accounts for the relatively poorer psychological health of sole mothers. Sole mothers are more likely than other

women to experience debilitating psychological health problems.

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

This study examines the psychological health correlates of domestic violence in a large random sample of mid-aged Australian women (N = 11,310; age 47 to 52 years). Logistic regressions were used to investigate the associations between domestic violence and depression, anxiety, and psychological well-being, after adjusting for demographic variables (marital status, income management, area). Results indicated increased odds of having experienced domestic violence for those who had: ever experienced a diagnosis of depression, anxiety, or an 'other' psychiatric disorder; recent symptoms of depression and anxiety; used psychoactive medication for depression or anxiety in the 4 weeks prior to the survey; and who reported current depression. Current psychological well-being had an inverse association with a history of domestic violence: As psychological well-being decreased, the odds of having ever experienced domestic violence increased. The results indicate that a history of domestic violence is associated with decreased psychological well-being in mid-aged Australian women.

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

The association between domestic violence and physical health in middle-aged Australian women is investigated via a cross-sectional survey of 14,100 women (45 to 50 years old) who responded to the first Australian Longitudinal Study on Women's Health survey. After adjustment for demographic and health behaviour characteristics and menopause status in multivariate analyses, various physical conditions (allergies or breathing problems, pain or fatigue, bowel problems, vaginal discharge, eyesight and hearing problems, low iron, asthma, bronchitis or emphysema, cervical cancer) were associated with domestic violence. The results highlight the link between health and domestic violence in middle-aged women and underscore the need for health professionals to take a full social history from women presenting with physical symptoms.

McDermott LJ, Dobson AJ & Owen N.
From partying to parenthood: Young women's perceptions of cigarette smoking across life transitions.
Health Education Research, 2006; 21(3): 428-429.

This study explored influences on adoption, maintenance and cessation of smoking among young women as they experienced life transitions: leaving home, gaining employment or attending college/university, marriage and parenthood. Standardized, open-ended telephone interviews were conducted with 80 women (including never smokers, continuing smokers, recent adopters and quitters) aged 24-29 years, recruited from participants in the Australian Longitudinal Study on Women's Health. The social context of smoking (socializing with other smokers, drinking alcohol and going to pubs and clubs) was perceived to be a predominant influence on smoking from the time young women left home until they settled into a committed relationship or started their own family. Stress was identified as an important factor as they experienced lifestyle changes. An increased sensitivity to the negative aspects of smoking after turning 21 was reported, and around the mid-20s the women became concerned about addictive nature of cigarettes. Motherhood was seen to carry increased responsibilities to protect children from passive smoking and there was a perceived importance of positive role modelling to protect children from becoming smokers themselves. This study highlights the need for public health campaigns to address the social role that smoking plays in young women's lives, and the perceived use of cigarettes for stress relief. Life changes such as settling down with a partner and the contemplations of motherhood provide opportunities for targeted interventions to promote quitting.

Miller-Lewis L, Wade T & Lee C.
Psychosocial risk factors for pregnancy risk-taking in young women in emerging adulthood: Evidence from the Australian Longitudinal Study on Women's Health.
Australian Journal of Psychology, 2006; 58(1): 17-30.

This study represents the first longitudinal investigation of distal psychosocial predictors of pregnancy risk-taking in young Australian women. Participants were from the Australian Longitudinal Study on Women's Health. Two mail-out surveys assessing sociodemographic, education/competence, psychosocial wellbeing, and aspiration/identity factors, were completed at ages 18 and 22 by 1647 young women in emerging adulthood, and a third survey assessing

pregnancy risk-taking behaviour was completed by a subsample of 90 young women at age 24. Higher psychosocial distress at age 22 was a risk factor for pregnancy risk-taking at age 24 (b= 0.29 – 0.38). Post hoc analyses suggested that the strongest component of psychosocial distress when predicting pregnancy risk-taking was higher depressive symptoms (b =0.44 – 0.68). Demographic, education, unemployment, and future aspirations factors at age 18 and 22 were unrelated to pregnancy risk-taking at age 24.

Outram S, Murphy B, & Cockburn J.

Prevalence of and factors associated with midlife women taking medicines for psychological distress.

The Australian e-Journal for the Advancement of Mental Health, 2006; 5(3): 1-13.

The aim of this study was to explore the extent of and factors associated with the use of medicines for psychological distress among midlife Australian women. Data were gathered from a baseline sample of 13,961 women and a follow-up study using semi-structured telephone interviews in New South Wales, Australia, between August and December 1997. Logistic regression was used to identify factors associated with medicine use. Qualitative comments regarding women's experiences of and attitudes to medicine use were analysed thematically. The respondents were 322 women aged 46-50 with low mental health scores who took part in the baseline survey of the Women's Health Australia study. Thirty-six percent of women who reported a recent period of psychological distress used medicines to help them cope. Taking medicines for distress (either prescribed or non-prescribed) was significantly associated with a lower mental health score on the MHI-5 (OR=0.98, 95% CI 0.96-1.00) and an increasing number of negative life events (OR=1.14, 95% CI 1.05-1.24). Taking medicines prescribed by a general practitioner was associated with being dissatisfied with one's family relationships (OR=0.52, 95% CI 0.30-0.91), or having gone through menopause in the past year (OR=1.68, 95% CI 1.00-2.81). Qualitative data (n=117) highlighted several concerns about use of prescribed psychotropic medicines, including a belief in natural remedies, unacceptable side-effects, fear of dependency, a belief that medicines cover up problems that need to be solved and that doctors prescribe too readily. While over one third of the midlife women took medicines to help them cope with a period of distress, many expressed negative views about the use of prescribed psychotropic drugs. Taking a partnership approach with women, exploring their attitudes to both the distress and the medications is essential if doctors are to achieve the objectives of quality use of medicines and patient satisfaction.

Soupourmas F, Ironmonger D, Brown P & Warner-Smith P.

Testing the practicality of a Personal Digital Assistant (PDA) Questionnaire vs a Beeper and Booklet (B&B) Questionnaire in a Random-Time Experience-Sampling Method (RTESM) Context.

Annals of Leisure Research, 2005; 8(2): 142-152.

The Random-Time Experience-Sampling (RTESM) Method has been used to examine people's subjective experience of time in particular activity contexts as they are experiencing particular events at random times throughout the day. The method involves a signalling device that cues respondents (at random intervals) to evaluate and report their activities for up to 70 moments of time during a week. While many empirical studies have used electronic pagers or 'beepers' to signal respondents, advances in information technologies have led to the increasing use of computerised platforms in Experience Sampling Method (ESM) research. This paper reports on a pilot study to examine respondent reactions and ability to complete a time use survey using two different reporting methods. Each respondent was asked to complete a time diary at random times of the day using: 1. a Personal Digital Assistant (PDA) (for three days); and 2. a Beeper and Booklet (B&B) (for four days). PDAs are handheld computers. The researchers loaded the PDAs with specialised survey software for participants to electronically report time use experiences in response to signals from the PDA. The B&B method required respondents to report their time use experiences in a survey booklet when signalled at random times by a purpose-built electronic beeper. Based on positive respondent feedback on the merits of the PDA platform and the ability to download responses directly from the PDAs, a full-scale RTES study of parents in dual-earner households will use this method to gather data about work-life tensions, leisure and well being in future years.

Smith MD, Russell A & Hodges PW.

Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity.

Australian Journal of Physiotherapy, 2006; 52(1): 11-16.

Although obesity and physical activity have been argued to predict back pain, these factors are also related to incontinence and breathing difficulties. Breathing and continence mechanisms may interfere with the physiology of spinal control, and may provide a link to back pain. The aim of this study was to establish the association

between back pain and disorders of continence and respiration in women. We conducted a cross-sectional analysis of self-report, postal survey data from the Australian Longitudinal Study on Women's Health. We used multinomial logistic regression to model four levels of back pain in relation to both the traditional risk factors of body mass index and activity level, and the potential risk factors of incontinence, breathing difficulties, and allergy. A total of 8,050 women were included from three age-cohorts. When incontinence and breathing difficulties were considered, obesity and physical activity were not consistently associated with back pain. In contrast, odds ratios (OR) for often having back pain were higher for women often having incontinence compared to women without incontinence (OR were 2.5, 2. and 2. for young, mid-age and older women, respectively). Similarly, mid-aged and older women had higher odds of having back pain often when they experienced breathing difficulties often compared to women with no breathing problems (OR of 2.0 and .9, respectively). Unlike obesity and physical activity, disorders of continence and respiration were strongly related to frequent back pain. This relationship may be explained by physiological limitations of co-ordination of postural, respiratory and continence functions of trunk muscles.

Strodl E & Kenardy J.
Psychosocial and non-psychosocial risk factors for the new diagnosis of diabetes in elderly women.
Diabetes Research and Clinical Practice, 2006; 74(1): 57-65.

Objectives: Determine psychosocial variables associated with the new diagnosis of diabetes in elderly women. Examine whether variables remained significant predictors after controlling for non-psychosocial risk factors and the frequency of doctor visits.

Research design and methods: A longitudinal cohort study was conducted using data from 10 300 women who completed a survey in 1996 and 1999. The women were aged between 70 and 74 years of age in 1996. They were asked to provide self-reports on a number of psychosocial and non-psychosocial variables in 1996 and on whether they had been diagnosed for the first time with diabetes in the 3-year period. The relationships between the potential risk factors and new diagnosis of diabetes were examined using binary logistic regression analysis.

Results: Univariate results showed that not having a current partner, having a low social support and having a mental health index score in the clinical range were all associated with higher risks of being diagnosed with diabetes for the first time. However the multivariate results showed that only a mental health index score in the clinical range and not having a current partner provided unique prediction of being newly diagnosed with diabetes. Of the non-psychosocial variables measured, only having a high BMI and hypertension were associated with increased risks of new diagnosis, while there was also evidence of a U-shaped relationship between alcohol consumption and new diagnosis. Even after adjusting for frequency of doctor visits and non-psychosocial risk factors, a mental health index in the clinical range proved to still be a significant risk factor.

Conclusion: A score on the mental health index that is within the clinical range is an independent risk factor for the new diagnosis of diabetes in elderly women.

Warner-Smith P, Everingham C & Ford J.
Mid-age women's experiences of work and expectations of retirement.
Just Policy, 2006; 40: 45-53.

The broad aim of this paper is to investigate what work and retirement mean for middle-aged women and to consider the implications of their experiences for government policy, especially given current concerns about workforce maintenance in the face of population ageing.

The data used in the paper are drawn from the Australian Longitudinal Study on Women's Health (ALSWH – also known as Women's Health Australia). This large longitudinal study includes three age cohorts of women, and it is information from four surveys of the mid-age cohort who were aged 45-50 when they were first surveyed in 1996 which is discussed here.

We find that many women in their fifties are maintaining, if not increasing, their hours of paid work, and that employment is generally associated with better health for this age group, particularly when they are working the hours they prefer. Retirement appears to be a problematic concept for these women, even as they head towards their sixties, and many do not have a clear picture of when they might want to retire. However, it seems that health, both their own and that of family members, is likely to be a major influence in their decision to retire, and may be even stronger than financial factors.

Williams L, Young A & Brown W.
Weight gained in two years by a population of mid-aged women: How much is too much?
International Journal of Obesity, 2006; 30(8): 1229-1233.

Objectives: To establish the prevalence of weight change in mid-aged women over a 2-year period, and to assess the relationship between weight

change and physical and mental well-being (SF36) in order to begin debate about the need for quantified standards of weight gain.

Study design/setting: This was a prospective study of weight change and well-being over a 2-year period among mid-aged women participating in a large national survey. Participants were 7270 women without surgical menopause aged between 45 and 50 years (termed Mid-aged), enrolled in the Australian Longitudinal Study on Women's Health. Weight change (self-reported weight at two time points) and physical and mental well-being (SF-36) were explored using linear regression, while adjusting for potential confounders.

Results: Only half the women maintained their weight within 2.25 kg, and one-third gained more than this amount in a 2-year period. While weight gain (≥2.25 kg) was negatively associated with physical well-being, both weight loss and weight gain were associated with poorer mental well-being.

Conclusion: This is the first prospective study using a large, population-based cohort to demonstrate that small changes in weight are associated with changes in well-being in mid-aged Australian women. It provides further evidence of the need for public health messages to specify the actual amount that constitutes weight gain, but further research is needed to establish these standards for the entire population.

Young AF, Powers JR & Bell SL.
Attrition in longitudinal studies: Who do you lose?
Australian and New Zealand Journal of Public Health, 2006; 30(4): 353-361.

Objective: To describe the risk factors for various types of attrition in three age cohorts of women in a longitudinal study and to discuss strategies to minimise attrition.

Methods: Analysis of survey data from the Australian Longitudinal Study on Women's Health, collected by mailed questionnaire. In 1996 the study recruited and surveyed a national random sample of 'younger' (18-23 years, n=14247), 'mid-age' (45-50 years, n=13716), and 'older' women (70-75 years, n=12432), and began a staggered cycle of mailed follow-up questionnaires: 1998 (mid-age), 1999 (older), 2000 (younger) and so on. Demographic, health and social risk factors for attrition were examined using multivariate analysis.

Results: Attrition at Survey 2 was highest among younger women (32%), mainly due to participants not being contactable (21%), and lower among the older (16%) and mid-age women (10%). At Survey 1, the Survey 2 non-respondents were more likely to report having less education, being born in a non-English speaking country and being a current smoker, in all cohorts, and had poorer health (mid-age and older cohort) and more difficulty managing on their income (younger and mid-age).

Conclusion: Although the magnitude of different types of attrition was found to differ by age, there were several risk factors for attrition that remained consistent. These findings are important to inform future studies on ways to lessen or prevent systematic loss of participants.

Implications: Recruitment and follow-up methods in longitudinal studies should be tailored to maximise retention of participants at higher risk of dropout.

In Press

Baines S, Powers J & Brown WJ.
How does the health and well being of young Australian vegetarian and semi-vegetarian women compare with non-vegetarians?
Journal of Public Health Nutrition, in press.

Objective: To compare socio-demographic characteristics, health status and health service use of vegetarians, semi-vegetarians and non-vegetarians.

Design: Cross-sectional analysis of data from the second survey of the Australian Longitudinal Study on Women's Health in 2000, 9,113 women (aged 22-27 years) were defined as non-vegetarians if they reported including red meat in their diet, as semi-vegetarians if they excluded red meat and as vegetarians if they excluded meat, poultry and fish from their diet.

Results: The estimated prevalence was 3% and 10% for vegetarian and semi-vegetarian young women. Compared with non-vegetarians, vegetarians and semi-vegetarians were more likely to live in urban areas, to be single and more highly educated. Vegetarians and semi-vegetarians had lower mean (95% confidence interval) body mass index [22.2 (21.7; 22.7) and 23.0 (22.7; 23.3) kg/m2] than non-vegetarians [23.7 (23.6; 23.8) kg/m2] and tended to exercise more. Semi-vegetarians and vegetarians had poorer mental health, with 21-22% reporting depression, compared with 15% of non-vegetarians (p<.001). Low iron levels and menstrual symptoms were also more common in both vegetarian groups. Vegetarian and semi-vegetarian women used more prescription and non-prescription medications and were more likely to consult alternative health practitioners.

Conclusion: The levels of physical activity and body mass indices of the vegetarian and semi-vegetarian women suggest they are healthier than non-vegetarians. However the greater reports of menstrual problems and the poorer mental health of these young women may be of clinical

significance. Further work is required to untangle the relationships between 'vegetarianism' and these health problems.

Bell S & Lee C.
Transitions in emerging adulthood and stress among young Australian women.
International Journal of Behavioral Medicine, in press.

Family caregiving is frequently associated with significant levels of physical, emotional and financial strain. This paper examines the health effects of transitions into and out of caregiving in middle age. We conducted a secondary analysis of data from the Australian Longitudinal Study on Women's Health (ALSWH) to examine changes in caregiving status among middle-aged women over a 3-year period, and the correlates and outcomes of these changes. A total of 9,555 middle-aged Australian women were categorised according to caregiving status at two surveys 3 years apart, as Continuing (2.7%); Stopped (4.9%); Started (3.0%); and Never caregivers (89.4%). Analyses at each time point show poorer physical and emotional health, health service use, health behaviours and lower engagement in the paid workforce among all three caregiver groups, indicating that middle-aged women who are, have been, or will become family caregivers are in poorer health than women who do not have these roles. Middle-aged women in poor health tend to be selected into caregiving, probably because they are less engaged with the paid workforce. Poor health and disengagement from the paid workforce continue even when caregiving stops. Health care providers should be particularly conscious of the needs of middle-aged caregivers, who are likely to be in poor health even before they take on the role.

Byles J & Feldman S.
The lives of older widowed women.
Just Policy, 2007; 39; 23-28.

No abstract available.

Collins C, Young A & Hodge A.
Diet quality is associated with higher nutrition intake and self-rated health in mid-aged women.
American College of Nutrition, in press.

Objective: To develop a diet quality score reflecting adherence to national dietary recommendations for the Australian Longitudinal Study on Women's Health (ALSWH) and to compare this against energy standardized nutrient intakes and indices of health.

Design: Cross-sectional survey in a nationally representative sample of mid-aged women participating in a cohort study.

Subjects: Data from 9,895 women aged 50-55 who participated in the 2001 survey and had four or less missing values on their food frequency questionnaires were used to calculate the Australian Recommended Food Score (ARFS) based on adherence to Australian Dietary Guidelines.

Measure of outcome: Correlates of ARFS were investigated including, mean nutrient intakes and indices of self-rated health and health service use. Associations were examined using ANOVA for continuous variables and Chi-squared tests for categorical variables. Area of residence and educational attainment were used as covariates in all modeling, to adjust for sampling frame and socioeconomic status.

Results: The maximum ARFS was 74, with a mean of 33.0 ± 9.0 and 21% achieving a score > 40. Higher ARFS was associated with indicators of higher socio-economic status, better self-rated health and lower health service use, $p<0.0001$, higher intakes of micronutrients and lower percentage of energy as total or saturated fat, $p<0.0001$.

Conclusions: The Australian Recommended Food Score can be used to rank mid-aged women in terms of diet quality and nutrient intake and is associated with indices of self-rated health and health service use. The ARFS can be used to measure future associations with health outcomes and mortality.

Duke J, Sibbritt D & Young A.
Is there an association between the use of oral contraception and depressive symptoms in young Australian women?
Contraception, in press.

Purpose: The purpose of this study was to explore the relationship between oral contraceptive pill (OCP) use and the experience of depressive symptoms among a representative sample of young Australian women.

Methods: The study sample comes from the Australian Longitudinal Study on Women's Health. Analysis was confined to women in the youngest cohort who responded to Survey 2, which was conducted in 2000 (n =9688) when they were aged between 22 and 27 years, and to Survey 3, which was conducted in 2003 (n =9081) when they were aged between 25 and 30 years.

Results: After adjusting for potential confounders, the odds of a nonuser experiencing depressive symptoms is not significantly different from that of an OCP user [odds ratio=1.05; 95% confidence interval (95% CI)=0.90–1.21]. Women who used OCP for reasons other than contraception were 1.32 (95% CI=1.07–1.62) times as likely to

be depressed than women who used OCP for contraception. The percentage of women who reported experiencing depressive symptoms declined as the number of years of OCP use increased (p=.009).

Conclusions: The results of this study suggest that, after adjusting for confounders, there is no independent effect of OCP use on depressive symptoms in young Australian women.

Everingham C, Stevenson D & Warner-Smith P.
'Things are getting better all the time'? Challenging the narrative of women's progress from a generational perspective.
Sociology, in press.

There is an implicit assumption in the social policy literature that since women are becoming better educated and out of the workforce for much less time over their lifecourse, their work situation will eventually come to duplicate that of men. A gender analysis of women's position in the workplace will no longer be relevant, particularly since the new economic conditions are shaping similar working lives for men. This paper calls into question this 'progress narrative', using material drawn from in-depth interviews from an Australian generational study. Drawing on the theoretical framework of Karl Mannheim, the paper argues that the progress narrative, with it's assumption of the gender neutral worker of the future, belongs to the older generation of women who came of age prior to the women's movement. At that time, the identity of women coming into adulthood was merged with that of motherhood and the normative constraints on mothers arising from a clear, structural division between the public and private spheres of life. The progress narrative no longer resonates with the experience of younger women, who manage their work and family commitments as a 'lifestyle choice'. This shift in the identity of 'woman' does not make a gender analysis of social policy irrelevant. It does mean, however, that the conceptual frameworks used by social policy analysts to understand what it means to be a woman in Western societies today need to be re-considered from a generational perspective.

Graham M, James EL, Keleher H & Byles J.
Predictors of hysterectomy as a treatment for menstrual symptoms.
Women's Health Issues, in press.

Background: Hysterectomy is a common procedure in Australia with approximately one in five Australian women undergoing a hysterectomy by the age of 50 for indications such as fibroids, disorders of menstruation (including excessive or irregular menstrual bleeding) and endometriosis. However, little is known about the characteristics of women who have had the procedure, or the predictors of hysterectomy as a treatment for menstrual symptoms. This study of middle-aged Australian women suffering from menstrual symptoms, aimed to identify the health and demographic characteristics that predict hysterectomy for the treatment of these problems.

Methods: A cross-sectional and a prospective cohort study were undertaken as a sub-study of the Australian Longitudinal Study on Women's Health (Women's Health Australia). Women from the mid-aged cohort of the Women's Health Australia study who identified having menstrual problems in the 1996 and 1998 surveys or who had undergone a hysterectomy during that time, were recruited. A self-administered instrument was mailed to the women in 2000. Data were analysed using Backwards Logistic Regression to predict hysterectomy as a treatment for menstrual symptoms.

Results: The predictors of hysterectomy as a treatment for menstrual symptoms were varied. They included the number of menstrual symptoms experienced or conditions diagnosed (such as fibroids or excessive menstrual bleeding), a perception that there was information available about menstrual symptoms, being influenced in the decision making process to elect a treatment option, and dissatisfaction with the other treatments tried prior to hysterectomy.

Conclusions: The lack of information about alternatives to hysterectomy is of concern. Alternatives are available and should be offered in the context of information provision about relief of menstrual symptoms, prior to definitive options such as hysterectomy. The lack of knowledge among health professionals about effective treatments for menstrual symptoms may contribute to their role in influencing women's decision-making process to elect hysterectomy as a treatment for menstrual symptoms.

Kelaher M, Dunt D & Dodson S.
Unemployment, contraceptive behaviour and reproductive outcomes amoung young Australian women.
Health Policy, in press.

Aims: To examine whether unemployment and partnership affects pregnancy, live births and terminations among young Australian women. Unemployment has conventionally been used in epidemiological studies to examine the health effects of loss of opportunity, material resources and satisfaction associated with work. During welfare reform in the 1990s it was argued that unemployment and associated welfare receipt could influence reproductive choice.

Design: As part of the Australian Longitudinal Study on Women's Health, information on employment, contraceptive use and pregnancy, live births and terminations was obtained at two time points. Information on partnership, age, parental education, and area economic resources was also obtained. The sample included 9683 women aged 18 to 23 years in 1996 (time 1) and 2000 (time 2).

Analysis: Logistic regressions were conducted to assess the relationship between unemployment and contraceptive use at time 1 and the impact of unemployment at time 1 on pregnancy, live births and terminations at time 2. Analyses accounted for partnership, significant differences in contraception, age, parental education and area economic resources.

Results: Despite the absence of differences in overall rates of contraceptive use, rates of pregnancy and live births among young unemployed women were higher than rates among employed women. These differences became non-significant when differences in the need to use contraception and oral contraceptive use were taken into account. There were no differences in terminations due to unemployment overall but partnered unemployed women were more likely to have a termination than other women.

Conclusions: The study did not support the notion that being unemployed provided incentives for single motherhood. However excess terminations suggest that unemployment might provide disincentives to continuing pregnancies among partnered and unemployed women. More detailed examination of contraception and partnership may be key in unraveling inconsistencies in past research.

Lee C & Gramotnev H.

Transitions into and out of caregiving: Health and social characteristics of middle age Australian women.

Psychology and Health, in press.

Family caregiving is frequently associated with significant levels of physical, emotional and financial strain. This paper examines the health effects of transitions into and out of caregiving in middle age. We conducted a secondary analysis of data from the Australian Longitudinal Study on Women's Health (ALSWH) to examine changes in caregiving status among middle-aged women over a 3-year period, and the correlates and outcomes of these changes. A total of 9,555 middle-aged Australian women were categorised according to caregiving status at two surveys 3 years apart, as Continuing (2.7%); Stopped (4.9%); Started (3.0%); and Never caregivers (89.4%). Analyses at each time point show poorer physical and emotional health, health service use, health behaviours and lower engagement in the paid workforce among all three caregiver groups, indicating that middle-aged women who are, have been, or will become family caregivers are in poorer health than women who do not have these roles. Middle-aged women in poor health tend to be selected into caregiving, probably because they are less engaged with the paid workforce. Poor health and disengagement from the paid workforce continue even when caregiving stops. Health care providers should be particularly conscious of the needs of middle-aged caregivers, who are likely to be in poor health even before they take on the role.

Parker G & Lee C.

Relationships among abuse characteristics, coping strategies, and abused women's psychological health: A path model.

Journal of Interpersonal Violence, in press.

This study examined the relationships between characteristics of abuse experience, ways of coping, and psychological health, among 143 women who had experienced abuse in adult relationships. Measures included characteristics of the abuse; three measures of coping – problem-focused coping, emotion-focused coping, and Sense of Coherence; and four measures of psychological health - the SF-36 Mental Component Scale, the General Health Questionnaire, Center for Epidemiological Studies Depression scale, and a measure of perceived negative effects of the abuse. Characteristics of abuse experience explained less than 12 per cent of the variance in measures of coping measures. Problem-focused coping was not related to psychological health, the influence of emotion-focused coping on psychological health was indirect only, and sense of coherence emerged as the only coping measure to have significant direct effects on emotional health. Good psychological health following abuse appears to be more closely related to dispositions than to contextual factors or coping strategies.

Sibbritt D, Adams J & Young AF.

A profile of mid-age women who consult a chiropractor or osteopath: Findings from a survey of 11,143 Australian women.

Journal of Manipulative and Physiological Therapeutics, in press.

Purpose: To examine the prevalence of chiropractic/osteopathy use and the profile of chiropractor/osteopathy users among mid-age Australian women

Methods: This paper reports on research conducted as part of the Australian Longitudinal Study on Women's Health. The focus of this paper is the 11,202 mid-age women who responded

to Survey 3 in 2001 when they were aged 50-55 years. The demographic characteristics, health status and health service use of chiropractic/osteopathy users and non-users were compared using chi-square tests for categorical variables and t-tests for continuous variables.

Results: From our findings we estimate that 16% of mid-age women consult with a chiropractor or osteopath (after adjustment for the over-sampling of rural women). Area of residence, education and employment status were all statistically significantly associated with chiropractic/osteopath use. Specifically, women who live in a non-urban area were more likely to consult a chiropractor or osteopath, compared to women who live in an urban area. Women are significantly more likely to consult with a chiropractor/osteopath if they have had a major personal injury in the previous year and women who use chiropractic/osteopathy are also high users of 'conventional' health services.

Conclusions: Chiropractic/osteopathy use among women in Australia is substantial and can not be ignored by those providing or managing primary health care services for women. It is essential that the interface and communication between chiropractors/osteopaths and other health care providers be highlighted and maximized in order to establish and maintain effective overall patient co-ordination and management.

Sibbritt D, Adams J & Young A.
The characteristics of mid-aged Australian women who consult acupuncturists.
Acupuncture in Medicine, in press.

Despite the identification of increasing acupuncture use in recent years, there are few studies that focus attention upon the characteristics of acupuncture users. This paper, examining the characteristics of acupuncture users among mid-age Australian women, provides a first step towards addressing this significant research gap. This study was conducted as part of the Australian Longitudinal Study on Women's Health. The paper reports on 11202 mid-aged women, surveyed in 2001. We estimate that 4.5% of mid-age women consult with an acupuncturist. Women who consult with an acupuncturist are less likely to be married or living in a de-facto relationship, are more likely to have had a major personal illness in the previous year, to have suffered from a variety of symptoms or have significantly lower scores (ie. poorer health) on all eight dimensions of the SF-36 health-related quality of life scale. Women who use acupuncture are also higher users of 'conventional' health services. While the development of a research base and clinical applications for acupuncture are ongoing, health professionals should be aware that acupuncture is currently being used by large numbers of mid-aged women. In addition, given the relatively higher prevalence of acupuncture use reported in our study, it is important that further research explore acupuncture use in more detail and the relationship between women's health issues and their use and experience of acupuncture.

Williams L, Germov J & Young A.
Preventing weight gain: A population cohort study of the nature and effectiveness of mid-age women's weight control practices.
International Journal of Obesity, in press.

Objective: To examine women's weight control practices and their effectiveness in preventing weight gain.

Design: Retrospective cohort study of weight control practices and two year weight change among mid-age women participating in the Australian Longitudinal Study on Women's Health (ALSWH).

Subjects: 11 589 Australian women (aged 47-52).

Measurements: The prevalence and types of self-reported weight control practices used were assessed by a nine item instrument. Two-year weight change was self-reported and adjusted for baseline body mass index (BMI) and other potential confounders.

Results: Seventy-five percent of the cohort (N=8556) reported actively trying to control their weight. Dietary modification was used more frequently than exercise. Two-thirds of the weight-controlling women used a combination of practices, the two most common being 'decreased food quantity, cut down on fats/sugars and exercise' (32%, baseline BMI 25.87(0.10)), and 'decreased food quantity and cut down on fats/sugars without exercise' (15.6%, baseline BMI 27.04(0.14)). Potentially health-damaging practices (smoking, laxatives, fasting) were relatively uncommon, at 8%. Only one combination of practices (decreased food quantity, cut down on fats/sugars, use of a commercial weight loss program, and exercise) prevented mean weight gain (-0.03 kg), while the mean (SD) weight of the cohort increased (+1.19(4.78)) over the two-year period.

Conclusions: The majority of mid-age women attempting weight control used practices consistent with public health messages. Despite their efforts, the group was mostly unsuccessful in preventing weight gain. Public health authorities and health practitioners may need to make more quantitative recommendations and emphasise the importance of balancing physical activity with dietary intake to achieve successful weight control for women at this life stage.

Conference Presentations 2006

Ball K.
Psychosocial consequences of obesity.
10th International Congress on Obesity, Sydney, 3 - 8 September 2006.

Ball K.
Psychosocial consequences of obesity.
Invited symposium presentation, 10th International Congress on Obesity, Sydney, 3 - 8 September 2006.

Bowe S, Young A & Sibbritt D.
Analysing longitudinal changes in health-related quality of life: How do you account for deaths and other missing data?
Australasian Epidemiological Association Conference, Melbourne, 18 - 19 September 2006.

Brown P.
How employees experience and manage time.
Work/Life Balance: Challenges and Solutions Conference, Brisbane, 20 November 2006.

Brown P, Cerin E & Warner-Smith P.
The Work/Life Tensions' Project: Exploring experiences of time among dual-earner parents in Australia.
9th Annual World Leisure Congress, Hangzhou, China, 15 - 24 October 2006.

Brown P, Cerin E & Warner-Smith P.
Using the experience sampling method to compare patterns of time use among working parents in two age cohorts.
28th Annual Conference on Time Use Research, Copenhagen, Denmark, 16 - 18 August 2006.

Brown W, Burton N, Spalleck M & Trost S.
Sharing an anniversary: Physical activity and the Australian Longitudinal Study of Women's Health.
US Centres for Disease Control International Conference on Physical Activity and Health, Atlanta, USA, 17 - 20 April 2006.

Brown W, Hockey R & Dobson A.
Physical activity, BMI, and health care costs in mid aged and older Australian women.
53rd Annual Meeting of the American College of Sports Medicine, Denver, USA, 31 May - 3 June 2006.

Brown W.
Longitudinal epidemiological data on physical activity, obesity, and health: Australia.
Symposium - Physical Activity and Obesity Satellite Conference, Brisbane, 31 August – 2 September 2006.

Brown W.
Weight and weight gain in Australian women: Understanding the importance of energy balance.
Jenny Craig Symposium - The role of commercial weight loss programs in obesity management. International Physical Obesity Conference, Sydney, 3 - 8 September 2006.

Brown W.
Physical activity and health in women, presenting the evidence.
Symposium - Physical activity and health in women: Measurement and interventions. 9th International Congress of Behavioural Medicine, Bangkok, Thailand, 29 November - 2 December 2006.

Brown W.
Weight gain data support the case for activation of Australian women.
International Conference on Sports Marketing, Hong Kong, 7 - 8 October 2006.

Bryson L.
Community program response: Is the traditional National program model the right response to address disadvantage in communities?
Academy of the Social Sciences in Australia, Round Table on Community, Canberra, 24 November 2006.

Bryson L & Powers J.
Researching in a mobile world: Dealing with populations, mobility and longitudinal research in the twenty-first century.
Making the most of the Census, Canberra, 18 - 19 July 2006.

Byles J.
Fit and Well at 80: Defying the stereotypes of age and illness.
3rd International Conference on Healthy Ageing & Longevity, Melbourne, 13 - 15 October 2006.

Byles J, Millar C, Sibbritt D & Chiarelli P.
Incontinence among older women in Australia.
39th Conference of the Australian Association of Gerontology, Sydney, 22 - 24 November 2006.

Byles J & Pachana N.
Social circumstances, social support, ageing and health: Findings from the Australian Longitudinal Study on Women's Health.
39th Conference of the Australian Association of Gerontology, Sydney, 22 - 24 November 2006.

Byles J, Young A, Henry D, Dolja-Gore X & Parkinson L.
Multiple medicines and the PolyPill: Can one size fit all?
39th Conference of the Australian Association of Gerontology, Sydney, 22 - 24 November 2006.

Collins C, Young A & Hodge A.
Associations between diet quality, quality of life and Medicare costs in mid-aged women from the Australian Longitudinal Study on Women's Health.
Annual Scientific Meeting of the Nutrition Society of Australia, Sydney, 29 November - 2 December 2006.

Cwikel J & Segal-Engelchin D.
How do mothers cope under conditions of chronic stress?
22nd Annual Meeting of the International Society for Traumatic Stress Studies, Hollywood, USA, 5 November 2006.

Dobson A.
Australian Longitudinal Study on Women's Health: The outlook for chronic disease.
International Council on Women's Health Issues Congress, Sydney, 16 November 2006.

Hallsworth L.
Life events as predictors of quality of life following breast cancer.
International Congress of Behavioural Medicine, Bangkok, Thailand, 29 November - 2 December 2006.

Heesch K, Byles J & Brown W.
Does physical activity decrease the risk of falls in older women?
9th International congress of Behavioural Medicine, Bangkok, Thailand, 29 November - 2 December 2006.

Hure A, Young A, Smith R & Collins C.
A comparison of diet quality in young Australian women according to pregnancy status.
Annual Scientific Meeting of the Nutrition Society of Australia, Sydney, 29 November - 2 December 2006.

Hure A, Young A, Smith R, & Collins C.
Quality higher during pregnancy?
11th Annual Congress of the Perinatal Society of Australia and New Zealand, Melbourne, 1 - 4 April 2006.

Larson A.
The implications of population mobility for social development.
Australians on the Move: Internal Migration in Australia, Academy of the Social Sciences in Australia Annual Symposium, Canberra, 20 - 22 November 2006.

Lowe J, Young A, Byles J & Dolja-Gore X.
Patterns of care for older women in Australia with diabetes.
Australian Diabetes Society Conference, Gold Coast, 23 - 25 August 2006.

McDermott LJ, Owen N & Dobson AJ.
Factors associated with late initiation of smoking among Australian women in young adulthood.
4th Annual Scientific Conference of the Australasian Society for Behavioural Health and Medicine, Auckland, New Zealand, 9 - 11 February 2006.

Miller Y, Hockey R, Dobson A & Brown W.
Does having a baby make you fatter? Determinants of 7-year weight gain among young women.
9th International Congress of Behavioural Medicine, Bangkok, Thailand, 29 November - 2 December 2006.

O'Dwyer S, Miller Y & Brown W.
Physical activity and memory complaints in older women from the Australian Longitudinal Study on Women's Health.
9th International Congress of Behavioural Medicine, Bangkok, Thailand, 29 November - 2 December 2006.

Parkinson L & Byles J.
Driving Myself. On the Road in Later Years - Recent Research on Older Drivers.
AAG NSW Division, Sydney, 30 August 2006.

Parkinson L, Byles J, Gibson R & Sibbritt D.
Women and arthritis: Management of arthritis in older Australian women.
39th National Conference of the Australian Association of Gerontology, Sydney, 22 - 24 November 2006.

Parkinson L, Byles J, Gibson R & Sibbritt D.
Women and arthritis: The burden of suffering for older Australian women.
Annual NSW Rural Conference of the Australian Association of Gerontology, Tamworth, 23 - 24 March 2006.

Parkinson L, Warburton J, Sibbritt D, Byles J & Gibson R.
Volunteering and older women.
Annual NSW Rural Conference of the Australian Association of Gerontology, Tamworth, 23 - 24 March 2006.

Powers J & Young A.
Abstinence: Is it bad for you or a case of mistaken identity?
Australasian Epidemiology Association Conference, Melbourne, 18 - 19 September 2006.

Read CM, Bateson D & Weisberg E.
The pregnancy and contraceptive experiences of a cohort of mid-life Australian women.
FIGO Meeting, Kuala Lumpur, Malaysia, November 2006.

Williams L, Germov J, Young A & Wheway V.
What practices do Australian women use to prevent weight gain and how well do they work?
24th National Conference of the Dietitians Association of Australia, Sydney, 11 - 13 May 2006.

Young A & Byles J.
Longitudinal patterns and correlates of frequent attendence to general practice among women.
Australasian Epidemiological Association Conference, Melbourne, 18 - 19 September 2006.

Young A, Lowe, L, Byles J & Dolja-Gore X.
Linking health-related databases to study the costs of health care for chronic disease.
Australasian Epidemiological Association Conference, Melbourne, 18 - 19 September 2006.

Seminars & Workshops 2006

Brown W.
Australian Longitudinal Study of Women's Health: Changes in physical activity and weight 1996-2003.
Hawaiian Cancer Prevention Centre, Hawaii, USA, April 2006.

Byles J.
Fit and Well at 80.
Research Centre for Gender and Health Seminar, University of Newcastle, 12 July 2006.

Byles J.
Women, care and caring: A view from the Australian Longitudinal Study on Women's Health.
Seminar for the Aged, Hosted by Parkinson's People, Raymond Terrace, 25 September 2006.

Byles J.
The Australian Longitudinal Study on Women's Health.
Food Standards of Australia and New Zealand Board Meeting, Canberra, 20 September 2006.

Carrigan G, Barnett A, Dobson A & Mishra G.
Advances in imputation: Implications for ALSWH.
RCGHA / WHA Statisticians Workshop, University of Newcastle, 9 October 2006.

Cwikel J & Segal-Engelchin D.
How do mothers cope under conditions of chronic stress?
Key Centre for Women's Health, Melbourne University, July 2006.

Dobson A & O'Dea K.
Australian Longitudinal Study on Women's Health: The outlook for chronic disease.
Department of Treasury, Canberra, 21 November 2006.

Gibson R.
General linear latent variable growth modeling with Mplus.
RCGHA / WHA Statisticians Workshop, University of Newcastle, 9 October 2006.

Hockey R.
Incidence and prevalence of chronic conditions.
RCGHA / WHA Statisticians Workshop, University of Newcastle, 9 October 2006

Loxton D & Lucke J.
The Australian Longitudinal Study on Women's Health.
Mature Australasian Longitudinal Studies of Children and Youth, Melbourne, 21 - 22 August 2006.

Loxton D & Powers J.
Going through menopause. Midlife - Choices for health and wellbeing.
Public presentation hosted by The Jean Hailes Foundation for Women's Health, Newcastle, 6 September 2006.

Loxton D & Powers J.
Menopause: Results from the Australian Longitudinal Study on Women's Health.
Menopause and Midlife Update for Health Professionals, The Jean Hailes Foundation for Women's Health, Newcastle, NSW, 6 September 2006.

McDermott L, Owen N & Dobson A.
Factors associated with late smoking initiation among young women in young adulthood.
WHA-UQ Seminar, University of Queensland, 6 February 2006

Mendis S.
The perception of burden and satisfaction associated with the role of female caregiver.
WHA-UQ Seminar, University of Queensland, 6 February 2006.

Mishra G.
Concepts and methodological issues in life course epidemiology.
School of Population Health Seminar Series, University of Queensland, 14 February 2006.

Mooney R.
The right time to have children: Young women's perceptions of older motherhood.
Hunter Postgraduate Medical Institute's Hunter IVF Babies and Beyond Series 2 – Pre Pregnancy Counselling, Newcastle, 19 October 2006.

Mooney R.
Issues of breadth, depth and generalisability: The benefits of combining qualitative and quantitative methodology in a study of women's reproductive plans.
School of Humanities and Social Science Research Higher Degree Student Seminar Series, University of Newcastle, 2 November 2006.

Tooth L & Lucke J.
Who cares? Caring experiences of middle and older-aged women from the Australian Longitudinal Study on Women's Health.
School of Population Health Seminar Series, University of Queensland, 3 October 2006.

Completed Theses 2006

A longitudinal analysis of Oral Contraceptive Pill (OCP) use

Candidate: Ms Angie Wood
University: Macquarie University
Degree: Masters of Applied Statistics
Supervisors: A/Professor Gillian Heller & Dr Anne Young

This project used data from the ALSWH, in particular the first three surveys of the Younger cohort of women. The three main objectives of this project were:

- to describe the users of contraception at Survey 1 in terms of their socio-demographic factors, health status and health risk behaviours
- to describe the long-term users of the Oral Contraceptive Pill (OCP) in terms of their socio-demographic factors, health status and health risk behaviours and
- to determine the long-term association between OCP use and health related quality of life among younger women.

A contraceptive status variable was created at each of the three surveys and categorised each woman into one of seven groups as shown in the table below.

Table 1.1. Contraceptive status for younger women who completed surveys.

	Survey 1	Survey 2	Survey 3
	(N=14,247)	*(N=9,688)*	*(N=9,081)*
Category	%	%	%
Pregnant now – don't need contraception	3	5	9
Don't need contraception – Other	23	14	15
Choose not to use contraception	2	5	6
Oral Contraceptive Pill (OCP) only	37	42	33
OCP and any other contraceptive	14	14	13
Condom alone or other contraceptives (No OCP)	18	15	16
Other contraceptives only (No OCP/ condoms)	3	6	8

Area of residence was significantly associated with contraceptive use (p<.0001), with the percentage of young women using any form of contraception at Survey 1 being higher in the rural and remote areas of the country. After adjusting for area of residence, Young women at Survey 1 using contraception were more likely to be Australian-born or from an English-speaking background (ESB), be in a defacto relationship, be older, not currently studying and had more difficulty managing on their income. Women who consumed alcohol at risky levels and those who were current smokers were the most likely to be users of contraception.

In the second stage of the project, a dichotomous indicator variable of current OCP use (Yes/No) at each of the three surveys was created. These three variables were then combined to define eight patterns of OCP usage. For ease of interpretation and due to some small sample sizes, these eight patterns were collapsed into five groups shown in the table below. The sample of women included in the analysis was restricted to women who were long-term ALSWH participants, had complete contraception data and had not had a baby (n=5161).

The patterns of use of OCP were associated with different socio-demographic characteristics and health related behaviours. For example, women who were long-term OCP users were more likely than other women to have more education; manage on their income without difficulty; be in a stable relationship (de facto or married); be in the healthy weight range; have moderate or high levels of physical activity and drink alcohol at low risk levels (not harmful to their health).

Table 1.2. OCP usage of younger women.

Category	Pattern	N	%
Long-term user of OCP	YYY	1433	28
Start using OCP	NYY	1177	23
	NNY		
Stop using OCP	YNN	978	19
	YYN		
Intermittent use of OCP	YNY	595	12
	NYN		
No usage of OCP	NNN	978	19

The third part of the project investigated whether changes in health-related quality of life between Surveys 1 and 3 were associated with levels of OCP usage. Longitudinal analysis was carried out using the method of generalised estimating equations (GEE) to analyse longitudinal measures of health-related quality of life (measured with three of the SF-36 subscales at Surveys 1, 2 and 3) in relation to OCP usage.

The results of this study showed that long-term users of OCP had equal or better quality of life according to the General Health (GH), Mental Health (MH) and Vitality (VT) subscales of the SF-36, than other women their age, once adjustments were made for area of residence, comorbidity, level of education and smoking. The inclusion of the OCP user variable in each of the three models was significant thus indicating that there is a general effect of OCP use. That is, there is on average a difference in MH, GH and VT between the different groups of women defined by their OCP use.

There are some limitations to this study including missing data (due to women failing to answer some questions in the survey), and inconsistencies with the data (e.g. a participant may not have followed the instructions correctly or may have contradicted themselves across time). Another limitation is that the data are obtained through self-report at only three timepoints in a 7-year period and this analysis makes the assumption that their self-reported behaviours have continued, which they may or may not have done. Also, due to initial recruitment and retention bias, a number of minority groups may be underrepresented in this study. Finally, another limitation is that variables to reflect transitions over time could have been investigated more thoroughly for their inclusion as covariates in the model. More complex longitudinal models to incorporate changes over time for these young women could be explored. The potential association of long-term OCP use and adverse outcomes such as cancer could not be studied at this time due to the lag time in the development of these conditions.

Until now, there has been very little evidence regarding young Australian women's OCP usage and its association with long-term health. The results of this study indicate that among women who have not had a baby, use of OCP may carry some benefits in terms of quality of life and this study has not shown any detrimental effects of OCP use among these younger women.

Epidemiology of osteoporosis in Australian women

Candidate: Mrs Karen Furlong

University: School of Population Health, University of Queensland

Degree: Masters of Public Health

Supervisors: Professor Annette Dobson

Osteoporosis is characterised by increased bone fragility and susceptibility to fractures with the most common fractures being of the hip, spine, wrist, forearm and humerus. It is an escalating problem worldwide with the increase in life expectancy and ageing of the population. It involves a large burden in terms of morbidity, mortality, and costs. A better understanding of the epidemiology of osteoporosis especially in Australian women, may contribute to better targeting of interventions for those women who may be at risk of osteoporosis.

Data from an Older cohort of women from the ALSWH, aged 70-75 in 1996, were examined over a six-year period comparing those who reported doctor-diagnosed osteoporosis with to those who did not. The first stage was to conduct a baseline exploratory analysis, of data from those women who reported doctor-diagnosed osteoporosis in Survey 1 (prevalent cases), investigating associations with a range of demographic, health

behaviour, and reproductive factors. The second stage was to examine incident cases during the first six years of follow up, in relation to the same factors including fractures, hormone replacement therapy (HRT) use, falls, physical activity, body mass index (BMI), smoking, and alcohol consumption.

The study showed a prevalence of 20% for self-reported osteoporosis in Australian women aged 70-76 years with an incidence of 15.7% over six years. Overall, the results support the findings of many other studies in relation to risk factors for osteoporosis. For example, there was a higher risk of osteoporosis in those women who sustained broken bones, lived in urban areas, smoked cigarettes, suffered from asthma, and were underweight. There was also a reduction of osteoporosis risk with higher levels of physical activity, but no association in relation to alcohol consumption, country of birth, highest qualification, or occupation.

This study did, however, produce conflicting findings with relation to HRT use, which is usually found to be protective for osteoporosis. But in this cohort of Australian women, there was a higher rate of osteoporosis in both current users, OR=2.82 95% CI (2.44-3.26) (prevalent cases), OR=1.83 (1.38-2.41) (incident cases), and past users of HRT OR=2.15 (1.85-2.5) (prevalent), OR=1.41 (1.13-1.77) (incident) than in women who never used HRT.

Results from this study about the prevalence and risk factors associated with osteoporosis in Australian women may help to increase understanding of osteoporosis, and help with the allocation of resources to assist in the prevention and management of the disease.

Carers and psychosocial correlates across time: A longitudinal analysis

Candidate: Dr Sally Price

University: School of Psychology, University of Queensland

Degree: Doctor of Psychology (Clinical and Clinical Neuropsychology)

Supervisors: Dr Nancy Pachana

It was the aim of this research project to investigate the health of Australian women aged 70 years and over who are caring for someone ill or disabled at home. This sample of women was drawn from the Australian Longitudinal Study of Women's Health (ALSWH) which is a large population-based mail-out survey examining aspects of health in these women.

Study one was cross-sectional in nature. Results of independent t-tests indicated that caregivers (N= 851) reported poorer mental health as compared to demographically similar non-caregivers (N = 9 583), and no differences between groups were found for self-reported physical health. There were few observed differences between these groups on measures of social support, stress and personality traits. Results of hierarchical multiple regression analyses indicated that health-related hardiness (HRH), physical activity, social support, neighbourhood satisfaction and income are important in fostering positive ratings of mental health. Higher stress and the occurrence of more than one major life event in recent years were not

helpful for caregiver mental or physical health. HRH, physical activity and income were important in fostering positive outcomes for self-reported physical health. There was no support for any interactive or moderating relationships.

Study two aimed to investigate caregiver health over time where continuous non-caregivers were compared with caregiving groups via linear mixed models analyses. While the means for mental health for all caregiving trends fell within the average range for Australian norms, statistical analysis suggested a downward trend over time for caregiver mental health. There was a lack of definitive support for the adaptation hypothesis as it stands at present, and there was no support for improvement in mental health following cessation of the caregiving role. Caregiving was not associated with declines in self-reported physical health. However, age was associated with declines in this domain, where over time, all caregiving groups and the non-caregivers reported worse physical health.

Implications for future caregiving research and for social and health care policy are discussed.

Inquiries

University of Queensland

Dr Jayne Lucke

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 4723
F +61-7 3365 5540
E sph-wha@sph.uq.edu.au

University of Newcastle

Dr Deborah Loxton

Project Manager

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

T +61- 2-4923 6872
F +61-2-4923 6888
E whasec@newcastle.edu.au

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

women's health australia