women's health australia

Australian Longitudinal Study on Women's Health

Annual Report

2008

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contents

director's report

The Australian Longitudinal Study on Women's Health is now in its thirteenth year. It is funded by the Australian Government Department of Health and Ageing and involves around 40,000 women from three age cohorts, selected from the Australian population. We hope to follow each woman for over twenty years to track changes in health and life circumstances as they move through major life transitions.

An important development this year was the decision to rename the cohorts of women in the Study according to their birth years. The new cohort names (as shown in the table) are more precise and informative, do not rely on their relationship with the other cohorts, and will not change their meaning or relevance over time.

Previous cohort name	New cohort name (based on years of birth)
Younger	1973 - 78 cohort
Mid-aged	1946 - 51 cohort
Older	1921 - 26 cohort

This year we surveyed the 1921-26 cohort for the fifth time. These women are now 82-87 years old. While a number of the original group have died and others are coping with declining health, many are managing well and remain healthy and active. Using these data the Study will be able to examine predictors of health and quality of life in advanced age. We also developed and pilot-tested the fifth survey for the 1973-78 cohort who are now aged 31-36 years. Next year we will start work on the sixth survey of the 1946-51 cohort to be conducted in 2010 when the women are aged 59-64 years.

The Australian Longitudinal Study on Women's Health continues to provide evidence to develop and evaluate policies that will lead to better health for all Australians. We have produced scientific papers and conference presentations on all aspects of women's health. This year we gave a number of presentations about a broad range of topics at the Population Health Congress held in Brisbane in July and an overview of these presentations is featured in this Annual Report.

This year we received ethical approval to link the information from our surveys with health information from the Medicare database from 1996 and the Pharmaceutical Benefits Scheme from 2002 without the need to ask for individual consent. This important development will allow us to provide more complete and useful findings about the health of Australian women.

Linking the survey data we collect with other databases was an original aim of the Study. It is a very powerful way to provide unique and rich information on health service use around the country, over time, and in relation to particular health outcomes.

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

Annette Dobson

Annette Dobson

Study Director

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Congratulations to our successful graduates for 2008

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"Investigating quality of life and depression in middle aged and older Australian women with cancer"

Supervisors: Dr Prasuna Reddy, Dr Steven Bunker & Ms Jane Fletcher

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PhD

University of Newcastle

"Battling the Black Dog: An exploration of the strategies used by young Australian women coping with depressive symptoms"

Supervisors: Professor Christina Lee & Dr Sue Outram

Rosemary Korda

PhD

The Australian National University

"Socioeconomic inequalities in women's use of health care services in Australia"

Supervisors: Professor Jim Butler, Dr Mark Clements, Dr Emily Banks & Dr Jane Dixon

Afsoon Hassani Mehraban

PhD

University of Newcastle

"A functional analysis of falls risk"

Supervisors: Professor Julie Byles & Dr Lynette Mackenzie

Nadine Smith

PhD

University of Queensland

"Biopsychosocial correlates of women's mental health: A longitudinal analysis of self-reported mental health across three generations of Australian women"

Supervisors: Professor Annette Dobson & A/Professor Nancy Pachana

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Population Health Congress 2008

A Global World – Practical Action for Health and Well-being

Brisbane, 6-9 July 2008

The inaugural Population Health Congress, described as 'the population health event of the decade', was held in Brisbane 6-9 July 2008. The event brought together the four major public health organisations in Australasia - the Public Health Association of Australia, the Australian Health Promotion Association, the Australasian Epidemiological Association and the Australasian Faculty of Public Health Medicine, and addressed three major themes – environment and health; social cohesion, social capital and health; and food and health.

ALSWH had a large presence at the conference. The contributions made by investigators, staff and collaborators are showcased here.

Dobson A.

Combined host organisations oration: Harnessing Australia's health information.

The Combined Host Organisations Oration was given by Professor Annette Dobson, Director of the Australian Longitudinal Study on Women's Health. Professor Dobson discussed the advantages of linking health information from different sources. She outlined the key events in health record linkage in Australia from the establishment of the National Death Index in 1984 to the recent developments to establish the Population Health Research Network.

Australia has excellent health information resources with national data available about deaths via the National Death Index, subsidised medical consultations via Medicare and drug prescriptions filled via the Pharmaceutical Benefits Scheme (PBS). State and Territory data on hospital admissions and other services are also available, as well as considerable expertise in data linkage.

Key events in Health Record Linkage

1984	National Death Index established
1995	Western Australian Data Linkage Unit received Lotteries grant to expand system
2006	Centre for Health Record Linkage (CHeReL) established in NSW
2006	Initial discussions for formation of a National Collaborative Research Infrastructure Strategy (NCRIS); $20 million over 3 years was promised from the Department of Education, Science and Training
2008	In March the new Department of Innovation, Industry, Science and Research (DIISR) announced that it would proceed with the NCRIS plan, remodelled as the 'Population Health Research Network'

However, several barriers to linkage also exist. Multiple ethical approvals are often required in order to link data from different sources, there are legal, privacy and confidentiality hurdles and there are also significant jurisdictional differences with a variety of State, Territory and National laws and practices that need to be observed.

Using the ALSWH as an example, Professor Dobson demonstrated the advantages of linkage without the need for individual consent. An original design feature of the ALSWH was to link women's survey information with information from the Medicare and PBS databases, and the sample was selected by Medicare for this purpose. However this goal has not yet been achieved because of the requirement for women to provide their consent. While few women refused an additional consent, a number gave their consent for some periods, but not others, and it was evident they were confused by the process. It was also clear that there were some socio-demographic

differences between women who consented and those who did not. These factors led to concern about whether the conclusions of research using linked data were valid. Linkage without the requirement for individual signed consent overcomes these concerns, and so has great potential to answer useful and interesting questions relevant to health practice and policy.

Professor Dobson also outlined the way in which data linkage protocols could ensure the privacy of individuals. The use of a separate data linkage unit to combine the information from different sources means that identifying information is not included in linked data sets, thus protecting the anonymity of anyone whose information was stored in the databases.

Population Health Research Network: Main Features

- National network co-ordinated from WA (Telethon Institute of Child Health Research), which builds on expertise in WA and NSW
- Establishes similar capacity for other States and Territories – recognising different jurisdictional settings
- Based on rigorous privacy-preserving protocol, where patient information is de-identified at a central Data Linkage Unit before being distributed to researchers.

In summary:

- Health Record Linkage is the 'next big thing' in population health surveillance and research
- Key factors in success are adequate funding (e.g. through the Population Health Research Network) and the development of acceptable privacy protocols
- It is important to harness this resource for population health benefit

Postscript: Linkage of Medicare data for all ALSWH participants without the need for individual consent was approved in October 2008.

Taft A & Watson L.

Depression, pregnancy termination and births among young Australian women: The confounding effect of partner violence.

One in four Australian women undergoes termination of pregnancy (TOP). Evidence is inconclusive whether TOP affects women's depression, but evidence exists of a strong association between partner violence and depression. Here, the associations between depression and experience of violence, TOP, births and socio-demographic characteristics among young Australian women were examined. Data from Surveys 1 and 2 of the youngest ALSWH cohort, women born 1973-78, were examined for association of depression in 2000 with TOP (in 1996 or 2000), births, and violence.

Thirty per cent of women were depressed, and 11% reported TOP by 2000. After adjustment for violence, number of births and sociodemographic variables, depression and TOP were only marginally significantly associated. In contrast, partner violence was significantly associated with depression: either adjusted or unadjusted for termination, births and socioeconomic status. Linear regression showed a four fold greater effect of violence than termination or births.

Partner violence has a significantly greater association with women's depression compared with TOP or births. Any strategy to reduce the burden of women's depression should include prevention/reduction of violence against women and strategies to ensure that pregnancies are wanted.

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

The sexual health of Australian women in their twenties and thirties.

Little sexual health research has examined changes over time in sexual health among women in their twenties and thirties. Participants in this study were 6840 women from the ALSWH cohort born in 1973-78, aged between 18-23 years when first surveyed in 1996, then surveyed a further three times in 2000, 2003 and 2006. Factors associated with a number of indicators of risky sexual behaviour and poor sexual health were examined.

At Survey 4 around 10% of the women had used withdrawal as a contraceptive method, one third reported multiple sexual partners, and 13% had not adhered to Pap test recommendations. Around 18% of women had ever reported an STI. Being single, working full-time and ever experiencing partner violence or child sexual abuse were all associated with increased odds of risky sexual behaviour and poor sexual health. Young Australian women may be at considerable risk of negative sexual health outcomes which impact on their general health and wellbeing.

Hobbs M, Taft A & Amir L.

The emergency contraceptive pill (ECP) rescheduled: Exploring women's knowledge, attitudes and experiences.

This study explored Australian women's knowledge of, attitude towards and experience using emergency contraception (EC), particularly since the Emergency Contraceptive Pill (ECP) became available over-the-counter (OTC) from pharmacies in 2004.

Six focus groups were conducted in 2007 with 29 women aged 16-52 years. Then secondary analysis was conducted using data from 9145 ALSWH participants aged 28-33 years old who reported their ECP use in Survey 4. Using multinomial logistic regression, characteristics of the women who used ECP were compared with those who had not.

There was a clear lack of specific knowledge about EC. Most participants were positive about ECP being available OTC, while experiences obtaining ECP from pharmacies were both positive and negative. Most women said they would use EC again if required and would recommend it to a friend. Cost was seen as both a positive and negative barrier to use.

Watson M, Lucke J & Herbert D.

Changing patterns of contraceptive use in young Australian women: 1996 – 2006.

Patterns of change in contraceptive use among young women over ten years as they move from their late teens/early twenties to late twenties/early thirties were examined.

Participants were 6840 women from the ALSWH cohort born 1973-78, aged between 18-23 years when they were first surveyed in 1996, and then surveyed a further three times in 2000, 2003 and 2006. Contraception use increased and then decreased over the 4 surveys, as women became more likely to try to become pregnant. Use of oral contraceptives decreased over time, with other methods increasing in popularity. The important factors associated with use of condoms only, or a combination of methods, were being unpartnered, having had a birth, urban location and higher level of stress.

Patterns of contraceptive use change as women enter their twenties and thirties. Further work is needed to examine ongoing patterns of change as women complete their families in their thirties and forties. Accessible and effective contraceptive advice for women throughout their reproductive lives is important.

Powers J & Loxton D.

How do pregnant women respond to alcohol guidelines?

Australian alcohol guidelines for pregnant women have varied in recent decades, recommending total abstinence in 1992 and low levels of consumption in 2001. The 2008 guidelines will again recommend total abstinence. All guidelines advise against 'binge' drinking (5 or more drinks on one occasion). This study used ALSWH data to investigate pregnant women's responses to the guidelines.

Women aged 21-34 years were categorised according to when they had a child – either before or after the October 2001 guideline change. Alcohol consumption was defined as appropriate for either 1992 guidelines (Abstinence), 2001 guidelines (Low alcohol), low risk for non-pregnant women (up to 14 drinks a week) or risky (>14 drinks). Binge drinking was categorised as 5 or more drinks at least once a month.

The percentage of pregnant women who abstained or engaged in binge drinking were similar under both the abstinence or low alcohol guidelines, but women were more compliant with low alcohol guidelines than with abstinence guidelines.

Dolja-Gore X & Loxton D.

Prescribed medication use before, during and after pregnancy.

This study investigated the prevalence and patterns of prescribed medication use before, during and after pregnancy. Data from women in the ALSWH cohort born 1973-78 (aged 27-32) who had given birth to a child in 2005 were linked with Pharmaceutical Benefits Scheme (PBS) data to determine patterns of prescribed

medications.

Of the 530 women selected, 195 women had taken prescribed medication at some time during the pre-pregnancy period, during their pregnancy, or after the birth of their child. At least 33 different medications were used - antidepressant medication was the most commonly prescribed medication used at least once during the pre-pregnancy and pregnant period, and contraceptive medications were the most commonly prescribed in the year following birth. Although a decrease of medication use occurred whilst pregnant, widespread use of antidepressant medications among pre-pregnant, pregnant and post-pregnant women underscores the need for support services for women bearing children.

Herbert D, Lucke J & Dobson A.

Pregnancy losses in young Australian women: Findings from the Australian Longitudinal Study on Women's Health.

Little research has examined total pregnancy losses in the general population. Ten years of ALSWH data provide an opportunity to quantify pregnancy losses otherwise unobtainable at a national level.

ALSWH participants aged 28-33 years (n=9145) completed up to four mailed surveys. Women were categorised into mutually exclusive pregnancy outcome groups: birth, both birth and loss, loss, or no pregnancy. Fifty-nine per cent of women experienced pregnancy in the previous ten years: birth (28.4%); both birth and loss (20.4%); or loss (10.3%). Women in professional occupations and trade/service occupations were much more likely to have experienced pregnancy losses than women in manual occupations. Pregnancy losses were strongly associated with recent diagnosis of a STI, daily smoking, risky levels of alcohol consumption, and recent marijuana use.

For every woman in Australia aged 28-33 years who has given birth, there is a woman who has experienced a pregnancy loss. Based on self-report data, highly skilled occupations and negative lifestyle factors were strongly associated with pregnancy loss. Knowledge of modifiable lifestyle choices will improve pregnancy outcomes.

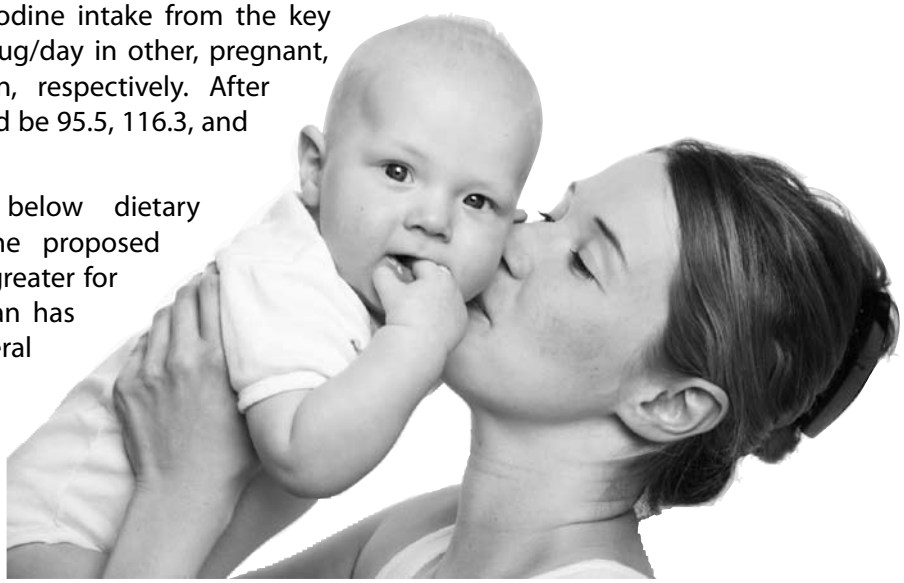
Mackerras D, Powers J, Boorman J, Loxton D & Giles G.

Estimating the impact on pregnant and post-partum women of fortifying bread with iodine.

Pregnant and breastfeeding women have increased iodine requirements. While pregnant women are advised to eat more dairy products (iodine source) and bread (fortification vehicle), their intake of long-lived fish (iodine source) should be limited. Here, ALSWH data were used to estimate the impact of fortification of bread with iodine in pregnant and breastfeeding women.

Women aged 25-30 years were categorised as pregnant, post-partum <6 months, post-partum 6-<12 months, or other when they completed a Cancer Council Victoria food frequency questionnaire. Iodine concentrations used by food standards authorities were applied to key foods to estimate iodine intakes before and after fortification. Pregnant and post-partum women reported eating more bread than other women. Currently, the median iodine intake from the key foods examined is 61.1, 74.0 and 74.0 ug/day in other, pregnant, and post-partum <6 months women, respectively. After fortification, the projected intakes would be 95.5, 116.3, and 117.1 ug/day, respectively.

Current iodine intakes are well below dietary recommendations. The impact of the proposed iodine fortification program would be greater for pregnant and post-partum women than has been previously estimated using general population intakes.



Powers J.

Contribution to Breakfast Session; Perinatal and Paediatric Epidemiology.

The first meeting of the Australasian Epidemiological Association Perinatal and Paediatric Special Interest Group was held at the Public Health Congress. Jennifer Powers posed the problem of which pregnancy to choose when investigating for example, patterns of alcohol use before, during and after pregnancy. The viewpoint of the expert panel was that use should be made of the maximum amount of data.

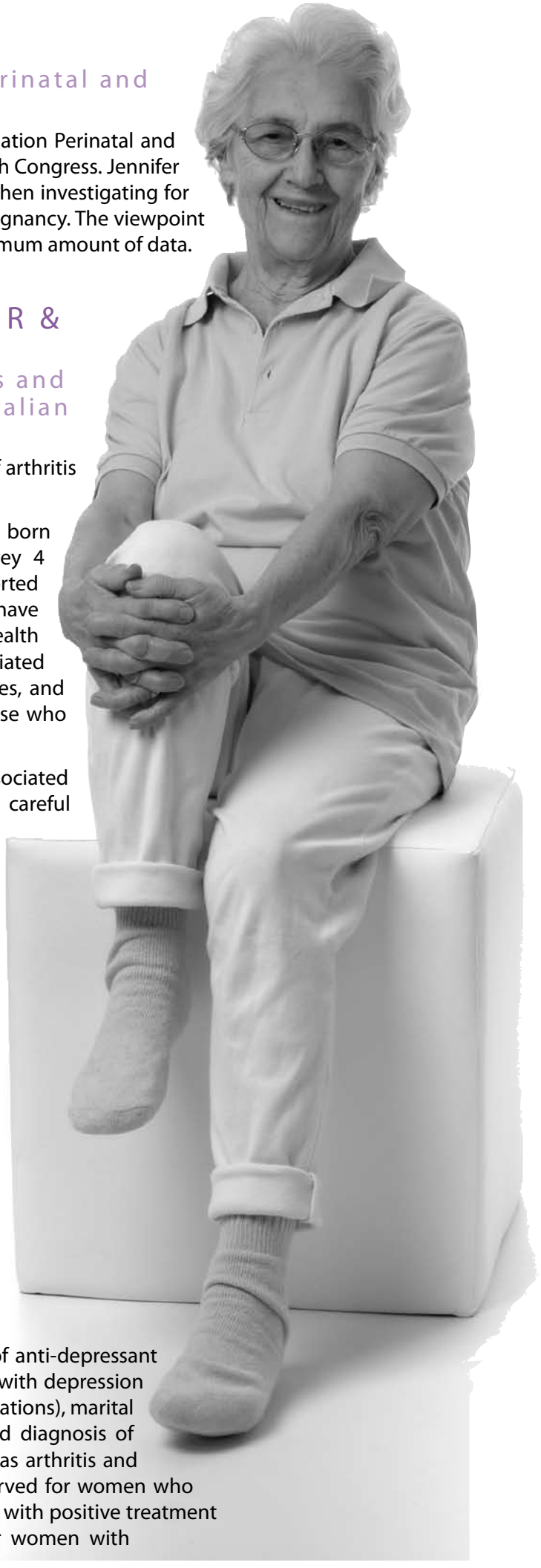
Parkinson L, Byles J, Gibson R & Robinson I.

Women and arthritis: Burden of illness and management of arthritis in older Australian women.

This research explored burden of illness and management of arthritis among older women.

Data were from the oldest cohort of the ALSWH, women born 1921-26. 7088 women from this cohort completed Survey 4 in 2005 when they were aged 77-85 years, and 63%, reported having arthritis. Women with arthritis were more likely to have other co-morbid diseases and conditions, to report poorer health and to score as depressed and anxious. Arthritis was associated with lower and decreasing pain and physical function scores, and decreasing social functioning over time compared with those who never reported having arthritis.

The demonstrated reduced and reducing quality of life associated with self-reported arthritis highlights the importance of careful and ongoing treatment and pain management for these conditions. The association of comorbidities with arthritis, particularly psychological comorbidities is a major concern, especially given the apparent association with chronic pain. While numerous cost-effective treatments are available for arthritis, the current data reveals that those interventions may be underutilised.



Byles J, Gibson R, Young A, Loxton D, Robinson I & Parkinson L.

Treatment for depression among older Australian women.

Use of anti-depressant medications among women in the ALSWH cohort born 1921-26 was explored. Data from 5598 consenting women, aged 79-84 years at Survey 4 in 2005 were linked with Pharmaceutical Benefits Scheme (PBS) data for 2002-2005.

18% were using anti-depressant medications in 2005. Use of anti-depressant medications was associated with area of residence (women with depression in rural areas were less likely to receive anti-depressant medications), marital status, socio-economic status, health care use, self-reported diagnosis of depression, and the presence of comorbid conditions such as arthritis and back pain. Improvement on mental health scores was observed for women who ceased medications during the 2002-2005 period, consistent with positive treatment outcomes for women in this group. However, many older women with

depression remain on anti-depressant medications for long periods, many remain untreated, and more may be undiagnosed.

Byles J, Dolja-Gore X & Young A.

Annual health assessments for older Australian women.

The ALSWH provides an ideal opportunity to measure use and outcomes of Enhanced Primary Care (EPC) health assessment items for women aged 75 years and over.

This analysis was of longitudinal survey and Medicare claims data from 4020 women in the ALSWH cohort born 1921-26, aged 75-78 years when EPC items were introduced.

58% had at least one health assessment between November 1999 and 2005, 13% had two assessments and 12% had three assessments. Having a health assessment was associated with having an underlying condition such as diabetes at baseline, with medication use and hospital admission, and with more frequent visits to a general practitioner There was some evidence of a slight survival advantage for women who had a health assessment. Among surviving women, there was a small trend towards a lesser decline in scores for women having more than one assessment.

Evidence from this large sample shows some small effects of EPC items. Ways to enhance the effectiveness and efficiency of health assessments need to be considered.

Berecki J, Hockey R & Dobson A.

Adherence to bisphosphonates by elderly women.

This study aimed to evaluate the relationship between adherence to bisphosphonates by postmenopausal women, and demographic, health and lifestyle factors prior to treatment, in Australia. Participants were elderly women (born 1921-26) participating in the ALSWH, who had filled a bisphosphonates prescription between 2002 and 2005 after a medication free interval of 180 days (N=788).

The median time until bisphosphonate discontinuation was 170 days. Accounting for socioeconomic status, the baseline variables that were associated with adherence failure were use of acid-related medications, and smoking; reporting high levels of physical activity was associated with better adherence.

Overall adherence to bisphosphonates among elderly Australian women with a fracture history was poor. Inquiring about acid-related disorders and health behaviour such as smoking and lack of physical activity could help the prescribing physician to identify women at risk for adherence failure.

Tooth L, Dobson A & Hockey R.

Relative survival as an indicator of generalizability for longitudinal studies of older people.

Generalizability of longitudinal studies is threatened by attrition. To determine representativeness, cohorts are often repeatedly compared with the population of interest on demographic/health characteristics. When data are missing, biases different to those from other attrition occur. 'Relative survival' is illustrated as a tool for assessing generalizability of results from a cohort of older people among whom death threatens generalizability.

Survival data from the ALSWH cohort born 1921-26 (n=12 416, aged 70-75 in 1996) were utilised. Linkage to the National Death Index after 10 years confirmed deaths, which were compared to national survival data. Relative survival over 10 years was estimated using observed survival in the cohort divided by expected survival among women of similar age.

ALSWH women showed a relative survival 8.5% above the general population. Within the State/Territories the relative survival advantage varied from -2% (ACT) to 18% (NT). Interval-specific relative survival remained constant over 10 years, suggesting they are not becoming more like the general population.

The older ALSWH cohort had better survival than the general Australian population: an expected finding given participation was voluntary. Significantly, relative survival varied between States, suggesting the factors determining participation varied between populations.

publications

published papers

Bell S & Lee C.
Transitions in emerging adulthood and stress among young Australian women.
International Journal of Behavioral Medicine, 2008; 14(4): 280-288.

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

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

Method: 8,749 young women participating in the Australian Longitudinal Study on Women's Health provided data at Survey 1, aged 18-23, and Survey 2, aged 22-27.

Results: Contrary to expectation, major life transitions were associated with low and reducing levels of stress. Cross-sectionally, living independently, not being a student, being married, and being a mother were associated with the lowest stress. Normative transitions such as moving out of home, finding work, or motherhood, were associated with no change in stress, while marrying was associated with a decrease in stress. Three types of transition were associated with increases in stress: non-normative transitions to more "adolescent" statuses, no transition; and transitions occurring earlier than normative.

Conclusion: High levels of stress at this age are associated with unusual changes, delays in changing, or changing earlier than one's peers. The normative transitions of young adulthood are not associated with high levels of stress.

Berecki J, Hockey R & Dobson A.
Adherence to bisphosphonates by elderly women.
Menopause, 2008; 15(5): 984-990.

Objective: The aim of this study was to evaluate the relationship between adherence to bisphosphonates by postmenopausal women, and demographic, health and lifestyle factors prior to treatment, in a country with universal subsidies for pharmaceutical costs.

Design: Elderly women participating in the Australian Longitudinal Study on Women's Health, who consented to linkage to Pharmaceutical Benefits Scheme claims data were included if they filled a bisphosphonates prescription between 2002 and 2005 after a medication free interval or 180 days (N=788). A Cox proportional hazards model was used to assess association of baseline variables with duration of adherence to bisphosphonates.

Results: The median time until bisphosphonate discontinuation was 170 days [95% confidence interval (CI) 154-186]. Accounting for socioeconomic status, the baseline variables that were associated with adherence failure were use of acid-related medications (hazard ratio (HR) =1.25, 95% confidence interval 1.01 to 1.55) and smoking (HR=1.82, 1.26 to 2.64); reporting high levels of physical activity was associated with better adherence (HR=0.69, 0.52 to 0.92).

Conclusion: Overall adherence to bisphosphonates among elderly Australian women with a fracture history was poor. Inquiring about acid-related disorders and health behaviour such as smoking and lack of physical activity could help the prescribing physician to identify women at risk for adherence failure.

Berecki J, Lucke J, Hockey R & Dobson A.
Transitions into informal care and out of paid employment of women in their 50's: A study of cause and effect.
Social Science & Medicine, 2008; 67(1): 122-127.

Data from the Australian Longitudinal Study on Women's Health were used to study the order of events leading to informal caregiving and changes in labour force participation in mid-aged women, taking into account health and socio-economic status. This analysis included women who responded to the third (2001) and fourth (2004) surveys and providing data for the caring and employment variables used (n= 9857). Caring was defined as providing care for an ill, frail or disabled person at least seven hours per week. Between 2001 and 2004, the proportion of women caring increased from 12% to 14% (difference 2.3 % [95% CI 1.6 to 3.1 %]). Paid employment participation decreased from 67% to 62% in 2004 (difference -5.2 % [95% CI -6.1 to -4.4 %]). Logistic regression model results showed that taking up caring between 2001 and 2004 was not statistically significantly associated with employment status in 2001. Among women who took up caring, however, hours spent in paid employment in 2001 was negatively associated with hours spent caring in 2004 (rs -0.10, p=0.004). Amongst women working in 2001, taking up caring between 2001 and 2004 was associated with reduced participation in paid employment (OR=1.63 [95% CI 1.34 to 1.98]). In conclusion, among mid-aged women, transitions into caregiving were irrespective of time spent in

paid employment, but were followed by a decrease in labour force participation. Policies could aim to support continuing labour force participation during caregiving by creating flexible working arrangements; re-employment programs could support women who quit work in getting back to paid employment after a period of caregiving

Brown W, Burton N & Rowan P.
Updating the evidence on physical activity and health in women.
American Journal of Preventive Medicine, 2007; 33(5): 404-411.

Objective: This narrative review updates evidence from the last 10 years on physical activity (PA) and the primary prevention of cardiovascular disease, diabetes, and cancer in women.

Methods: A literature search was conducted to identify prospective cohort studies published from January 1997 to February 2006.

Results: There were significant reductions in risk in 12 of 17 studies of cardiovascular outcomes (risk reductions ranging from 28% to 58%), in seven of eight studies of diabetes (14% to 46%), in seven of ten studies of breast cancer (11% to 67%), in two of two studies of endometrial cancer (68% to 90%), and in one of three studies of colorectal cancer (31% to 46%). There was mixed evidence for PA preventing gestational diabetes (three studies) and a range of other cancers (13 studies). Protective benefits for cardiovascular disease and diabetes were reported with as little as 60 minutes of moderate-intensity physical activity per week (240 Metabolic Equivalent (MET) minutes or 4 MET hours), with walking and moderate-intensity physical activity providing risk reductions comparable to those for the equivalent energy expenditure from more vigorous-intensity physical activity.

Conclusions: There is strong evidence of a role for PA in the primary prevention of cardiovascular disease, diabetes, and some cancers in women. There was no evidence of additional health benefits from vigorous-intensity PA, over and above those achieved from walking or moderate-intensity PA. This may be because, in most studies, there was limited reporting of vigorous PA by women. For some health outcomes, the amount of PA required for health benefits in middle-aged and older women might be lower than current national recommendations.

Brown WJ, Burton NW, Marshall AL & Miller YD.
Reliability and validity of a modified self administered version of the Active Australia Physical Activity survey in a sample of mid-aged women.
Australian and New Zealand Journal of Public Health, 2008; 32(6): 535-541.

Objective: To assess the test-retest reliability and validity of a modified self administered version of the Active Australia physical activity survey.

Methods: One hundred and fifty-nine mid-age women (54-59 years) completed a mailed physical activity questionnaire before recording daily pedometer step counts for seven consecutive days. A random subsample (n=44) also wore an accelerometer during this period. Participants then completed the physical activity questionnaire again. Spearman's ρ and per cent agreement were used to assess test-retest reliability. Self reported physical activity data (time 2) were compared with pedometer and accelerometer data using box plots and Spearman's correlations to assess validity.

Results: Median time between surveys was 13 days. Median frequency and duration of moderate and vigorous physical activity were the same at both surveys, but median walking frequency was slightly higher at time 2 than time 1. Reliability coefficients for frequency/time in each domain of physical activity ranged from 0.56-0.64 and per cent agreement scores ranged from 40% to 65% for the physical activity categories, and 76% for 'meeting guidelines'. Correlations (ρ) between self-reported physical activity and 1) weekly pedometer steps and 2) accelerometer data for duration of at least moderate intensity physical activity were 0.43 and 0.52 respectively. Conclusions: The measurement properties of this modified self-administered physical activity survey are similar to those reported for the original computer assisted telephone interview survey. Implications: This modified version of the Active Australia survey is suitable for use in self-administered format.

Brown WJ, Hockey R & Dobson A.
Physical activity, body mass index and health care costs in mid-age Australian women.
Australian and New Zealand Journal of Public Health, 2008; 32(2): 150-155.

Objective: This study examined the relationships between combined categories of physical activity (PA) and Body Mass Index (BMI) with health care costs in women and assessed the potential cost savings of improving PA and BMI in sedentary mid-age women.

Methods: Cross-sectional analysis of 2001 survey data linked to health service use data for the same year from 7,004 mid-age women (50-55 years) participating in the Australian Longitudinal Study on Women's Health.

Results: The mean (median; interquartile range) annual cost of Medicare-subsidised services was $542 (355; 156-693) per woman. Costs were 17% higher in obese than in healthy-weight women and 26% higher in sedentary than in moderately active women. For sedentary obese women, mean costs were 43% higher than in healthy weight, moderately active women. After adjustment for potential confounders, the relative risk

of 'high' claims (>= 15 claims per year) for overweight women who reported 'moderate' or 'high' PA were lower than for women with healthy BMI who reported no PA.

Conclusions and Implications: Lower PA and higher BMI are both associated with higher health care costs, but costs are lower for overweight active women than for healthy-weight sedentary women. At the population level these data suggest that there would be significant cost savings if all sedentary mid-age women could achieve at least 'low' levels of PA (60-150 minutes a week).

Clemens S & Matthews S.

Comparison of a food-frequency questionnaire method and a quantity-frequency method to classify risky alcohol consumption in women.

Alcohol & Alcoholism, 2007; 43(2): 223-229.

Aims: Population surveys use a variety of methods to collect data on alcohol consumption. Comparability of results across methods is a prime consideration. Different methods have been demonstrated to be robust in terms of ranking individuals' alcohol use, while results have been mixed regarding comparability in terms of volume of consumption. In Australia, evidence-based guidelines have been developed that identify critical thresholds of consumption that are associated with increased risk of alcohol related morbidity. This study investigated whether the identification of individuals consuming alcohol above these thresholds was consistent across two methods used to collect data on consumption.

Methods: The Australian Longitudinal Study of Women's Health (ALSWH) incorporated both a quantity-frequency (QF) method and a food-frequency questionnaire (FFQ) to collect data on alcohol consumption. Comparisons were made between these two methods on the ability to classify women consuming alcohol as risky (between 176 and 350 ml of pure alcohol weekly) and at high risk (greater than 350 ml of pure alcohol weekly) levels.

Results: The ranking of individuals was robust across methods. However, concordance in identifying risky/high-risk drinkers varied considerably based on the assumptions underlying the different methods used to calculate drinking volume using the FFQ. Similarly, the sensitivity and specificity of the FFQ methods compared to QF in terms of identifying risky/high-risk consumers were high but variable.

Conclusions: This study indicated that the proportion of respondents exceeding consumption thresholds was sensitive to the instrument used to collect data on alcohol intake. Quantifying such differences is important when making comparisons between surveys that use different methodologies.

Collins C, Young A & Hodge A.

Diet quality is associated with higher nutrition intake and self-rated health in mid-aged women.

Journal of the American College of Nutrition, 2008; 27(1): 146-157.

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.

Cooper R, Lucke J, Lawlor D, Mishra G, Chang J, Ebrahim S, Kuh D & Dobson A.

Socioeconomic position and hysterectomy: A cross-cohort comparison of women in Australia and Great Britain.

Journal of Epidemiology and Community Health, 2008; 62: 1057-1063.

Objectives: To examine the associations between indicators of socioeconomic position (SEP) and hysterectomy in two Australian and two British cohorts.

Study population: Women participating in the Australian Longitudinal Study on Women's Health (ALSWH), born 1921-1926 and 1946-1951, and two cohorts of British women, the British Women's Heart and Health Study and the MRC National Survey of

Health and Development, born at similar times (1920 to 1939 and 1946, respectively) and surveyed at similar ages to the ALSWH cohorts.

Methods: Relative indices of inequality were derived for own and head of household occupational class, educational level attained and age at leaving school. Logistic regression was used to test the associations between these indicators of SEP and self-reported hysterectomy and/or oophorectomy.

Results: Inverse associations between indicators of SEP and hysterectomy were found in both the Australian and British cohorts of women born in 1946 or later. There was also evidence of an inverse association between education and hysterectomy in the older Australian cohort. However, the associations in this older cohort were weaker than those found in the mid-aged Australian cohort. In the older British cohort, born in the 1920s and 1930s, little evidence of association between SEP in adulthood and hysterectomy was found.

Conclusions: These results suggest that inverse associations between indicators of SEP and hysterectomy are stronger in younger than in older cohorts in both Australia and the UK. They provide further evidence of the dynamic nature of the association between indicators of SEP and hysterectomy.

Ford J, Spallek M & Dobson A.
Self rated health and a healthy lifestyle are the most important predictors of survival in elderly women.
Age & Ageing, 2008; 37(2): 194-200.

Objective: to test the hypothesis that morbidity and health related behavioural factors are stronger than social factors as predictors of death among older women.

Methods: we used data from 12,422 participants in the Australian Longitudinal Study on Women's Health who were aged 70–75 in 1996. Proportional hazards models of survival up to 31 October 2005 were fitted separately for the whole cohort and those women who were initially in 'good health'.

Results: among the whole cohort, 18.7% died during the follow up period. The strongest predictor of death was 'poor' or 'fair' self-rated health (with 52.3% and 28.0%, respectively, of women in these categories dying). Among the women in 'good health' at baseline 11.5% died, with current cigarette smoking (hazard ratio HR = 2.19, 95% confidence interval (1.71, 2.81), physical inactivity (HR = 1.45 (1.17, 1.81)), and age (HR = 1.10 (1.04, 1.16) per year) as statistically significant predictors of death.

Discussion: among older women, current health and health related behaviours are stronger predictors than social factors of relatively early mortality. Adopting a healthier lifestyle, by doing more exercise and not smoking, is beneficial even in old age.

Furuya H, Young AF, Powers JR & Byles JE.
Alcohol consumption and physical health-related quality of life in older women using the transformation of SF-36 to account for death.
Japanese Journal of Alcohol & Drug Dependence, 2008; 43(2): 97-109.

Moderate alcohol consumption has been associated with health benefits in several studies, but few studies investigating such association for elders have been done. So, we explored the relationship between alcohol intake and changes in physical health-related quality of life HRQoL. As analyses of longitudinal HRQoL data excluding diseased participants produced overestimated results, we compared the methods with and without incorporating death and estimated valid physical HRQoL and its decline over time.

Study subjects were women from the Australian Longitudinal Study on Women's Health, ages 70-75 years at Survey 1 in 1996 (n =12 432), and were followed-up at 3 yearly intervals for 6 years. The level of alcohol consumption was divided into seven categories to identify possible harmful alcohol level for older women. We measured Physical Component Score (PCS) of Medical Outcomes Study Short-Form (SF-36), and applied the transformed PCS incorporating death as a valid score to estimate HRQoL changes for each alcohol group with adjustment for potential confounders.

Significant declines of values were observed and the values of 'non-drinker' and 'rare drinker' were lower than the other groups during 6 years in both PCS and the transformed PCS. Analysis of the PCS showed significant Alcohol × Time interaction effects for non-drinker and rare drinker groups, as the scores were overestimated towards higher values at Survey 2 due to loss to follow-up of women who died. In the transformed PCS, these interaction effects diminished, and a clearer dose-response relationship between alcohol and physical HRQoL was observed at the third survey.We examined the influence of deaths on the study conclusions with using PCS and its transformed value which included deaths. Being a nondrinker of alcohol was associated with greater risk of mortality and poorer physical HRQoL. Moderate alcohol consumption was not harmful, and may carry some health benefits for older women.

Heesch K, Byles J & Brown W.
Prospective association between physical activity and falls in community-dwelling older women.
Journal of Epidemiology and Community Health, 2008; 62(5): 421-426.

Objective: To explore associations between physical activity and risk of falls and fractured bones in community-dwelling older women.

Design, setting and participants: This was a prospective observational survey with 3- and 6-year follow-ups. The sample included 8188 healthy, community-dwelling women, aged 70-75 years in 1996, who completed surveys as participants in the Australian Longitudinal Study on Women's Health. Women who reported a recent serious injury from falling were excluded. Outcomes were reports of a fall to the ground, injury from a fall, and a fractured bone in 1999 and 2002. The main predictor variable was physical activity level in 1996, categorized based on weekly frequency as none/very low, low, moderate, high, and very high. Covariates were demographic and health-related variables. Logistic regression models were computed separately for each outcome in 1999 and 2002.

Main results: In multivariable models, very high physical activity was associated with decreased risk of reporting a fall in 1999 (odds ratio 0.67, 95% CI 0.47 to 0.95) and in 2002 (odds ratio 0.64, 95% CI 0.43 to 0.96). High/very high physical activity was associated with decreased risk of a fractured bone in 2002 (odds ratio 0.53, 95% CI 0.34 to 0.83). No significant association was found between physical activity and injury from a fall.

Conclusions: The results suggest that at least daily moderate- to vigorous-intensity physical activity is required for the primary prevention of falls to the ground and fractured bones in women aged 70-75 years.

Heesch K & Brown W.
Do walking and leisure-time physical activity protect against arthritis in older women?
Journal of Epidemiology and Community Health, 2008; 62(12): 1086-1091.

Objective: To examine dose-response relationships between both leisure-time physical activity (LTPA) and walking and 6-year incidence of self-reported arthritis in older women.

Design, setting and participants: Older participants in the Australian Longitudinal Study on Women's Health (aged 73-78 years in 1999) completed mailed surveys in 1999, 2002 and 2005. LTPA and walking were measured in 1999. Women were classified as cases if they reported in 2002 or 2005 diagnosis of, or treatment for, arthritis over the previous 3 years. Logistic regression modeling was used to examine associations between first (1) all LTPA and then (2) only walking and self-reported arthritis.

Main results: Data from 3563 women who did not report arthritis in 1999 were included in these analyses. Over the 6-year follow up, 41.1% of respondents reported arthritis. There was a clear inverse relationship between both LTPA and walking with odds of self-reported arthritis. Women who reported low (75-<150 minutes of moderate-intensity LTPA per week), moderate (150-<300 minutes), and high (≥ 300 minutes) LTPA levels had 20%, 31%, and 34% lower odds of reporting arthritis, respectively, than those who were sedentary (p<0.01). There was a 40% reduced odds of arthritis in women who reported at least 200 minutes of walking per week and no other LTPA. Tests for linear trend revealed a dose-response relationship between each activity variable and the outcome (p<0.001).

Conclusions: The results support an inverse dose-response relationship between both LTPA and walking and 6-year incidence of self-reported arthritis in older women.

Hure A, Young A, Smith R & Collins C.
Diet and pregnancy status in Australian women.
Public Health Nutrition, Epub July 23, 2008; 1-9.

Objective: To investigate and report the diet quality of young Australian women by pregnancy status.

Design: Pregnancy status was defined as pregnant (n 606), trying to conceive (n 454), had a baby in the last 12 months (n 829) and other (n 5597). The Dietary Questionnaire for Epidemiological Studies was used to calculate diet quality using the Australian Recommended Food Score (ARFS) methodology. Nutrient intakes were compared with the Nutrient Reference Values for Australia and New Zealand.

Setting: A population-based cohort participating in the Australian Longitudinal Study on Women's Health (ALSWH).

Subjects: A nationally representative sample of Australian women, aged 25 to 30 years, who completed Survey 3 of the ALSWH. The 7486 women with biologically plausible energy intake estimates, defined as .4.5 but ,20.0 MJ/d, were included in the analyses.

Results: Pregnancy status was not significantly predictive of diet quality, before or after adjusting for area of residence and socio-economic status. Pregnant women and those who had given birth in the previous 12 months had marginally higher ARFS (mean (SE): 30.2 (0.4) and 30.2 (0.3), respectively) than 'other' women (29.1(0.1)). No single food group accounted for this small difference. Across all pregnancy categories there were important nutrients that did not meet the current nationally recommended levels of intake, including dietary folate and fibre.

Conclusion: Women do not appear to consume a wider variety of nutritious foods when planning to become pregnant or during pregnancy. Many young Australian women are failing to meet key nutrient targets as nationally recommended.

Koloski N, Smith N, Pachana N & Dobson A.
Performance of the Goldberg Anxiety and Depression Scale in older women.
Age & Ageing, 2008; 37(4): 464-467.

Background: Measures to assess anxiety and depression

separately often incur difficulties due to overlap of these constructs, especially in older individuals. Using the Goldberg Anxiety and Depression Scale (GADS) we aimed to confirm the factor structure of the instrument in a large cohort of older Australian women, to validate the instrument against other self-report information, and to assess its association with a variety of health-related outcomes.

Methods: Participants were 7264 women (aged 75-82 years) enrolled in the Australian Longitudinal Study on Women's Health. Measures of anxiety and depression included the GADS, the mental health items of the Medical Outcomes Study SF-36, and self reported information on mental health diagnoses, symptoms and medications. The factor structure of the scale was examined using latent trait analysis, while receiver operating characteristic curves were used to explore the performance of the scale against other criteria.

Results: Latent trait analyses replicated prior findings demonstrating high correlations between anxiety and depression as measured by the GADS and suggesting a third factor related to sleeping problems. Receiver operating characteristic curves showed that a simple score formed by summing responses to GADS items had high sensitivity and specificity in relation to other measures of anxiety and depression.

Conclusions: This large study provides support for the hypothesis that anxiety and depression are not readily distinguishable entities in older women and that the GADS is a useful tool for measuring the composite construct for epidemiological studies.

Lowe J, Young A & Dolja-Gore X.
Costs of medications for older women.
Australian and New Zealand Journal of Public Health, 2008; 32(1): 89.

With chronic diseases such as diabetes on the increase the uptake of medications are required for patients to maintain a quality of life, these costs are unfairly incurred by older women. The mean co-payment medication costs to older women increased by $25.60 for women without diabetes and $29.75 for women with diabetes giving an 18% increase between 2004 and 2005 compared to aged pensions which had a 3% CPI increase.

Lucke J, Russell A, Tooth L, Lee C, Watson M, Byrne G, Wilson A & Dobson A.
Few urban-rural differences in older carers' access to community services.
Health Services Research, 2008; 32(4): 684-690.

Objective: To examine perceived adequacy of access to information and services, and perceived quality of health and community services, among older female carers across rural and urban areas throughout Australia.

Data Sources/Study Setting: Primary data collected as part of the ongoing Australian Longitudinal Study on Women's Health (ALSWH). Over 40 000 women were randomly selected from the Australian Medicare database in 1996, with intentional over-sampling in rural and remote areas.

Study Design: A nested cross-sectional substudy of 306 older women (aged 78-83 years), who indicated they were providing care for someone with a long term illness, disability or frailty.

Principal Findings: There were few reported differences between urban and rural older carers in their access to health and community services for the people they cared for. In fact, those in rural areas fared slightly better than those in urban areas in awareness of service availability and perceived quality of service.

Conclusions: Many older carers in both rural and urban areas do not access health and community services even when appropriate services are available. A better understanding is needed of how support can be delivered to complement older carers' existing arrangements.

McDermott L, Dobson A & Owen N.
Smoking reduction and cessation among young adult women: A seven-year prospective analysis.
Nicotine & Tobacco Research, 2008; 10(9): 1457-1466.

Aims: To examine prospectively, patterns of smoking behaviour and attributes associated with reductions in daily smoking and subsequent cessation over a seven-year period.

Design, setting and participants: Women aged 18-23 years in 1996 were randomly selected from the national health insurance database, which provides the most complete listing of Australian residents. Mailed questionnaires were distributed in 1996 (Survey 1), 2000 (Survey 2) and 2003 (Survey 3). The analysis sample was the 972 women who were daily smokers with complete data on smoking at Survey 1, and who participated in all three surveys.

Measurements: The main outcome variable was transitions in smoking behaviour between Surveys 1, 2 and 3, which included changes in the number of cigarettes smoked, changes to non-smoking and changes to non-daily smoking. Explanatory variables included prior smoking history, sociodemographic, lifestyle, psychosocial and health characteristics.

Findings: A change from daily to non-daily smoking at Survey 2 was the strongest predictor of cessation at Survey 3. Baseline smoking level was not a significant predictor of smoking cessation. Becoming married increased the odds of cessation. Over the seven-year period, one-quarter of daily smokers reduced and maintained a lower level of smoking. Reducers were most likely to have been heavy smokers and to have used illicit drugs, compared to those who stopped

smoking.

Conclusions: Reducing from daily to non-daily smoking appears to be a more effective quitting strategy than reducing the number of cigarettes smoked daily. This observation warrants verification in other populations and in experimental studies.

Pachana N, Smith N, Watson M, McLaughlin D & Dobson A.

Responsiveness of the Duke Social Support Sub-scales in older women.

Age and Ageing, 2008; 37(6): 666-672.

Objective: An abbreviated form of the Duke Social Support Index (DSSI) as used in a large longitudinal study of older Australian women was examined with respect to factors that might be expected to affect social support for older women over time.

Methods: In this large cohort study two sub-scales of the DSSI, one describing the size and structure of the social network (four items) and the other perceiving satisfaction with social support (six items), were analysed in relation to outcome and exploratory variables.

Results: Over a 3-year period, the network score increased among women whose life circumstances meant that they were likely to receive more support (e.g. recent widowhood). Likewise, those women at risk of becoming more socially isolated (e.g. those with sensory loss) became less satisfied with their social support. Changes in both measures were tempered by women's mental health and optimism.

Conclusions: Although the sub-scales of the DSSI may not fully reflect the complexity of social support paradigms, they are responsive to changes in the lives of older women and can be useful in community-based epidemiological studies.

Powers J & Young A.

Longitudinal analysis of alcohol consumption and health of middle-aged women in Australia.

Addiction, 2008; 103: 242-432.

Aims: To assess the prospective association between alcohol consumption and self-rated health: in particular whether there is a relationship between stable alcohol intake and health; whether health is affected by changes in alcohol consumption; whether having a chronic condition alters the relationships between stable and changing alcohol intake and health; and whether the health of longer-term abstainers is different from more recent and intermittent abstainers.

Design: Longitudinal analysis of a prospective, population-based study.

Setting: Australia.

Participants: A total of 13 585 randomly selected 45–50-year-old women surveyed in 1996, of whom 9396 (69%) were resurveyed in 1998, 2001 and 2004.

Measurements: Estimates for the General Health subscale of the SF-36 for different levels of alcohol intake adjusted for having a chronic condition, depression, smoking and other factors.

Findings: Longitudinal models of consistent alcohol intake showed mean scores for general health of moderate drinkers were significantly better than that of non-drinkers [mean difference = 4.3, standard error (SE) = 0.61], occasional drinkers (mean difference = 3.1, SE = 0.52) and heavy drinkers (mean difference = 2.1, SE = 1.00). Among moderate drinkers, a decrease or variation in alcohol consumption was associated with a significant decline of three to four points in general health. Similar results were obtained when women with an existing chronic condition were excluded from these models. The health of recent abstainers and intermittent drinkers was the same as longer-term abstainers.

Conclusions: Consistent moderate drinkers had the best health even after adjustment for having a chronic condition, depression and life-style factors. Poorer health was associated with decreased alcohol intake among occasional and moderate drinkers (SE=0.52), and heavy drinkers (mean difference=2.1 SE=1.00). Among moderate drinkers, a decrease or variation in alcohol consumption was associated with a significant decline of three to four points in General Health. Similar results were obtained when women with an existing chronic condition were excluded from these models. The health of recent abstainers and intermittent drinkers was the same as longer-term abstainers.

Schofield M & Khan A.

Australian women who seek counselling: Psychosocial, health behaviour and demographic profile.

Counselling and Psychotherapy Research, 2008; 8(1): 12-20.

Despite high rates of psychological distress in the Australian community, particularly among middle-aged women, use of counselling and psychological services is relatively low. This study examined self-reported use of counselling in the past year among a population-based sample of 11,201 Australian women aged 50-55, and describes the profile of women who seek counselling. Using multivariate analyses to control confounding, women who had consulted a Counsellor/Psychologist/Social Worker in the last year (6.9%) were found to have an increased odds of higher stress, life satisfaction and perceived control, and lower optimism. They also had higher odds of experiencing more life events over the past 12 months, changed health status compared with a year ago, taking more prescribed medications, living in urban versus rural areas, having university vs no formal education, living alone or with others rather than spouse/partner, and have ancillary versus full private

health insurance. This multivariate profile is discussed in relation to the delivery, marketing and accessibility of counselling services in the Australian community. The implications for counsellor training and the future development of the profession are also discussed.

Schofield M & Khan A.

Australian women seeking counseling have higher use of health services.

Women's Health Issues, 2008; 18(5): 399-405.

Purpose: Despite a high prevalence of psychological distress and poor mental health in the Australian community, use of counseling services is very low. There has been only limited research examining the profile of those who do access counseling services, mainly in terms of demographic and health behaviour variables. To extend our understanding of those who currently access counseling services, this study aimed to examine the broader pattern of health service utilisation by women who consulted counselors, psychologists or social workers in the past year compared with those who did not, among a population-based sample of middle-aged Australian women, and to determine whether health service utilization was independently associated with use of counseling services controlling for other known predictors.

Methods: The cross-sectional population-based mail survey data came from the third survey of the mid-aged cohort of the Australian Longitudinal Study on Women's Health, conducted in 2001. The sample comprised 11,201 women aged 50–55. The main study variable was a question asking whether they had consulted a Counselor/Psychologist/Social Worker in the past year.

Findings: Only 6.9% of women had consulted a Counselor/Psychologist/Social Worker in the past year. After controlling for self-reported mental health status, health behaviors and demographic variables in multivariate analysis, consulting a Counselor/Psychologist/Social Worker in the past year was significantly and positively associated with consultations with general practitioners (5 or more consultations, OR 4.14, 95% CI 2.35-7.27, P<0.0001), specialist (3 or more consultations, OR 2.09, 95% CI 1.66-2.63, P<0.0001), and hospital doctor (OR 1.35, 95% CI 1.10-1.66, P=0.004). Use of counseling services was not associated with use of other allied and complementary health services in multivariate analyses.

Conclusions: Further research is needed to determine whether the strong independent link between self-reported use of counseling and other medical and health services among middle-aged women is best explained by general practice referral patterns, availability of services, economic factors, or different help-seeking patterns among women.

Taft A & Watson L.

Depression and termination of pregnancy (induced abortion) in a national cohort of young Australian women: The confounding effect of women's experience of violence.

BMC Public Health, 2008; 8(1): 75.

Background: Termination of pregnancy is a common and safe medical procedure in countries where it is legal. One in four Australian women terminates a pregnancy, most often when young. There is inconclusive evidence about whether pregnancy termination affects women's rates of depression. There is evidence of a strong association between partner violence and depression.

Objective: To examine the associations with depression of women's experience of violence, pregnancy termination, births and socio-demographic characteristics, among a population-based sample of young Australian women.

Methods: The data from the Younger cohort of the Australian Longitudinal Study on Women's Health comprised 14,776 women aged 18-23 in Survey I (1996) of whom 9683 aged 22-27 also responded to Survey 2 (2000). With linked data, we distinguished terminations, violence and depression reported before and after 1996. We used logistic regression to examine the association of depression (CES-D10) as both a dichotomous and linear measure in 2000 with pregnancy termination, numbers of births and with violence separately and then in mutually adjusted models with sociodemographic variables.

Results: 30% of young women were depressed. Eleven percent (n=1076) reported a termination by 2000. A first termination before 1996 and between 1996 and 2000 were both associated with depression in a univariable model (OR 1.37, 95%CI 1.12-1.66; OR 1.52, 95%CI 1.24-1.87). However, after adjustment for violence, numbers of births and sociodemographic variables (OR 1.22, 95%CI 0.99-1.51) this became only marginally significant, a similar association with having two or more births (1.26, 95%CI 1.00-1.58). In contrast, any form of violence but especially that of partner violence in 1996 or 2000, was significantly associated with depression: in univariable (OR 2.31, 95%CI 1.97-2.70 or 2.45, 95% CI 1.99-3.04) and multivariable models (AOR 2.06, 95%CI 1.74-2.43 or 2.12, 95%CI 1.69-2.65). Linear regression showed a four fold greater effect of violence than termination or births.

Conclusions: Violence, especially partner violence, makes a significantly greater contribution to women's depression compared with pregnancy termination or births . Any strategy to reduce the burden of women's depression should include prevention or reduction of violence against women and strengthening women's sexual and reproductive health to ensure that pregnancies are planned and wanted.

Tooth L, Hockey R, Byles J & Dobson A.
Weighted multi-morbidity indexes predict mortality, health service use and health-related quality of life in older women.
Journal of Clinical Epidemiology, 2008; 61(2): 151-159.

Objective: To develop indexes of multi-morbidity, based on self-reported data, to predict mortality, health service use, help with activities of daily living (ADL) and health-related quality of life (HRQOL) in older women.

Study design and setting: Cross sectional survey of 10,434 women, aged from 73-78, in the Australian Longitudinal Study on Women's Health in 1999, with mortality follow-up to 2005. For analysis, the sample was equally split into a development and validation sample. Weighted and unweighted multi-morbidity indexes were developed and tested.

Results: Outcomes ranged from 14% for mortality to 47% for specialist doctor visits. Mortality was predicted by heart disease, stroke, low iron, diabetes, cancer (non-skin), bronchitis/emphysema and Alzheimer's disease. Different patterns of morbidities were associated with the other outcomes. Weighted and unweighted multi-morbidity index scores were linearly related to increasing risk of each outcome. For each outcome, the weighted scores fitted the data better and had a wider range of possible values.

Conclusion: These multi-morbidity indexes predict mortality, health service use, help with ADL, and HRQOL in older women. The indexes could be used as covariates in research with weighted scores having a better chance of discriminating between patient groups than unweighted scores.

Tooth L, Russell A, Lucke J, Byrne G, Lee C, Wilson A & Dobson A.
Impact of cognitive and physical impairment on carer burden and quality of life.
Quality of Life Research, 2008; 17(2): 267-273.

Background and purpose: How the cognitive and/or physical impairment experienced by care recipients impacts on their carers is not well understood. This study investigated the effect of type of impairment of care recipients on the level of burden and quality of life (QOL) of elderly Australian carers.

Methods: A nested cross-sectional substudy of 276 older women (aged 78-83 years) enrolled in the Australian Longitudinal Study on Women's Health, who indicated they were providing care for someone living with them.

Results: In this nationally representative sample of elderly women carers, 60% were looking after people (predominantly their husbands) who had both cognitive and physical impairments. Carers of people with both types of impairments had higher scores for objective burden of caring than those caring for people with either type of impairment alone. In contrast, scores for limitations on their own lives were higher among women caring for people with cognitive impairments (with or without physical impairments).

Conclusions: The majority of elderly women who are caring for someone else are likely to suffer multifaceted burdens of caring.

van Poppel M & Brown W.
"It's my hormones doctor" – does physical activity help with menopausal symptoms?
Menopause - Journal of the North American Menopause Society, 2008; 15(1): 78-85.

Background: Many women experience health problems when going through menopause, and these health problems may result in a substantial reduction in quality of life. There are some indications that physical activity may play a role in ameliorating menopausal symptoms, but there is conflicting evidence about this.

Objective: To assess the relationship between changes in physical activity and self-reported vasomotor, somatic and psychological symptoms.

Design: Data from the third (2001) and fourth (2004) surveys of the Australian Longitudinal Study on Women's Health (ALSWH) were used. Data from 3,330 mid-age women were included in the analyses. In linear regression models, the relationship between changes in physical activity of at least moderate intensity and total menopausal symptoms, vasomotor, somatic and psychological symptoms was determined.

Results: Physical activity was not associated with total menopausal symptoms, nor with vasomotor or psychological symptoms. A weak association with somatic symptoms (B = -0.003; 95% CI: -0.005 - -0.001) was found. Weight gain was associated with increased total, vasomotor and somatic symptoms. Weight loss was associated with a reduction in total and vasomotor symptoms.

Conclusion: Changes in physical activity were not related to vasomotor or psychological symptoms, and only marginally to somatic symptoms. Changes in weight showed a stronger relationship with menopausal symptoms. Relationships between weight change and menopausal symptoms merit further exploration.

published book chapter

Shi, Z & Byles J.
Fruit and vegetable consumption among mid-age and older women in Australia.
In Nancy E. Bernhardt and Artur M. Kasko (Eds.), *Nutrition for middle aged and elderly.* (pp.299-317). New York: Nova Science Publishers.
No abstract available.

published conference proceedings

Byles J & Brown W.
The impact of women's weight on health outcomes: A problem for now and in the future.
13th National Conference on Health Outcomes Australian Health Outcomes Collaboration , 2008.
No abstract available.

Byles J, Millar C, Sibbritt D & Chiarelli P.
Living with urinary incontinence: A longitudinal study of older women.
13th National Conference on Health Outcomes Australian Health Outcomes Collaboration, 2008.
No abstract available.

published reports

Brown WJ, Burton NW & Heesch KC.
Physical activity and health in mid aged and older Australian women.
Report prepared for The Office for Women, Department of Families, Housing Communities and Indigenous Affairs, July 2007. ISBN: 978-1-921380-77-8.
See: http://www.ofw.facs.gov.au/publications/physical_activity/physical_activity_report.pdf

accepted papers

Adams J, Sibbritt D & Young A.
A longitudinal analysis of older Australian women's consultations with complementary and alternative medicine (CAM) practitioners, 1996-2005.
Age & Ageing, in press.
Objectives: To determine the factors associated with complementary and alternative medicine (CAM) use among older Australian women over time.

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

Subjects: 12 432 women aged 70-75 years (in 1996), randomly selected from the Medicare database, with over-sampling of women from rural and remote areas of Australia.

Main outcome measures: Consultation with an alternative health practitioner in the twelve months prior to each survey.

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

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

Ball K, Burton NW & Brown WJ.
A prospective study of overweight, physical activity and depressive symptoms in young women.
Obesity, in press.
Objective: To examine prospective associations of body mass index (BMI), physical activity (PA), changes in BMI, and changes in PA, with incident depressive symptoms.

Research Methods and Procedures: This three-year prospective study used self-reported data on height, weight, PA, selected sociodemographic and health variables and depressive symptoms (CESD-10) provided by 6,677 young adult women (22-27 years in 2000) participating in the Australian Longitudinal Study on Women's Health (ALSWH).

Results: Odds of developing depressive symptoms were higher in overweight (OR 1.22, 95% CI 1.03-1.45) and obese (OR 1.34, 95% CI 1.07-1.67) women than in healthy weight women, and lower in active than in sedentary women. Changes in BMI were significantly

associated with increased risk of depressive symptoms, and sedentary women who increased their activity had lower risk of symptoms than those who remained sedentary. Increases in activity were protective against depressive symptoms regardless of BMI changes, except for those women who increased BMI by more than 10%, amongst whom risk for depressive symptoms was comparable with those who remained sedentary.

Conclusions: Overweight and obese young women are at risk of developing depressive symptoms. PA appears to be protective against the development of depressive symptoms associated with minor weight gain.

Carpenter C.

Sexual orientation, income, and non-pecuniary economic outcomes: New evidence from young lesbians in Australia.

Review of Economics of the Household, in press.

Although there is a growing international literature examining the relationship between sexual orientation and income or wages, there is far less evidence on whether sexual minorities experience systematically different non-pecuniary economic outcomes. I use confidential representative data on over 9 000 young Australian women age 22-27 with information on self-reported sexual orientation, income, and non-pecuniary economic outcomes such as: workplace harassment, job search difficulty, work stress, and job satisfaction. After controlling for demographic and work characteristics, I find that in comparison to heterosexual women the young lesbians in my sample: (1) have lower personal incomes; (2) have significantly higher odds of reporting distressing harassment at work, difficulty finding a job, losing a job, and decreased income; and (3) are significantly more dissatisfied with and report more stress about economic aspects of their lives (e.g. work, career, money). Differentials for non-economic aspects of life are generally smaller. These results for young lesbians in Australia suggest that lesbians are not a universally "privileged" minority and highlight the need for more research into lifecycle variations into both pecuniary and non-pecuniary aspects of economic wellbeing.

Herbert D, Lucke J & Dobson A.

Pregnancy losses in young Australian women: Findings from the Australian Longitudinal Study on Women's Health.

Women's Health Issues, in press.

Little research has examined total pregnancy losses in the general population. Ten years of data from an Australian cohort study provide an opportunity to quantify pregnancy losses otherwise unobtainable at a national level. Participants in the Australian Longitudinal Study on Women's Health (ALSWH) aged 28-33 years (n=9145) completed up to four mailed surveys. The women were categorised into mutually exclusive pregnancy outcome groups: birth, both birth and loss, loss, or no pregnancy. Associations between pregnancy outcomes and health-related factors were analysed by logistic regression. Fifty-nine percent (59.1%) of women experienced pregnancy in the previous ten years: birth (28.4%); both birth and loss (20.4%); or loss (10.3%). Women in professional occupations (OR 5.51, 95% CI 3.88-7.83) and trade/service occupations (OR 3.84, 95% CI 2.74-5.38) were much more likely to have experienced pregnancy losses than women in manual occupations. Pregnancy losses were strongly associated with recent diagnosis of a STI (OR 2.69, 95% CI 1.49-4.85), daily smoking (OR 2.15, 95% CI 1.53-3.03), risky levels of alcohol consumption (OR 2.66, 95% CI 1.37-5.16), and recent marijuana use (OR 4.85, 95% CI 3.34-7.04). For every woman in Australia aged 28-33 years who has given birth, there is a woman who has experienced a pregnancy loss. Based on self-report data, highly skilled occupations and negative lifestyle factors were strongly associated with pregnancy loss. Knowledge of modifiable lifestyle choices will improve pregnancy outcomes. These findings provide a comprehensive review of reproductive histories of women prior to potential experiences of infertility beyond 35 years of age.

Lee C, Ford J & Gramotnev H.

The Life Control Scale: Validation with a population cohort of middle-aged Australian women.

International Journal of Behavioral Medicine, in press.

Objective: The concept of perceived control is central to many theories of physical and emotional wellbeing. However, existing measures are lengthy and generally focus on job control. In epidemiological research, brief measures and those which can be applied across entire populations are needed. Among women in particular, a substantial minority have no paid work, while most also have major unpaid family commitments which may affect wellbeing through their effect on control. Thus, we evaluated the six-item Life Control Scale (Bobak, Pikhart, Hertzman, Rose & Marmot, 1998) with a population-based sample of middle-aged women.

Methods: A population-based sample of 11,223 women aged 50 to 55, participating in the Australian Longitudinal Study on Women's Health, completed the Life Control Scale as part of an omnibus survey of health and psychosocial factors.

Main Results: The scale was demonstrated to be unifactorial and internally reliable, and to show the expected relationships with several measures of socioeconomic position, physical health, and mental health.

Conclusions: The Life Control Scale is brief, valid, and broadly applicable in epidemiological research.

Loxton D, Powers J, Schofield M, Hussain R & Hosking S.

Inadequate cervical cancer screening among mid-aged Australian women who have experienced partner violence.

Preventive Medicine, in press.

Objectives: Partner violence is linked to cervical cancer and other gynaecological conditions. However, results of current research into associations between partner violence and cervical cancer screening have been inconclusive. Therefore, the current research investigates the association between partner violence and inadequate cervical cancer screening.

Methods: Participants were 7312 women aged 45–50 years who responded to the Australian Longitudinal Study on Women's Health population-based surveys in 1996 and 2004. The women self-reported frequency of Pap smears via mailed questionnaire.

Results: Women who had experienced partner violence at least eight years earlier, compared with those who had not, were more likely to report current inadequate screening (OR: 1.42, 95%CI: 1.21; 1.66). After adjusting for known barriers to preventive screening (education, income management, marital status, general practitioner visits, chronic conditions) and depression, partner violence was independently associated with inadequate Pap tests (OR: 1.20, 95%CI: 1.01; 1.42). This association was no longer significant once access to a GP of choice was added to the model (OR: 1.18, 95%CI: 0.99; 1.40).

Conclusions: The significance of this study lies not just in confirming a negative relationship between cervical cancer screening and partner violence, but in suggesting that good access to a physician of choice appears to significantly decrease this negative relationship.

McDermott L, Dobson A & Owen N.

Determinants of continuity and change over 10 years in young women's smoking.

Addiction, in press.

Introduction: Few prospective studies have examined factors associated with smoking behaviour among young adult women. We used data from a population-based, prospective study of women initially aged 18-23 years, to examine continuity and change in smoking behaviour and associated attributes over 10 years.

Methods: Participants in the Australian Longitudinal Study on Women's Health completed postal questionnaires in 1996, 2000, 2003 and 2006. The analysis sample was 6840 women who participated in all surveys and provided complete smoking data. Multiple logistic regression models were used to examine attributes that differentiated continuing smokers from quitters; relapsers from ex-smokers; and, adopters from never smokers. Explanatory variables included smoking history, demographic, psychosocial, lifestyle-risk behaviour and life-stage transition factors.

Results: Over the 10 years, 23% of participants either quit, re-started, adopted, or experimented with smoking. Recent illicit drug use and risky or high-risk drinking predicted continued smoking, relapse and smoking adoption. Marriage or being in a committed relationship was significantly associated with quitting, remaining an ex-smoker and not adopting smoking. Living in a rural or remote area and lower educational attainment were associated with continued smoking; moderate and high physical activity levels were positively associated with remaining an ex-smoker.

Conclusions: Lifestyle and life-stage factors are significant determinants of young women's smoking behaviour. Future research needs to examine the inter-relationships between tobacco, alcohol and illicit drug use, and to identify the determinants of continued smoking among women living in rural and remote areas. Cessation strategies could examine the role of physical activity in relapse prevention.

Polimeni A, Austin S & Kavanagh A.

Sexual orientation and weight, body image and weight control practices among young Australian women.

Journal of Women's Health, in press.

Objective: We compare weight, body image and weight control practices of young adult Australian women according to sexual orientation.

Methods: Cross-sectional analyses of the second survey of 9683 young adult women in the Australian Longitudinal Study on Women's Health (ALSWH); the weight, weight control practices, and body image of exclusively heterosexual, mainly heterosexual, bisexual and lesbian women were compared.

Results: Lesbians were less likely to be dissatisfied with their body shape (OR 0.54, 95% CI 0.32-0.92) than exclusively heterosexual women. Compared with exclusively heterosexual women, bisexual women were more likely to weight cycle (OR 2.22 95% CI 1.22-4.03) and mainly heterosexual and bisexual women were more likely to engage in unhealthy weight control practices such as smoking (mainly heterosexuals: OR 1.83, 95% CI 1.38-2.44 and bisexuals: OR 3.80, 95% CI 1.94-7.44), and cutting meals (mainly heterosexuals: OR 1.58, 95% CI 1.23-2.02 and bisexual women: OR 3.45, 95% CI 1.82-6.54); mainly heterosexual women were more likely to vomit (mainly heterosexuals: OR 2.41, 95% CI 1.73-3.36) and use laxatives (mainly heterosexuals: OR 1.56, 95% CI 1.12-2.19).

Conclusions: Future research should explore why bisexual and mainly heterosexual women are at higher risk of disordered eating behaviours. Understanding why lesbians have a healthier body image would also provide insights into how to improve the body image of other groups. It is critical that public health policy and practice addresses less healthy weight control practices

of sexual minority groups.

Rowlands I & Lee C.

Correlates of miscarriage among young women in the Australian Longitudinal Study on Women's Health.

Journal of Reproductive and Infant Psychology, in press.

While evidence suggests that miscarrying women experience poor mental health, the research is limited and comparison groups are frequently unrepresentative or lacking altogether. The current study examined the health and wellbeing of miscarrying women in relation to their peers by comparing them on selected relevant sociodemographic, gynaecological, psychological and health behaviour variables. Survey 3 of the Younger cohort of the nationally representative Australian Longitudinal Study on Women's Health was used to identify 998 women aged 24-31 who reported ever having had a miscarriage, and 8083 women who reported never having had a miscarriage. Although univariate analyses indicated that women who had had miscarriages experienced poorer mental health, multivariate analysis indicated that these effects were explained by sociodemographic and lifestyle differences. Stepwise logistic regression showed that miscarrying women were more likely to be married, to have had a child, to be current or ex smokers and to be not using contraception, to have lower levels of education; and to be of low socio-economic status. These results indicate that the strongest correlates of miscarriage among young women are those associated with preparing for, or experiencing, motherhood, and it may be that these factors rather than the miscarriage itself explain any excess of mental health problems in this population.

Tudor-Locke C, Burton NW & Brown WJ.

Leisure activity and occupational sitting: Associations with daily steps and body mass index in mid-aged Australian women.

Preventive Medicine, in press.

Objective. To assess whether combinations of leisure-time physical activity (PA) and occupational sitting were associated with steps/day and objectively measured body mass index (BMI) in women aged 54–59 years.

Methods. In 2005, 158 women (age=56.4±1.4) living in Brisbane, Australia, were measured for height and weight, wore a pedometer for 7 days, and reported frequency and duration of leisure-time PA and extent of occupational sitting. Four groups were formed: (1) sufficiently active and some/little/no occupational sitting (n=52); (2) sufficiently active and mostly/all occupational sitting (n=29);(3) insufficiently active and some/little/no occupational sitting (n=43); and (4) insufficiently active and mostly/all occupational sitting (n=34). Analysis of variance (ANOVA) was used to examine group differences in mean steps/day and BMI.

Results. Mean±standard deviation (SD) steps/day for each group (indicated by numerical order above) was: (1) 9997±2854; (2) 9424±3120; (3) 8995±2965; (4) 7276±2816 [$F(3,154)=6.139$, $p=.001$]. BMI (kg/m^2) was: (1) 25.5±3.9); (2) 26.9±4.1; (3) 26.5±4.7; (4) 29.7±7.9 [$F(3,154)=4.57$, $p=.004$]. Mean steps/day were significantly lower, and BMI significantly higher, in group 4 than in all other groups. No other differences were significant.

Conclusions. These cross-sectional data suggest that it might be important to consider both leisure-time PA and occupational sitting when considering strategies to increase steps/day and promote healthy BMI in mid age women.

Weisberg E, Bateson D, Read C, Estoesta J & Lee C.

Fertility control? Middle-aged Australian women's retrospective reports of their pregnancies.

Australian and New Zealand Journal of Public Health, in press.

Objective: To assess mid-age Australian women's retrospective reports of the intendedness and wantedness, and degree of happiness, associated with their pregnancy histories.

Methods: A self-report survey was sent to 1000 participants in the Mid-Age cohort of the Australian Longitudinal Study on Women's Health.

Results: Responses from 811 women (81%) showed that, although 32% of first pregnancies were unplanned and 29% were unwanted, most women recall being happy with their pregnancies and termination rates were very low. The second pregnancy was associated with the highest levels of happiness, planning and wantedness.

Conclusions: While the majority of mid-age women report having been happy to be pregnant, and the majority of pregnancies are described retrospectively as planned and wanted, a significant proportion of pregnancies are unwanted, unplanned, or resulting from unintended contraceptive failure. Implications: The data support the continuing need for widely available, affordable and sensitive fertility control services.

conference presentations

Berecki J, Hockey R & Dobson A.
Adherence to bisphosphonates by elderly women.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Berecki J.
Hysterectomy and weight gain.
13th National Conference on Health Outcomes, Canberra, ACT, 1 May 2008.

Brown WJ.
Bypassing blowouts: Keeping a lid on Queensland's health costs.
Invited presentation. Science in Parliament (Queensland). 2008 Science in Parliament Program, Brisbane, Qld, 14 May, 2008.

Brown WJ & Burton NW.
Physical activity and health in women: Updating the primary prevention evidence.
2008 International Convention on Science, Education, and Medicine in Sport, Guangzhou China, 1 - 4 August, 2008.

Brown W & Chang P.
How much physical activity to prevent weight gain?
Sports Medicine Australia 37th Annual State Conference, Surfers Paradise, Qld, 24 May 2008.

Brown W, Hockey R & Dobson A.
Health care and pharmaceutical costs associated with physical inactivity: Interactions with obesity.
2nd International Congress on Physical Activity and Public Health, Amsterdam, Netherlands, 13 - 16 April 2008.

Burton NW, Tudor-Locke C & Brown WJ.
Leisure activity and occupational sitting: Associations with daily steps and body mass index in mid-aged women.
ASICS Conference of Science and Medicine in Sport, Hamilton Island, Qld, 16 - 18 October, 2008.

Byles J & Brown W.
The impact of women's weight on health outcomes: A problem for now and the future.
13th National Conference on Health Outcomes, Canberra, ACT, 1 May 2008.

Byles J, Dolja-Gore X & Young A.
Annual health assessments for older Australian women.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Byles J, Millar C, Sibbritt D & Chiarelli P.
Living with urinary incontinence: A longitudinal study of older women.
13th National Conference on Health Outcomes, Canberra, ACT, 1 May 2008.

Byles J, Robinson I, Loxton D, Parkinson D, Gibson R & Young A.
Treatment for depression among older Australian women.
Population Health Congress 2008. Brisbane, Qld, 6 - 9 July 2008.

Byles J.
Promoting healthy ageing.
National Public Health Reform Summit, Sydney, NSW, 7 August 2008.

Byles J.
Ageing population and gender issues.
4th Annual Australia's Ageing Population Summit, Melbourne, Vic, 23 - 24 July 2008.

Byles J.
Special session: Longitudinal studies of ageing: A key to optimal ageing.
4th World Ageing & Generations Congress, St Gallen, Switzerland, 28 - 30 August 2008.

Byles J.
Obesity: The new global threat to healthy ageing and longevity.
Ageing and Globalization: Identifying Gaps, Challenging Perspectives, Sydney, NSW, 25 September 2008.

Byles J.
Women's increasing weight: A threat to healthy ageing.
Australian Association of Gerontology 41st National Conference Ageing Landscapes, Fremantle, WA, 18 - 20 November 2008.

Chojenta C, Loxton D & Lucke J.
Prevalence and antecedents of postnatal depression in Australia.
3rd International Congress on Women's Mental Health, Melbourne, Vic, 17 - 20 March 2008.

Chojenta C, Lucke J & Loxton D.
Does social support reduce the likelihood of postnatal depression in Australian mothers?
Poster presentation at the Marce Society International Conference, Sydney, NSW, 10 - 13 September 2008.

Collins C, Dolja-Gore X, Young A & Truby H.
Lower diet quality is associated with health service usage cumulative medicare costs in mid-aged Australian women.
International Congress on Dietetics, Yokohama, Japan, 8 - 11 September 2008.

Dobson A.
Combined host organisations oration: Harnessing Australia's health information.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Dolja-Gore X & Loxton D.
Prescribed medication use before, during and after pregnancy.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Heesch K & Brown W.
Dose response relationship between both physical activity and walking and 6 year incidence of arthritis in a national cohort of older women.
2nd International Conference on Physical Activity and Public Health, Amsterdam, The Netherlands, April 2008.

Herbert D, Lucke J & Dobson A.
Pregnancy losses in young Australian women: Findings from the Australian Longitudinal Study on Women's Health.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Herbert D, Lucke J & Dobson A.
Seeking advice and using treatment for fertility problems in Australian women aged 28-33 years.
Fertility Society of Australia Annual Conference: Working Together For Reproductive Health, Brisbane, Qld, 20 - 22 October 2008.

Herbert D, Lucke J & Dobson A.
Seeking advice and using treatment for fertility problems in Australian women aged 28-33 years.
Research Higher Degrees Conference, Brisbane, Qld, 7 November 2008.

Herbert D, Lucke J & Dobson A.
Prior pregnancy outcomes and seeking treatment for fertility problems in Australian women aged 28-33 years.
Public Health Association Australia (Qld) State Conference, Emerging Issues in Public Health, Brisbane, Qld, 4 - 5 September 2008.

Hobbs M, Taft A & Amir L.
The emergency contraceptive pill (ECP) rescheduled: Exploring women's knowledge, attitudes and experiences.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Johnstone M & Lee C.
What is going on in the minds and lives of young Australian women?
Australasian Society for Behavioural Health and Medicine 5th Annual Scientific Conference, Sydney, NSW, 31 January – 2 February 2008.

Johnstone M & Lee C.
Young Australian women's aspirations for family and work in the 21st century.
10th Australian Institute of Family Studies Conference - Families Through Life, Melbourne, Vic, 9 - 11 July 2008.

Loxton D, Powers J, Mooney R & Hosking S.
Sole motherhood, mental health and the role of social support.
3rd International Congress on Women's Mental Health, Melbourne, Vic, 17 - 20 March 2008.

Lucke J, Watson M, Herbert D & Loxton D.
Factors associated with STI among young women: Findings from the Australian Longitudinal Study on Women's Health.
Australasian Sexual Health Conference 2008, Perth, WA, 15 - 17 September 2008.

Lucke J, Watson M, Loxton D & Herbert D.
The sexual health of Australian women in their twenties and thirties.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Mackenzie L & Mehraban A.
Development of a self-report version of the Home Falls and Accidents Screening Tool (HOME FAST).
OT Australia 23rd National Conference & Exhibition 2008, Melbourne, Vic, 11 - 13 September 2008.

Mackenzie L & Mehraban A.
Do occupational therapists and older people assess home environments for falls hazards differently?
OT Australia 23rd National Conference & Exhibition 2008, Melbourne, Vic, 11 - 13 September 2008.

Mackerras D, Powers J, Boorman J, Loxton D & Giles G.
Estimating the impact on pregnant and post-partum women of fortifying bread with iodine.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

McDermott L, Dobson A & Owen N.
Reducing from daily to non-daily smoking predicts future cessation among young women.
Australasian Society for Behavioural Health and Medicine Conference, Sydney, NSW, 1 January - 2 February 2008.

McDermott L, Dobson A & Owen N.
Predictors of continued smoking and smoking relapse among young adult women over 10 years.
10th International Congress of Behavioural Medicine, Tokyo, Japan, 27 - 30 September 2008.

McLaughlin D.
Social networks in older Australian men and women.
Australian Association of Gerontology 41st National Conference Ageing Landscapes, Fremantle, WA, 18 - 20 November 2008.

Parkinson L, Byles J, Gibson R & Robinson I.
Women and arthritis: Burden of illness and management of arthritis in older Australian women.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Parkinson L, Byles J, Gibson R & Robinson I.
Women and arthritis: The burden of suffering for older Australian women.
3rd International Congress on Women's Mental Health, Melbourne, Vic, 17 - 20 March 2008.

Powers J & Loxton D.
How do pregnant women respond to alcohol guidelines?
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Rowlands I & Lee C.
Looking on the bright side of life: The role of optimism in women's adjustment to miscarriage.
Society of Reproductive and Infant Psychology Conference, London, United Kingdom, September 2008.

Taft A & Watson L.
Depression, pregnancy termination and births among young Australian women: The confounding effect of partner violence.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Taft A.
Depression and termination of pregnancy (induced abortion) in a national cohort of young Australian women: The confounding effect of women's experience of violence.
3rd International Congress on Women's Mental Health, Melbourne, Vic, 17 - 20 March 2008.

Tooth L, Dobson A & Hockey R.
Relative survival as an indicator of generalizability for longitudinal studies of older people.
Population Health Congress 2008, Brisbane, Qld, 6 - 9 July 2008.

Tooth L, Lucke J, Russell A, Byrne G, Lee C, Wilson A & Dobson A.
The impact of caring roles on women's mental health.
3rd International Congress on Women's Mental Health, Melbourne, Vic, 17 - 20 March 2008.

Tooth L, Russell A, Lucke J, Byrne G, Lee C, Wilson A & Dobson A.
Few urban-rural differences in older carers' access to community services.
Australian Association of Gerontology 41st National Conference Ageing Landscapes, Fremantle, WA, 18 - 20 November 2008.

Tooth L, Russell A, Lucke J, Byrne G, Lee C, Wilson A & Dobson A.
Impact of type of impairment on carer burden and quality of life.
Poster presentation at the Australian Association of Gerontology 41st National Conference: Ageing Landscapes, Fremantle, WA, 18 - 20 November 2008.

Tudor-Locke C, Burton N & Brown W.
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completed student projects

Investigating quality of life and depression in middle aged and older Australian women with cancer

Candidate: Leah Collins

Degree: Doctorate of Psychology (Health)

University: Department of Psychology, The University of Melbourne

Supervisors: Dr Prasuna Reddy (Department of Psychology, School of Behavioural Science, The University of Melbourne), Dr Steven Bunker (National Heart Foundation of Australia, Victorian Division) & Ms Jane Fletcher (National Cancer Control Initiative)

This study investigated the quality of life (QoL) and the prevalence and impact of depressive symptomatology in middle age (47-52 years) and older (73-78 years) Australian women with cancer. The sample of this study was drawn from the dataset of the Australian Longitudinal Study on Women's Health (ALSWH) otherwise known as Women's Health Australia (WHA).

One-hundred and ninety-three middle aged women with cancer and 299 older women with cancer were compared with 193 middle aged and 299 older women without cancer respectively. By examining two distinct age cohorts, this study aimed to extend the QoL and depression literature regarding women with cancer across different life stages. The QoL and depressive symptomatology of women with cancer was initially compared to age-related norms, and in two cross-sectional studies aimed to explore the differences in QoL domains and depressive symptomatology between women with and without cancer (Study 1) and further explore the impact of both cancer and depression, separately and combined, on the QoL of women (Study 2).

The results from this study suggest cancer is associated with an overall reduction in QoL of Australian women, regardless of age. The domains and manner in which QoL is affected are however dependent on the age at which a woman is diagnosed with cancer and whether she experiences symptoms of depression. Middle aged women with cancer in general, experience more widespread reductions in both physical and mental QoL than older women with cancer. Older women with cancer tend to experience more physical limitations, yet show some psychological and emotional resilience when diagnosed with cancer.

This study also illustrated that depression symptomatology is highly prevalent amongst Australian women with cancer, regardless of age, and reduces their QoL. Where previous research has suggested depression is either less prevalent or less often reported within the older population, this study suggested this age based difference does not exist for the female cancer population.

Implications regarding the identification and treatment of mental health disorders in Australian women with cancer are discussed in relation to providing age appropriate psychosocial care and cancer support programs.

Socioeconomic inequalities in health care in Australia: Differential impacts on mortality and inequalities in the use of services

Candidate: Rosemary J. Korda

Degree: PhD

University: National Centre for Epidemiology and Population Health (NCEPH), The Australian National University (ANU)

Supervisors: Professor Jim Butler (Australian Centre for Economic Research on Health, ANU), Dr Mark Clements (NCEPH, ANU), A/Professor Emily Banks (NCEPH, ANU) & Dr Jane Dixon (NCEPH, ANU)

By international standards Australia is a healthy nation but it is well known that this high level of health is not shared equally: people who are socioeconomically advantaged are more likely to be in good health than those who are less advantaged (see Figure 1).

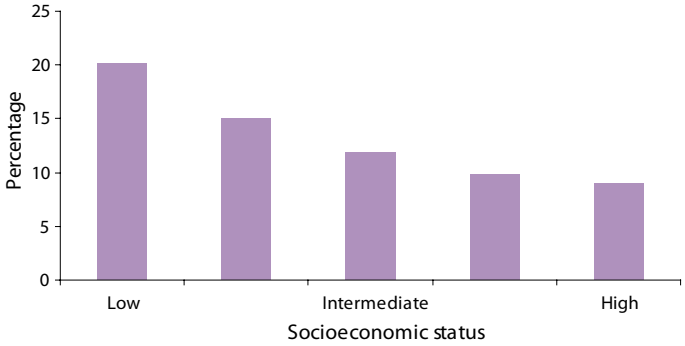

Figure 1 Percentage of women in only fair or poor health (rather than good or better health) according to socioeconomic status.

Note: Data sourced from 1946-51 cohort Survey 5 (2004). Socioeconomic status based on household occupations.

There are many factors underlying these health inequalities but health care is generally not considered to play a major role. This is in part because equity in access to health care is often assumed due to a 'universal' health care system, Medicare. However, this thesis argued otherwise—that there are considerable inequalities in health care and that these are important in understanding and addressing socioeconomic inequalities in health in this country.

One part of this project used data collected in 2007 from the ALSWH cohort born 1946-51 to investigate socioeconomic inequalities in the use of ambulatory health care. As shown in Figure 2, after taking into account how healthy women were, the study found that compared with more disadvantaged women, advantaged women

- were equally likely to visit a general practitioner,
- were less likely to use outpatient and emergency services at a hospital, but were
- more likely to visit a specialist doctor, allied health practitioner, alternative health practitioner and dentist.

Advantaged women also rated their access to health care services more highly than more disadvantaged women.

The study also found that concession cards, which increase access to bulk-billing of doctors' services, were effective in reducing inequality in GP services, but had no effect on inequality in specialist care. In contrast, private health insurance increased inequality—advantaged women were more likely to have 'extras' private insurance and this partly explained their higher use of allied heath and dental services.

In combination with other studies in the thesis—on inequalities in the use of high-technology inpatient care and health-care related outcomes—the findings suggest that health-care-related inequalities are at least partly generated by the health system itself. To this end they are potentially avoidable and suggest there is scope for reducing health inequalities through a more equitable distribution of health care.

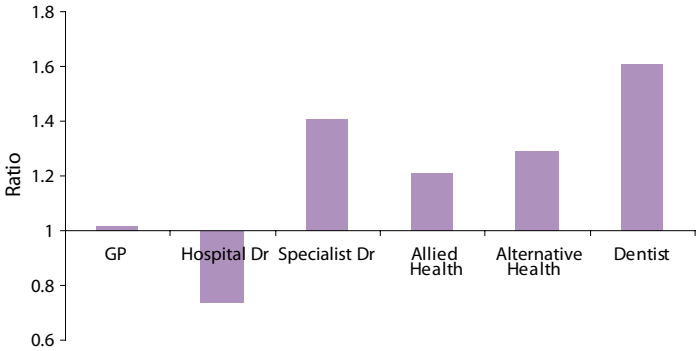

Figure 2 Inequalities in use of ambulatory care, after taking into account health status: Ratio of use in the most advantaged women compared with the least advantaged women.

Note. A ratio of 1 means advantaged and disadvantaged women are equally likely to use the service, a ratio greater than 1 means advantaged women are more likely to use the service, and a ratio of less than one means advantaged women are less likely to use the service.

Biopsychosocial correlates of women's mental health: A longitudinal analysis of self-reported mental health across three generations of Australian women

Candidate: Nadine Smith

Degree: PhD

University: School of Population Health, University of Queensland

Supervisors: Professor Annette Dobson (School of Population Health, University of Queensland) & A/Professor Nancy Pachana (School of Psychology, University of Queensland)

Good mental health is widely accepted as being instrumental to quality of life, but even people who usually enjoy good mental health may face changing life circumstances that can trigger episodes of poor mental health. The aim of this study was to explore the contribution of biopsychosocial factors, such as socio-demographics, health behaviours and physical health factors, to the mental health of women across the lifespan.

Similar results were found for the three cohorts: women born 1973-78 (aged 18-23 years in 1996), women born 1946-51 (aged 45-50 years in 1996) and women born 1921-26 (aged 70-75 years in 1996). Improved mental health tended to be reported by those who were socially advantaged and to had good physical health.

As an example of the results, data on the women born 1946-51 are presented. The mental health of these women across the three surveys (1996, 1999 and 2001) was assessed. At each survey approximately 14% reported poor mental health with 73% reporting good mental health at all surveys, 4% reporting poor mental health at all surveys and 23% reporting mental health that changed from survey to survey.

For women in this cohort, mental health decreased between 1996 and 1998 for those who in 1996 (see Figure 1):

- found managing on their income difficult or impossible
- had five or more GP visits
- were physically inactive
- reported an underweight or acceptable BMI
- reported three or more physical symptoms at Survey 1

Mental health increased between 1996 and 1998 for those who in 1996:

- found it easy to manage on their income
- had fewer than five GP visits
- were physically active
- reported no physical symptoms.

This study highlighted the importance of studying changes in mental health for women over extended periods of time (2-5 years). The rate of poor mental health remained relatively stable over time. However, it was not necessarily the same women at each survey who had poor mental health with some women reporting marked changes in mental health over time, according to their biopsychosocial characteristics. Providing support and intervention before mental health issues escalate to clinical levels is important.

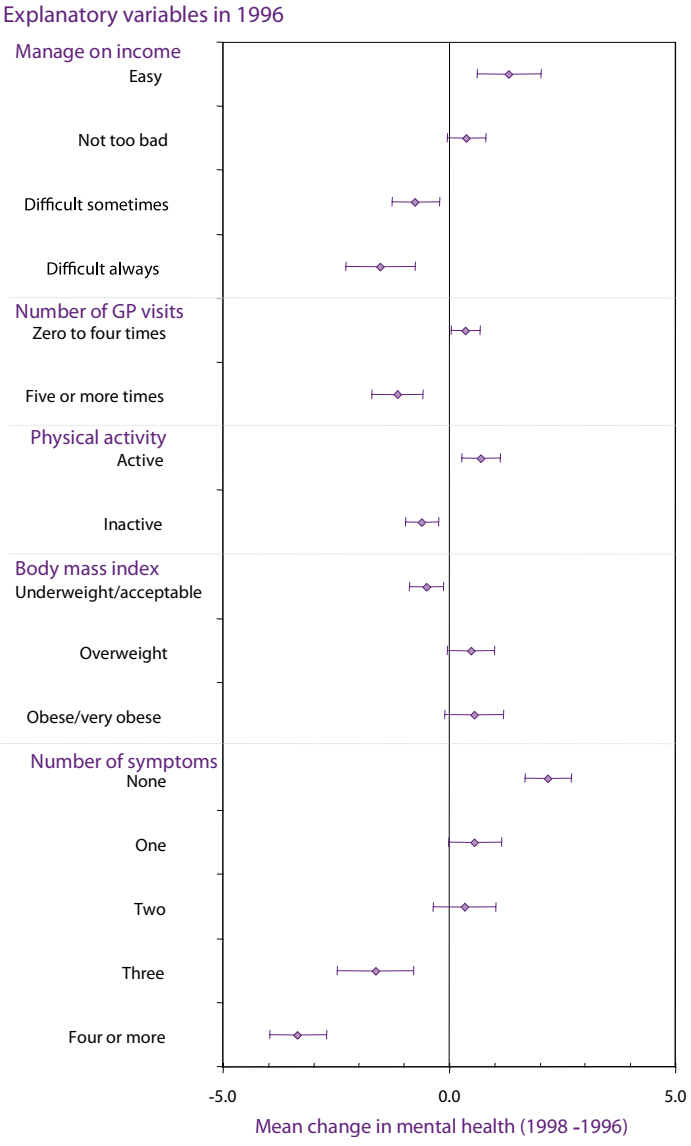

Figure 1 1946-51 cohort: Adjusted means and 95% confidence intervals for change in mental health (MHI-5 score) from 1996 to 1998 (Survey 1 - Survey 2)

Battling the Black Dog: An exploration of the strategies used by young Australian women coping with depressive symptoms

Candidate: Catherine France

Degree: PhD

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

Supervisors: Professor Christina Lee (School of Psychology, University of Queensland), & Dr Sue Outram (School of Medicine and Public Health, University of Newcastle)

The purpose of this thesis was twofold: to examine correlates and predictors of depressed mood, and to compare the attitudes, coping styles and coping strategies of women from four 'depressed' transition groups who were 'never depressed', 'no longer depressed', 'became depressed' and 'remained depressed'.

Our results imply that depression is one aspect of a cluster of negative circumstances across various spheres of functioning which include marginal social status, having poor physical health, and engaging in risky behaviours. Results from the longitudinal data suggest that it would benefit young women's mental health to be more physically active and to move towards increased social support and the formation of intimate relationships.

The majority of women considered that depression did not necessarily require pharmacological treatment, though they believed that depression was a medical condition and depressed women should seek professional help. Among possible causes of depression, many women were definite that problems with intimate or family relationships were a significant reason. Their comments presented pictures of extremely busy lives with multiple, demanding roles.

The findings also indicated that women employ a vast range of strategies to cope with depressed mood and that, broadly speaking, there are few differences in approach to distinguish between women from the four transitional 'depressed' status groups. By far the most common recommendation was to talk to someone, not necessarily a professional person, but someone who would listen without judgement. Approximately 70% of women who made recommendations referred to the importance of this strategy (See Table 1 above). Coupled with the strong predictive value of social support, these data suggest that women need to have meaningful connections in their lives if they are to avoid becoming 'depressed' or to recover from 'depression'. With appropriate support and resources, women are able to move out of 'depression', but this may have less to do with their behavioural strategies – what they themselves actually do to battle 'depression' – and more to do with their environmental circumstances.

Table 1: Percentages of women within each of the four transitional groups who wrote about these strategies as being useful for 'depressed' women

RECOMMENDATION	Never 33.4% (n=244)	No Longer 15.4% (n=113)	Became 15.8% (n=116	Remained 35.3% (n=259)
No. of recommendations (Total = 2142)	713	335	336	758
Talk to others	72.5	68.1	63.8	65.6
Distractions	39.3	43.4	44.0	47.5
Focus on the problem	32.8	38.1	37.1	42.1
Physical activity	36.1	27.4	31.9	26.6
Cognitive strategies	31.6	29.2	31.0	21.6
Talk to a professional	24.6	29.2	25.0	28.6
Relaxation techniques	21.3	31.0	23.3	27.4
Lifestyle changes	9.4	8.0	6.0	7.7
Being outdoors	8.2	5.3	5.2	4.6
Medical approaches	2.9	6.2	3.4	8.5
The "Don't"s	6.6	6.2	6.9	2.7
Food/alcohol/drugs	4.9	3.5	5.2	5.8
Spiritual comfort	2.1	0.9	6.9	3.9

An application of the International Classification of Functioning, Disability and Health for understanding falls risks among older community dwelling women in Australia

Candidate: Afsoon Hassani Mehraban

Degree: PhD

University: Department of Occupational Therapy/School of Health Sciences, University of Newcastle

Supervisors: Dr Lynette Mackenzie (Faculty of Health Sciences, University of Sydney) & Professor Julie Byles (Research Centre for Gender, Health and Ageing, University of Newcastle)

Falls and fall injury among older people continue to be an important health problem, and the complexity of risk factors that contribute to falls and fall injury require the application of a holistic approach to identify, assess, and manage these risk factors. The purpose of this study was to evaluate the application of the International Classification of Functioning, Disability and Health (ICF) as a theoretical framework to understand falls risk, and to empirically test the capacity of the ICF as both a classification system and theoretical framework to identify falls risk factors for older women using the Australian Longitudinal Study on Women's Health (ALSWH) cohort dataset.

ALSWH data from Survey 1 in 1996 to Survey 4 in 2005 were used. In addition one cross-sectional study was undertaken which added specific fall related information (home environmental hazards, fear of falling, falls self-efficacy, ADL, and IADL) to the main dataset, for 568 randomly selected older women. ALSWH data consisted of a broad range of health information relevant to the ICF. To collect data about home hazards, the health professional version of the Home Falls and Accidents Screening Tool (HOME FAST) was converted to a self-report version, a scoring process was developed and evaluated, and the agreement between health professional ratings and self-reported ratings of home hazards was analysed before the sub-study was conducted.

Variables from surveys (1-4) and sub-study were linked to the ICF using published linkage rules and were longitudinally tested against the outcome of falls at Survey 4. Logistic regression model building processes were undertaken for all the defined components of the ICF. The results indicated that the ICF components of body functions (medication for high blood pressure), health condition (cataract, diabetes, low iron level), environmental factors (unsafe home environment), and the activity and participation component (ADL/IADL), and general health (most time in bed/chair because of health, major illness/injury in last 3 years) were significantly associated with falls. The personal factors and the 'not-covered' components did not contribute to falls in the final model.

This study is the first to apply the ICF to falls risk factors, and demonstrated that the ICF can be applied to understand falls risk. However, the ICF definitions need to be further developed regarding categorisation of personal factors and environmental factors, and falls as a health condition. Additional work is also needed to differentiate the two concepts of activity and participation in order for the ICF to be applied as a practical clinical tool.

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Data Archiving

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

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.

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