

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

australian longitudinal
study on women's
health

A photograph of two women embracing outdoors. The woman on the left is older, with short grey hair, wearing a light pink cardigan over a white top. The woman on the right is younger, with long blonde hair, wearing a dark blue long-sleeved top. They are both smiling warmly at the camera. The background is a soft-focus outdoor setting with green grass and trees.

Annual Report
2014

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DIRECTOR'S REPORT

Australian Longitudinal Study on Women's Health (ALSWH) is a long-running survey funded by the Australian Government Department of Health to provide evidence to develop and evaluate policies to lead to better health for all Australian women. Now in its nineteenth year, ALSWH involves more than 50,000 women in four cohorts, selected from the Australian population.

When it began in 1996, the Study was designed to cover the adult lifespan, and comprised three age cohorts - young women aged 18 to 23 (now 36-41), mid-aged women aged 45 to 50 (now 63-68) and older women aged 70 to 75 (now 89-94). Since 2013 a new cohort of young women, born in 1989-95 and now aged 19-25, have been surveyed annually to ensure that the Study continues to cover the adult lifespan.

A major report describing the methods used to recruit this youngest cohort was prepared for the Australian Government Department of Health this year. The report also provides a description of the cohort's health status, and compares their health with the health of women from the 1973-78 cohort when they were the same age in 1996. A brief summary of the report is presented here.

During the year we also prepared summary reports on the 1973-78 and 1921-26 cohorts, outlining the health trajectories and key issues for each cohort since the beginning of the Study in 1996. Highlights from each summary are presented later in this report.

This year ALSWH continued to survey the women in the oldest cohort - born in 1921-26 and now aged 89-94 - at six-monthly intervals, with surveys sent in May and November. The second survey of the new young cohort (born in 1989-95) was also completed, and pilot testing of the cohort's third survey began in December. Our commitment to integrating and promoting new technology has continued, with more and more participants completing surveys online.

In addition to the main survey work, we have continued to conduct substudies and subsidiary analyses, enhance data quality and documentation, and produce scientific papers and conference presentations on all aspects of women's health. This year linkage of de-identified ALSWH data with Aged Care data

and other health datasets (such as State-based hospital, perinatal and cancer data) commenced, and several research projects using the linked data have begun. Topics under investigation include access to health services, and prevalence of conditions such as dementia.

This year has been my first year as ALSWH Director. The Study has come a long way since 1996 when I joined as the first statistician for ALSWH and it continues to evolve in exciting directions, allowing continued provision of invaluable evidence and insights to support the development of women's health policy in Australia. I would like to give thanks to the Department of Health for their ongoing support for the Study, to my colleagues for all their hard work, and to the women who have continued their participation in the research.

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CONGRATULATIONS TO OUR SUCCESSFUL GRADUATES FOR 2014

An interdisciplinary investigation into the relationships between drought and mental health in Australia

Candidate: Jane Rich

Degree: PhD

University: The University of Newcastle

Supervisors: A/Professor Deborah Loxton and Doctor Sarah Wright

In the current context of climate change, weather temperatures and droughts are set to increase in intensity and frequency. It is unclear what the adverse health outcomes might be as a result of this experience. Some research suggests that experiences of drought challenge mental health and wellbeing and there are reports of increases in male suicide rates at that time (Hanigan, Butler, Kokic and Hutchinson 2012). What is not certain is how experiences of drought might affect women's health and wellbeing.

This public health thesis drew together information from science, health, geography, and sociology to explore the lived experience of drought for three generations of Australian women. The project examined these experiences through three different studies. Firstly, a thematic analysis explored the diversity and breadth of experiences of women in drought. Secondly, a longitudinal analysis qualitatively explored the experiences of drought over time for Australian women and thirdly, three in-depth narratives, from telephone interviews with women, illustrated the connections between the themes, by presenting women's stories in the wider context of their lives.

Data from the Australian Longitudinal Study on Women's Health (ALSWH) were analysed in these three studies to explore women's experiences of drought. This project was particularly interested in the implications of drought on the ageing and wellbeing of women. Data from three age groups of women born between 1973-78, 1946-51 and 1921-26 were included in the analyses. Three separate studies were conducted in each age group, totalling nine different analyses.

The first study conducted a thematic analysis of women's free-text comments collected by the ALSWH. The aim of this study was to assess drought in the wider context of women's lives and to examine diversity of experiences. This thematic analysis revealed several important insights. Firstly, there are generational differences in women's experiences of drought. Secondly, this study revealed the importance of specific events surrounding women and their life in drought, such as raising families, caring for others, and maintaining their health and community involvement. Thirdly, this analysis found that gender was an important aspect of experiences of drought. Many women-specific themes were raised.

The second study aimed to uncover the longitudinal impact of living in drought. This chapter visually mapped each cohort's survey years and free-text comments to reveal common concepts and themes from the women's free-text comments. Leximancer software was used to assist in analysis. This study found firstly that a longitudinal lens is vital for drought research. Secondly, this study found that ageing needs to be a vital aspect of drought research. Thirdly, mental health is compromised during drought particularly when examined over time.

The third study aimed to enable women to tell their story of drought, through telephone interviews. In the narrative analyses the women's experiences were linked to quantitative health and rainfall data collected by the ALSWH. Results from this study build on the findings of the previous two studies by drawing together women's reflections and insights. The narratives provide the links and details between themes. Results found that firstly, women have important roles, particularly in caring for their families and husbands during drought. Secondly, ageing was raised as an important theme for each cohort's narrative. Thirdly, this chapter revealed the incredibly complex experience of drought, drought did not occur in isolation but as part of wider events in life.

This project concluded that drought is a gendered experience. Both gender and ageing must be considered when planning for future droughts.

Calculation of haem iron intake in young women from the Australian Longitudinal Study on Women's Health and its positive association with iron status

Candidate: Angela Reeves

Degree: Honours

University: The University of Newcastle

Supervisors: Dr Amanda Patterson, Mr Mark McEvoy and Dr Lesley MacDonald-Wicks.

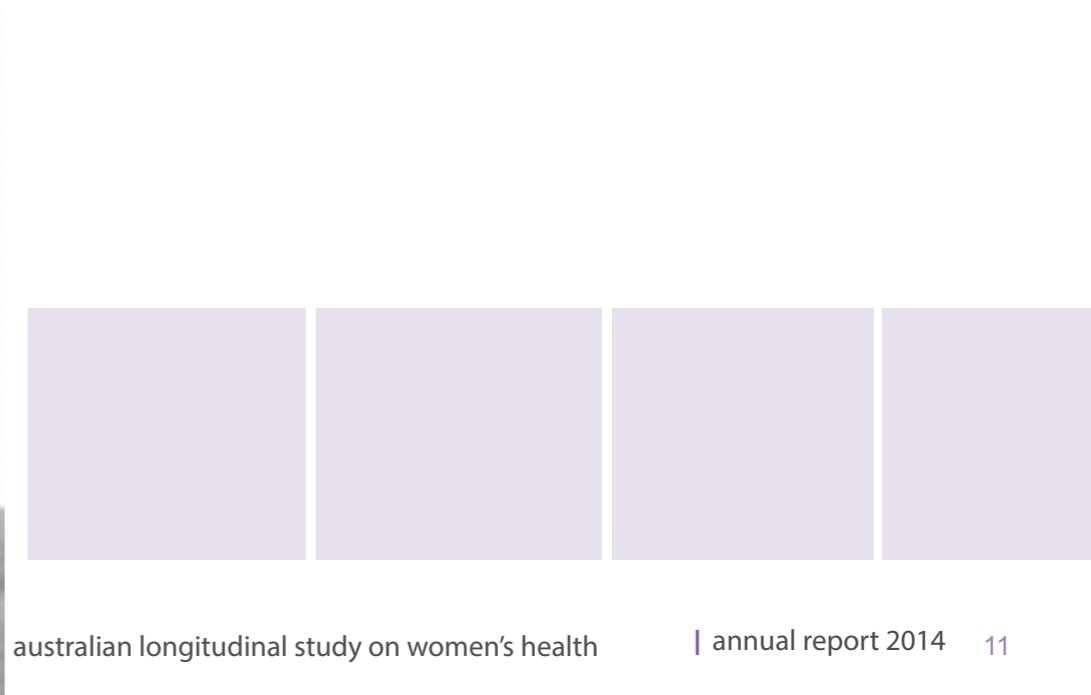
Identifying the main dietary predictors of iron deficiency is important for addressing what is a globally significant nutritional issue. Total iron intake is not strongly associated with iron stores, but limited research suggests haem iron intake may be more predictive. Haem iron is not readily available in most nutrient databases, limiting further research in this area, and in particular, large epidemiological work.

This project aimed to develop a method for measuring haem iron intake in a representative sample of young adult Australian women (25-30 years) and examine its association with self-reported diagnosed iron deficiency over six years of follow-up.

Experimentally determined haem iron contents for Australian red meats, fish and poultry were applied to haem-containing foods included in the Dietary Questionnaire for Epidemiological Studies (DQES) Food Frequency Questionnaire (FFQ). Haem iron intakes were then calculated for 9076 women from the young cohort of the Australian Longitudinal Study on Women's Health (ALSWH) using the DQES dietary data from the third ALSWH survey (2003). Logistic regression was used to examine the association between haem iron intake (2003) and the incidence of iron deficiency in 2006 and 2009.

Adjusted multivariate logistic regression showed that baseline haem iron intake was a statistically significant predictor of iron deficiency in 2006 (OR: 0.91; 95% CI: 0.84 - 0.99; p-value: 0.020) and 2009 (OR: 0.89; 95% CI: 0.82 - 0.99; p-value: 0.007). Energy adjusted covariate analysis slightly increased the effect size in 2006 (OR: 0.90; 95% CI: 0.82-1.00; p-value: 0.044) and 2009 (OR: 0.87; 95% CI: 0.78-0.96; p-value: 0.007).

This project concludes that increasing haem iron intake reduces the odds of iron deficiency developing in young adult Australian women.



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Health and wellbeing of women aged 18 to 23 in 2013 and 1996

Findings from the Australian Longitudinal Study on Women's Health



The ALSWH major report for 2014 described the methods used to recruit the Study's newest cohort of young women born 1989-95. The report also provided information about the health of the young women recruited, and compared their health with the health of young women of the same age in 1996. Findings of the report are summarised here – the full report is available on the study website.

Health and wellbeing of women aged 18 to 23 in 2013 and 1996

Findings from the Australian Longitudinal Study on Women's Health

Recruitment

Recruitment used an innovative new protocol that was effective at reaching this new cohort young women. Rather than sending letters through Medicare, which are largely ignored by this cohort, we used an open recruiting protocol with a strong reliance on social media and invited women to complete an online survey. A total of 17,568 women were recruited, of these 498 were selected to form a pilot group, with a total of 17,070 women forming the 1989-95 cohort.

Representativeness

Representativeness of the cohort enables generalisation of findings from the Study to support the development of national health policy and healthcare planning. Compared with women of the same age in the 2011 Australian Census and the Australian Health Survey (2011-12), the young women in the 1989-95 cohort are representative of women of their age in Australia in terms of age distribution, marital status, and area of residence. There is some over-representation in the cohort of university educated women. This may be in part due to the distinct ALSWH sample frame, which unlike the Census, excluded women who did not have a valid Medicare number.

Sociodemographic characteristics

The cohort displays a good range of diversity of women's backgrounds and social circumstances.

- At recruitment, 23% of women in the cohort had a university degree, and 8% had not completed Year 12. Analysis by age and area of residence showed that higher educational qualifications, especially university level education, were strongly related to age. Level of educational attainment was directly proportional to participation in the labour force. Also, women in major cities were more likely to have higher educational qualifications, particularly university level, than women in regional and remote areas.
- 23% of the women were in a de facto relationship, and 3% were married (similar to the 2011 Census). Compared with women aged 18 to 23 in 1996, contemporary young women were more likely to be in a de facto relationship (23% compared with 12%) and less likely to be married.
- Young women's living arrangements had changed very little from 1996 to 2013 – at both times, a similar proportion of women lived with parents (about half) or lived with partners (about one-quarter).
- 61% of young women in 2013 reported having some level of difficulty managing on their income, compared with 51% of women in the same age group in 1996. Difficulty managing was highest for women with less than Year 12 qualifications, with almost two-fifths of these women finding it impossible or difficult to manage on their income all of the time.

Alcohol consumption

Patterns of alcohol consumption by young women have changed little since 1996, with one in four women (26%) reporting drinking alcohol 'weekly or more frequently' in 2013, compared with 29% in 1996.

- In 2013, around 5% of the cohort consumed an average of more than two standard drinks per day and thirteen per cent engaged in binge drinking (consuming more than four drinks on one occasion) on at least a weekly basis.
- Little variation was evident by sociodemographic characteristics, but women living in remote or very remote areas had the highest prevalence of binge drinking with one in five (22%) doing so weekly or more frequently; 37% of women with university level qualifications reported binge drinking at least monthly.



Tobacco use

Findings from the new cohort provide evidence to support the effectiveness of policies to reduce smoking rates.

- From 1996 to 2013, the percentage of women aged 18 to 23 who had never smoked increased from 53% to 63%, while there was also a substantial decline in the percentage of current smokers from one in three (32%) to less than one in five (19%).

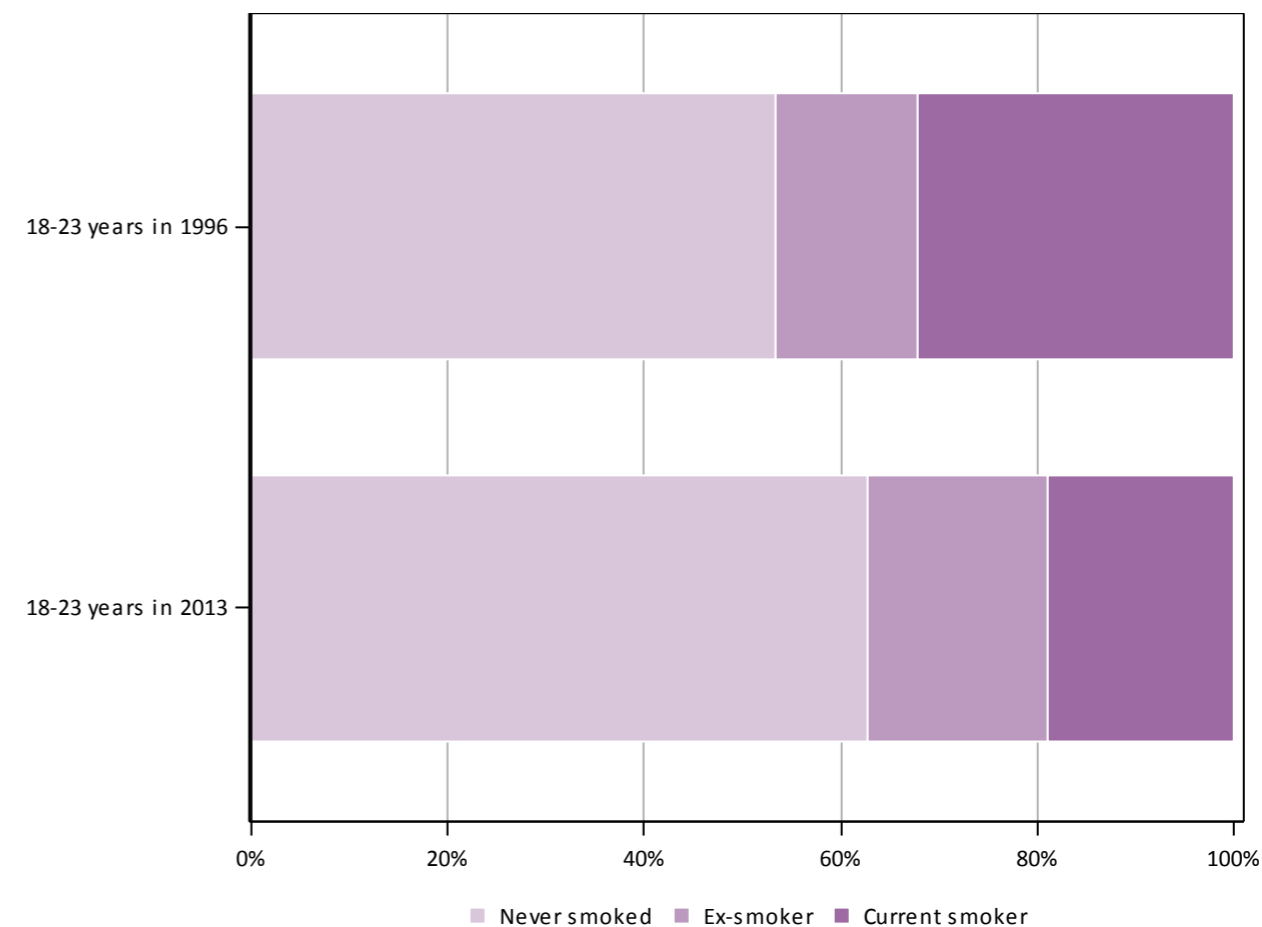


Figure 1 Smoking status of women aged 18 to 23 in 1996 and 2013, weighted by age and area of residence.

- In 2013, 44% of women with less than Year 12 education qualifications were current smokers, compared with 10% of those with university qualifications.
- One in four women (23%) living in remote and very remote areas was a current smoker, with 3% smoking 20 or more cigarettes per day.

Illicit drugs

- The majority (53%) of the young women had used marijuana, with 30% doing so within the last 12 months. Usage was highest among women with less than Year 12 education (35%) and women living in major cities (32%). Marijuana use peaked at around age 20.
- Other illicit drugs had been used by 29% of the women, with 17% using other illicit drugs within the last 12 months. Usage was highest among women with less than Year 12 education (23%) and women living in remote areas (20%) or in major cities (19%).

Physical activity

Around 70% of the 1989-95 cohort met the Australian threshold recommendation for physical activity. When compared with women of the same age in 2000 (Survey 2 of the 1973-78 cohort), women aged 22 to 23 in 2013 were more physically active - only 30% of women in 2013 were categorised as inactive or having low physical activity, compared with 41% in 2000.

Being overweight or obese

Thirty-three per cent of women in the 1989-95 cohort were overweight (19%) or obese (14%), which is a marked increase from 1996, when only 20% of young women were overweight or obese. In 2013, the percentage of overweight and obese women increased with age and area of residence (from the major cities to remote or very remote areas), and was highest among women with less than Year 12 education level.

Preventive services and screening:

- Overall more than half the women aged 18 to 23 in 2013 reported having had a Pap test within the last two years, which was slightly more than the percentage of women in the age group in 1996. As expected, use of Pap tests increased with age.
- 86% of women aged 18 to 23 in 2013 reported that they had their blood pressure checked, and 30% of women reported having their skin checked for "spots, lesions, moles".
- Women aged 18 to 23 in 2013 were eligible for the free HPV vaccination program at school when it was introduced in 2007. However, only 83% reported they had ever been vaccinated for HPV, with little variation by area of residence.
- Reporting of HPV vaccination was lowest among the 18 year olds (78%) and highest among those aged 21 or more (85-86%). It was lowest among those with the lowest levels of educational attainment.

Psychological distress

Young adulthood is characterised by many social, educational, occupational and residential changes that in some, can lead to high levels of psychological distress.

- Levels of psychological stress reported by young women were higher in 2013 than in 1996. In 2013, distress was higher (55%) for the younger women aged 18 to 20 than for women aged 21 to 23 (45%), suggesting that distress is associated with psychological pressures experienced during the transition from adolescence to young adulthood.
- Over half (59%) of the new cohort reported at least one episode of suicidal thoughts and 45% reported self-harm.
- Many women had sought professional help to improve their mental health, with about a third reporting they had been diagnosed with or treated for either depression or anxiety.
- Across all mental health measures, women with less than a Year 12 education or those with a certificate or diploma qualification were more likely to report poor mental health.

Violence

Levels of physical and sexual violence were similar for young women in 2013 and 1996.

- In 2013, almost one in five women (19%) had experienced physical or sexual violence in the last 12 months, and more than half (56%) had experienced physical or sexual violence at some stage in their lives – for women with less than Year 12 education the prevalence was 77%.
- Bullying had been experienced in the last 12 months by almost one in five women (18%), and by 70% of women at some stage in their lives.
- The prevalence of Intimate Partner Violence increased across the age range and was more prevalent outside major cities.
- 45% of the women reported some form of current or past abuse, with 12% reporting one form of abuse, 8% two forms and 25% reporting three or more forms of abuse.

Physical health

- Nearly one-third of young women had been diagnosed with low iron, and a quarter had been diagnosed with asthma.
- More than one in five reported frequent experience of severe tiredness (29%), back pain (21%), headaches or migraines (23%), irregular periods (20%), or severe period pain (22%).
- The number of young women reporting difficulty in sleeping (25%), back pain (21%), vaginal discharge or irritation (11%), haemorrhoids (2%), constipation (6%) and other bowel problems (5%), had doubled since 1996.

Sexual and reproductive health

- The pill and condoms were the main forms of contraception used by women aged 18 to 23 in 2013.
- Women with less than Year 12 educational attainment were more likely to report not using contraceptives the last time they had sex (27%) compared with women with higher qualifications (7-15%).
- Contraceptive use was reported by a higher percentage of women living in major cities and those with Year 12 or university qualifications.
- There remain marked variations in the percentage of women who reported ever having been pregnant according to age, area of residence and education level: 21% of women aged 23, 24% of women living in remote or very remote areas, and 41% of those with less than Year 12 qualifications reported ever having been pregnant.

Access to health services

- Women's preference for a female doctor was different for different age groups within the cohort but there was little difference between women aged 18 to 23 in 2013 and in 1996.
- 78% of women aged 18 to 23 in 2013 reported doctors as a source of information, with a similar figure across the age range, area of residence, and education level.
- 62% of women identified family members as a source of health information; however, there was a clear decline in the percentage with age and was lowest among those who had not completed Year 12 qualifications.
- 44% of the women identified the internet as a source of health information; the percentage was higher among those living in the major cities than elsewhere, increased with age (37% at 18 to 49% at age 23 years) and was higher among those with higher levels of education.
- Overall 69% of women had their own Medicare card while 13% had a copy of a parent's card and 18% had to borrow their parents' card.

Summary:

The 2014 major report gives an overview of the recruitment of a large cohort of young women to the Australian Longitudinal Study on Women's Health. While there are some minor differences between women recruited and the Australian population of women of the same ages, the cohort is still broadly representative of the general population. It also presents a diversity of backgrounds and circumstances, which will allow continued assessment of a wide range of factors associated with women's health - a major aim of the Study. Young women in the new cohort are not dissimilar to women of the same age in 1996, but they are more physically active and appear to have higher levels of psychological stress. Over time we expect to see rapid changes in young women's social circumstances, health risks, health, and health care use which will provide new understandings of what influences the health of young women in the 21st Century.



A photograph of two women standing outdoors. On the left is an older woman with short, wavy white hair, wearing a blue textured cardigan over a light-colored top. On the right is a younger woman with blonde hair, wearing a white top and a light-colored cardigan. Both women are smiling warmly at the camera. The background is a soft-focus green foliage.

In **2014**, summary reports have been provided on the 1973-78 and 1921-26 cohorts, outlining the health trajectories and key issues for each cohort since the beginning of the study. Major research findings are also reported. Highlights from each summary are presented here—the full reports are available on the website.

Cohort Summaries

The ALSWH 1973-1978 Cohort

The cohort has been surveyed six times since 1996 - details of survey dates and response rates are shown in Table 1.

Table 1 ALSWH 1973-78 cohort - schedule of surveys and response rates 1996 - 2012

Survey 1 (1996)	Survey 2 (2000)	Survey 3 (2003)	Survey 4 (2006)	Survey 5 (2009)	Survey 6 (2012)
Age 18-23	Age 22-27	Age 25-30	Age 28-33	Age 31-36	Age 34-39
N = 14,247	N = 9,688	N = 9,081	N = 9,145	N = 8,200	N = 8,010

Surveys have covered the main issues affecting the health of contemporary young women, with questions selected to reflect national health and social policy concerns, and to add to knowledge of women's well-being during this stage of the life-span. Topics have included:

- Education, employment, household composition and other sociodemographic factors
- Nutrition, physical activity, smoking, alcohol and other health behaviours and risk factors
- Contraception, childbirth, fertility problems and other reproductive health issues
- Mental health - including depression and anxiety
- Physical health - including diseases, chronic conditions, symptoms and health related quality of life (including

health related quality of life, diseases, conditions, symptoms)

- Use of health services, such as GPs, specialists and hospitals
- Ease of access to health services and satisfaction with services
- Time use (including paid and unpaid work, family roles, leisure)
- Interpersonal violence

Selected health trajectories from Survey 1 to Survey 6

Over the survey period, there has been a marked increase in weight (Figure 1) and a concomitant increase in the percentage of women whose BMI was within the overweight or obese categories, from 20% at Survey 1 to around 45% by Survey 6. A small percentage of women reported being underweight at Survey 1 and this fell steadily over the five subsequent surveys.

Methods of contraception have also changed over the survey period, with use of the contraceptive pill and condoms decreasing as other forms of contraceptive (e.g., long acting reversible contraceptives) became available and more popular (Figure 3)

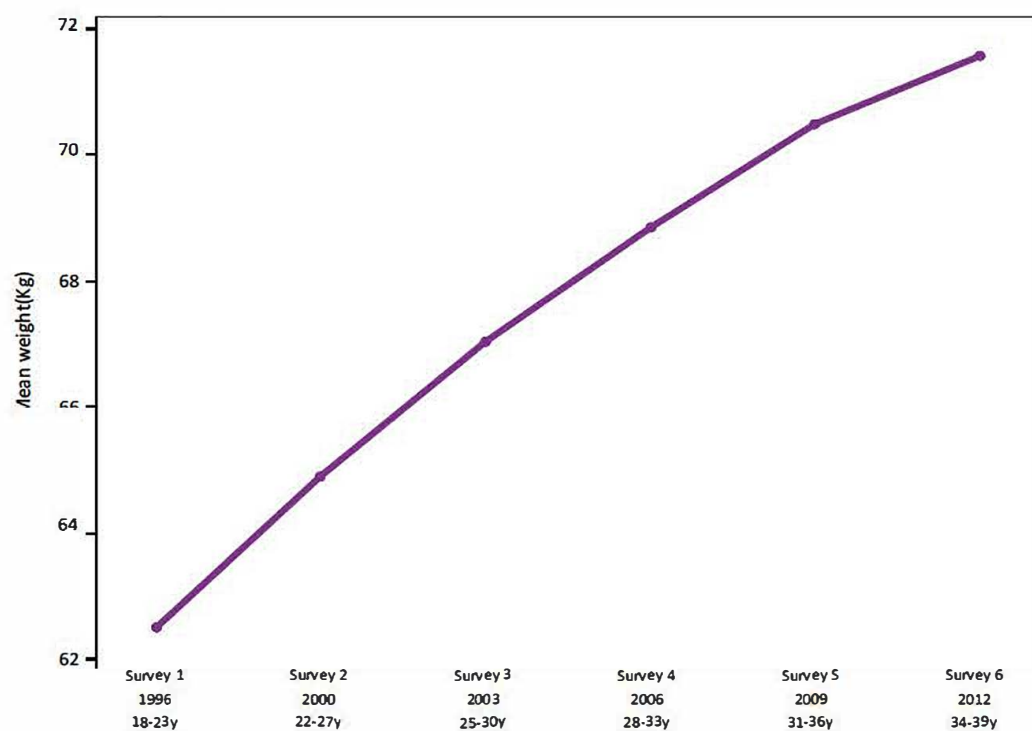


Figure 1 Participant weight from Survey 1 to Survey 6 (N=4,105).

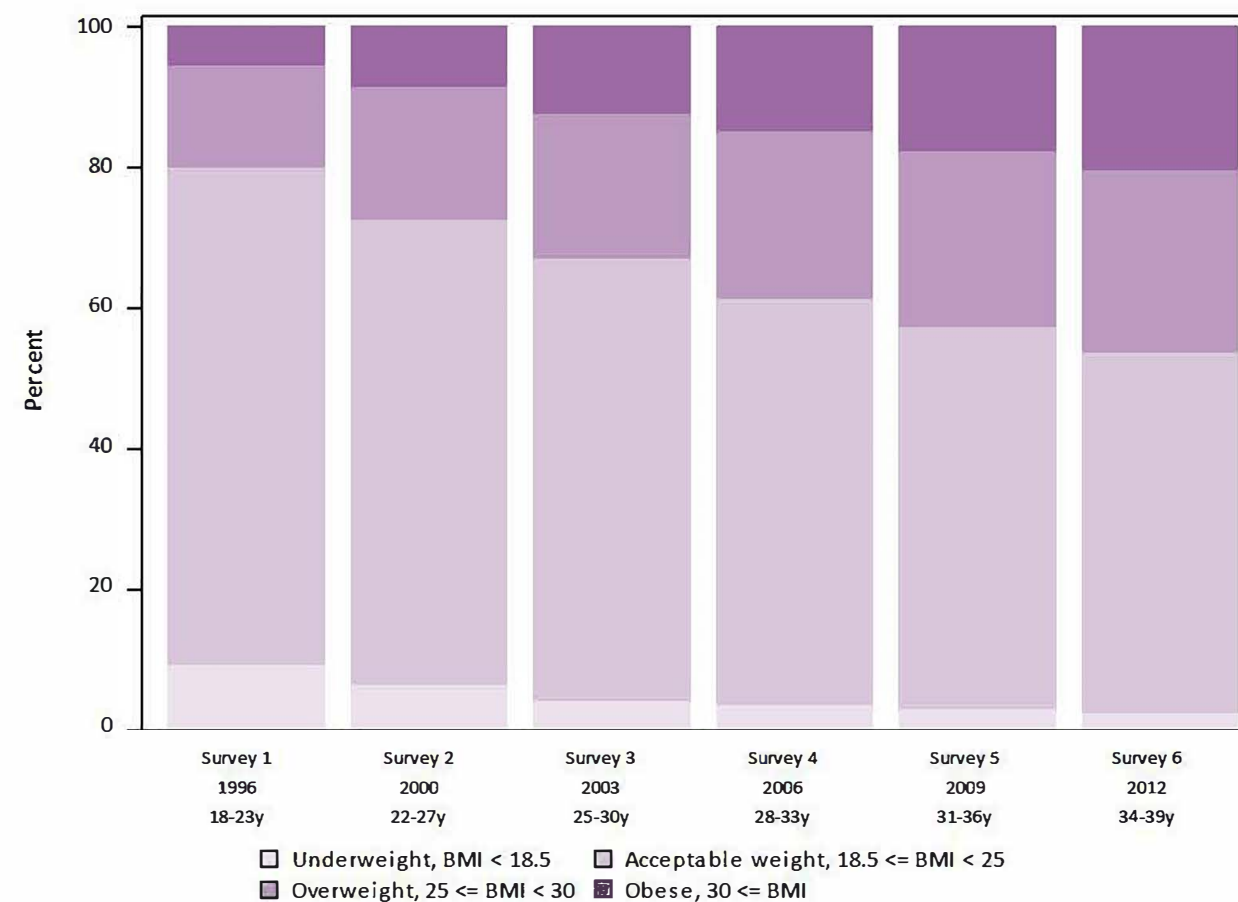


Figure 2 Body Mass Index (BMI) from Survey 1 to Survey 6 (N=4,064).

Major research outputs

Since 2001, data from surveys of the 1973-78 cohort have been used in more than 30 reports prepared for the Australian Government Department of Health and other Government agencies, and more than 125 published papers. The major themes covered have been mental health, reproductive health, weight, nutrition, and physical activity, chronic conditions, and health service use. Findings from the 1973-78 cohort have also directly influenced Federal and State Government policy. Recent contributions of note include the 2010 Australian Government National Women's Health Policy 2014 Australian Government Physical Activity Guidelines and the 2013 New South Wales Government's Health Framework for Women's Health.

Key issues

ALSWH findings from the 1973-78 cohort have contributed to identifying national priorities for research on the health of young women, including:

- How to increase participation by young women

in healthy lifestyle behaviours such as reduced sitting time, increased physical activity, less caloric consumption, maintenance of healthy body weight, and reduced smoking and risk taking behaviour concerning drugs and alcohol.

- How to optimally utilise the internet, in particular social media, to increase young women's awareness of health issues and healthy behaviour practices.
- Identifying domestic violence and abuse before it becomes detrimental to young women's health.
- Identification of ways to reduce young women's risk of sexually transmitted infections and risky health behaviours which, if not identified and treated early enough, can impact on future fertility.
- Early identification of mental health issues and ways to promote early treatment.
- How to assist young women manage and balance work and family commitments so as to minimise negative impacts on mental and physical health.

The ALSWH 1921-1926 Cohort

The oldest ALSWH cohort was surveyed six times between 1996 and 2011. Since November 2011 they have been surveyed every six months. Survey dates and response rates are shown in Table 2 and Table 3.

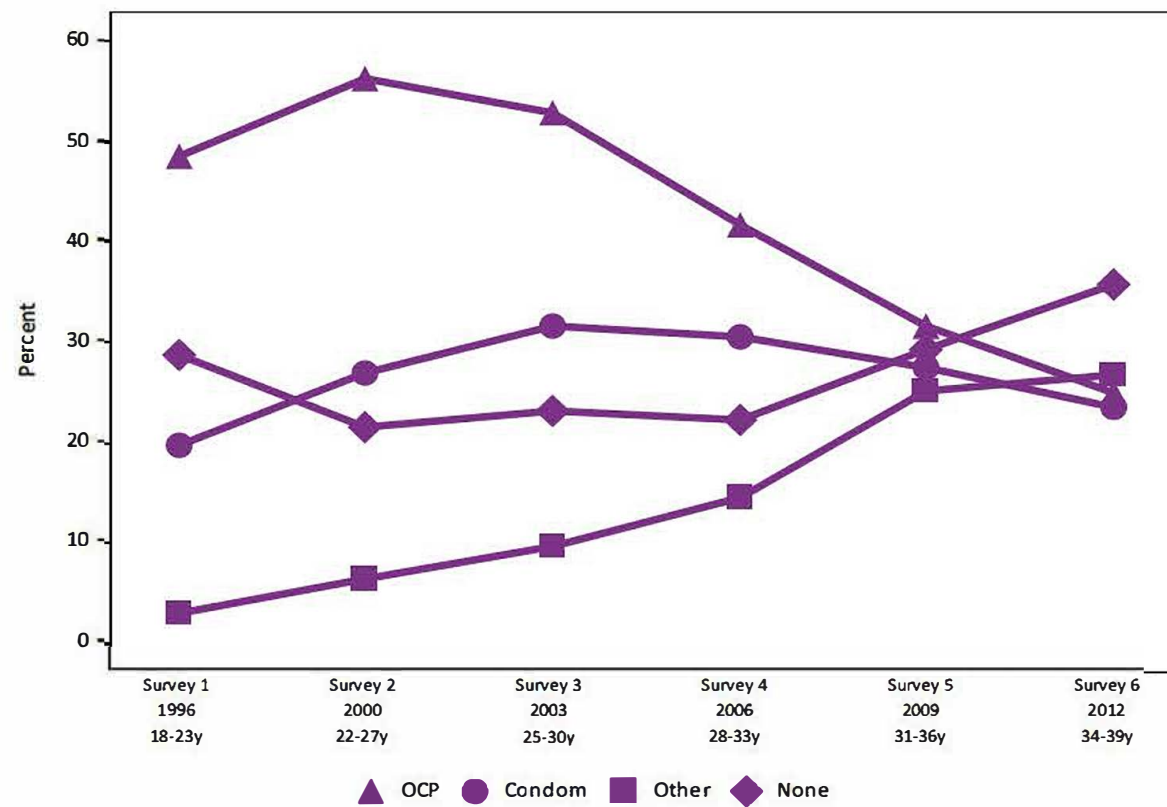


Figure 3 Percentages of women using the oral contraceptive pill, condoms, other forms of contraception, or no contraception from Survey 1 to Survey 6 (4,916). Note: Excludes women who reported they were trying to fall pregnant.

Table 2 ALSWH 1921-26 cohort - schedule of surveys and response rates 1996 - 2011

Survey 1 1996	Survey 2 1999	Survey 3 2002	Survey 4 2005	Survey 5 2008	Survey 6 2011
Age 70-75	Age 73-78	Age 76-81	Age 79-84	Age 82-87	Age 85-90
N=12,432	N=10,434	N=8,647	N=7,158	N=5,561	N=4,055

Table 3 ALSWH 1921-26 cohort six-month follow-up survey completions (2011 - 2013)

	6MF 1 (November 2011)	6MF 2 (May 2012)	6MF 3 (November 2012)	6MF 4 (May 2013)
Mailed	4,707	3,754	3,239	2,750
Respondents	3,839 (82%)	3,353 (89%)	2,894 (89%)	2,402 (87%)

Surveys have included questions on a broad range of health-related themes, including:

- Physical, social and emotional functioning (SF-36 Health related quality of life measure)
- Degree of difficulties with activities of daily living and need for assistance with activities of daily living
- Sight and hearing difficulties
- Falls
- Physical activity, height and weight
- Demographics and living circumstances

Health and health service use

The percentage of women who rated their health as fair or poor increased from 27% at age 70 to 75 years to 45% by age 85 to 90 years. Derived from a series of standard questions that assess health-related quality of life, the two main sub-scales showed only a slight decline for the mean score for mental health that contrasted with a marked decline in the mean score for physical functioning.

The change in self-rated health and physical functioning was reflected in increases in the percentage of women reporting high blood pressure, diabetes, heart disease, and those who reported having had a stroke (see Figure 4). The percentage of those with osteoporosis and arthritis also increased over the survey period (Figure 4).

The decline in health was also in line with increases in GP consultations, with the percentage of women who consulted their GP more than 12 times over the previous year rising from 15% to 20%.

Functional abilities and caring

The percentage of women who reported needing help from others for daily tasks due to long-term illness rose fourfold, from 8% at age 70 to 75 years to 34% by age 87 to 92 years. This was also evident in the increase of scores that assess difficulties with activities of daily living (such as dressing and bathing) and instrumental activities of daily living (such as cooking and driving).

Women were also likely to be caring for others because of that person's illness or disability. At age 70-75, women were twice as likely to be caring for someone else (17%) than needing care for themselves. By Survey 6, this ratio was reversed, with around 10% of women aged 85-90 years caring for another person. The percentage of women who reported providing care for children on at least an occasional basis declined from 45% at age 73 to 78 years to 14% at 85 to 90 years.

Key issues

Data from earlier surveys highlight that most older women are in good, very good or excellent health during their 70's and early 80's, and are able to live

Future data collection from the 1973-78 cohort and from the newest cohort of young women (born 1989-95) will allow ALSWH to continue providing unparalleled data on the early predictors of many health outcomes, as well as supporting the development of health policy, and informing the type, timing, and targeting of preventive health initiatives and health services.

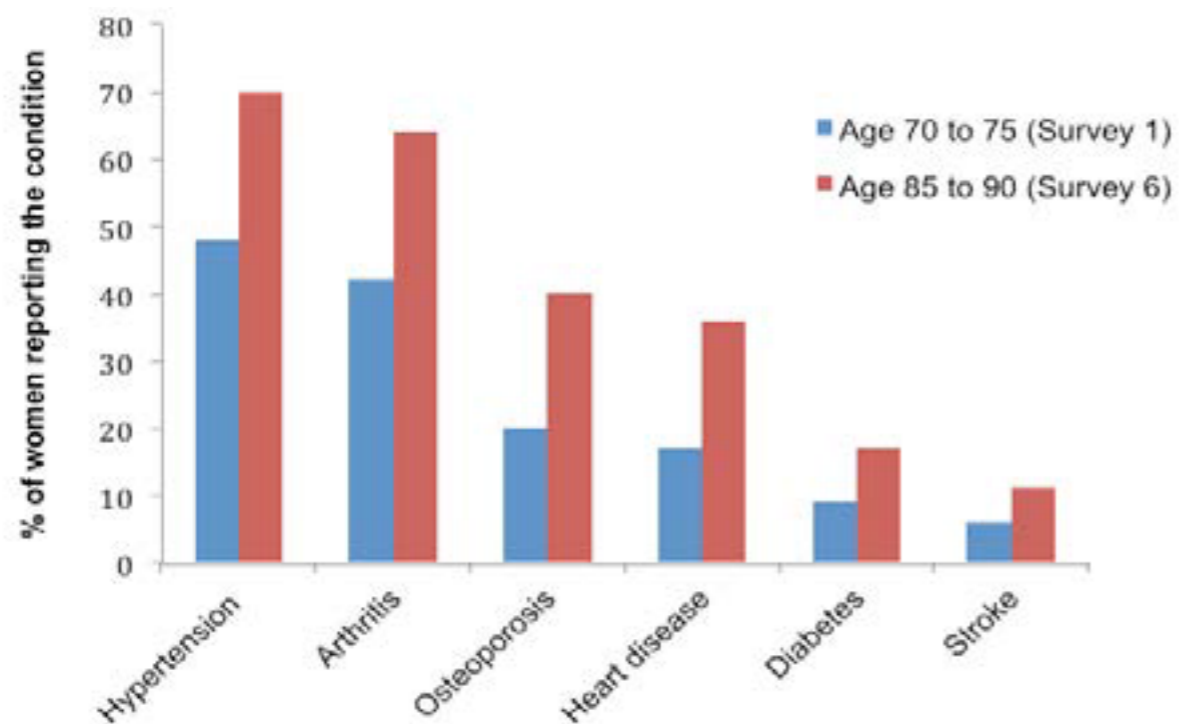


Figure 4 Changes in percentages of women from the 1921-26 cohort reporting diagnoses of selected physical conditions from Survey 1 to Survey 6

independently and make important contributions to their families and communities, although increasing numbers will report chronic conditions. These data have implications for policies concerning healthy and active ageing which look to optimise quality of life in older age and develop social and physical environments that support older people and allow them to maximise their activity and participation. Health in older age is a significant resource not only for the woman herself, but also for her family and community. The economic contributions of these women must also not be underestimated, and are illustrated in these data in the proportions providing care for others and childcare well into the women's later lives.

Supportive environments for older people include neighbourhoods, housing and transport. ALSWH data show how the women transition from living in a house, to living in a unit, retirement village or aged care facility. These changes in housing mirror changes in marital status from being more likely to be married to more likely to be widowed and may also correspond to increasing needs for assistance in activities of daily living. Women may also have moved to be near family, and in so doing allow themselves to have a greater role in caring for grandchildren as well as receiving care for themselves. Appropriate housing for older people has been identified as a critical factor in maintaining functional independence and community participation. Many women would have sold their houses to move to other accommodation, unlocking housing for other parts of the community and releasing the equity to provide for other needs. Appropriate housing is also

essential for the delivery of aged care and in keeping with policies for ageing in place.

Healthy behaviours including nutrition and physical activity are key drivers of health in older age. This cohort entered adulthood prior to the global rise in the incidence of obesity. Few women were obese, and women's BMI tended to decrease over time. Underweight is a potential issue for this cohort, particularly as they age and may represent a loss of lean body mass and poor nutrition. Moreover, underweight women are less likely to have survived and are less likely to be included in the later surveys. Increasing levels of physical inactivity may exacerbate these nutritional problems, resulting in poor appetite as well as loss of muscle strength. Physical activity programs for older people can be tailored to their functional capacity, and can help improve strength and balance, reduce falls and improve independence and overall wellbeing.

As the cohort ages, fewer women are able to drive themselves, and they are more likely to be reliant on public transport. Lack of transport options limit women's ability to provide care, participate in social activities, and seek health care. Access to convenient, affordable and safe transport and appropriate community designs contribute to age friendly environments which can promote social integration and physical health.

The changes in women's health demonstrated in this summary provide important information for understanding the pace of change in the development of health

conditions, increasing levels of disability and increasing needs for health and social care and other forms of instrumental support. Self-reporting of conditions on the surveys has been validated against hospital records with good agreement for conditions such as arthritis, moderate agreement for cardiovascular disease, and poor agreement for stroke. Reports of osteoporosis are dependent on access to bone densitometry which is indicated for women over age 70. Increasing reporting of osteoporosis over the study period will reflect both true increases in prevalence as well as increases in diagnoses of pre-existing conditions.

Increasing needs for health care are illustrated by the increasing number of general practitioner visits over successive time points. However, it must be noted that women with the greatest need for health service use are more likely to have died over the course of the study. There is also a suggestion of a potential inequity in access to GP services at the oldest ages, although this requires more thorough investigation.



54 papers using ALSWH data were published or accepted for publication in national and international scientific journals during 2014.

PUBLISHED PAPERS

Alhazmi A, Stojanovsk E, McEvoy M, Brown W & Garg M.

Diet-quality score is a predictor of type 2 diabetes risk in women: The Australian Longitudinal Study on Women's Health.
British Journal of Nutrition, 2014; 112(06), 945-951.

The present study aimed to determine the ability of two diet quality scores to predict the incidence of type 2 diabetes in women. The study population comprised a nationally representative sample of 8370 Australian middle-aged (45–50 years) women participating in the ALSWH (Australian Longitudinal Study on Women's Health), who were free of diabetes and completed FFQ at baseline. The associations between the Australian Recommended Food Score (ARFS) and Dietary Guideline Index (DGI) with type 2 diabetes risk were assessed using multiple logistic regression models, adjusting for sociodemographic characteristics, lifestyle factors and energy intake. During 6 years of follow-up, 311 incident cases of type 2 diabetes were reported. The DGI score was inversely associated with type 2 diabetes risk (OR comparing the highest with the lowest quintile of DGI was 0.51; 95 % CI 0.35, 0.76; P for trend = 0.01). There was no statistically significant association between the ARFS and type 2 diabetes risk (OR comparing the highest with the lowest quintile of ARFS was 0.99; 95 % CI 0.68, 1.43; P for trend = 0.42). The results of the present prospective study indicate that the DGI score, which assesses compliance with established dietary guidelines, is predictive of type 2 diabetes risk in Australian women. The risk of type 2 diabetes among women in the highest quintile of DGI was approximately 50 % lower than that in women in the lowest quintile. The ARFS was not significantly predictive of type 2 diabetes.

Anderson A, Hure A, Kay-Lambkin F & Loxton D.
Women's perceptions of information about alcohol use during pregnancy: A qualitative study.

BMC Public Health, 2014; 14(1048), doi:10.1186/1471-2458-14-1048.

Background: A number of alcohol guidelines worldwide suggest that pregnant women should abstain from alcohol.

However, high prevalence rates of alcohol consumption during pregnancy still exist. It is unknown whether there are problems with the dissemination of guideline information that is potentially contributing to such consumption. This qualitative study aimed to explore women's perceptions of information they received about alcohol use during pregnancy after the introduction of abstinence guidelines. Methods: Nineteen women from the Australian Longitudinal Study on Women's Health (ALSWH) 1973–78 cohort that reported a pregnancy in 2009 were recruited for semi-structured telephone interviews. The interviews were conducted until data saturation was reached. Interviews were transcribed, then thematically analysed. ALSWH survey data was used to augment the findings. The main outcome measure was women's perceptions of information received about alcohol use during pregnancy after the introduction of the 2009 Australian guidelines promoting abstinence during pregnancy.

Results: Women reported a number of problems with the information about alcohol use during pregnancy and with its dissemination. There were inconsistencies in the information about alcohol use during pregnancy and in the advice provided. Mixed messages and confusion about identifying a safe level of consumption had implications on women's decisions to drink or abstain during pregnancy. Women expressed a need for a clear, consistent message to be provided to women as early as possible. They preferred that the message come from healthcare professionals or another reputable source.

Conclusions: To make an informed decision about alcohol use during pregnancy, women must first be provided with the latest evidence-based information. As this study found a number of limitations with information provision, it is suggested that a systematic approach be adopted by healthcare professionals, in line with best-practice guidelines, to ensure all women are made aware of the alcohol recommendations for pregnancy.

Anderson AE, Hure AJ, Forder PM, Powers J, Kay-Lambkin FJ & Loxton DJ.

Risky drinking patterns are being continued into pregnancy: A prospective cohort study.

PLoS ONE, 2014; 9(1), e86171, doi:10.1371/journal.pone.0086171.

Background: Risky patterns of alcohol use prior to pregnancy increase the risk of alcohol-exposed pregnancies and subsequent adverse outcomes. It is important to understand how consumption changes once women become pregnant.

Objective: The aim of this study was to describe the characteristics of women that partake in risky drinking patterns before pregnancy and to examine how these patterns change once they become pregnant.

Methods: A sample of 1577 women from the 1973–78 cohort of the Australian Longitudinal Study on Women's Health were included if they first reported being pregnant in 2000, 2003, 2006, 2009 and reported risky drinking patterns prior to that pregnancy. Multinomial logistic regression was used to determine which risky drinking patterns were most likely to continue into pregnancy.

Results: When reporting risky drinking patterns prior to pregnancy only 6% of women reported weekly drinking only, whereas 46% reported binge drinking only and 48% reported both. Women in both binge categories were more likely to have experienced financial stress, not been partnered, smoked, used drugs, been nulliparous, experienced a violent relationship, and were less educated. Most women (46%) continued these risky drinking patterns into pregnancy, with 40% reducing these behaviors, and 14% completely ceasing alcohol consumption. Once pregnant, women who binged only prior to pregnancy were more likely to continue (55%) rather than reduce drinking (29%). Of the combined drinking group 61% continued to binge and 47% continued weekly drinking. Compared with the combined drinking group, binge only drinkers prior to pregnancy were less likely to reduce rather than continue their drinking once pregnant (OR = 0.37, 95% CI = 0.29, 0.47).

Conclusions: Over a third of women continued risky drinking into pregnancy, especially binge drinking, suggesting a need to address alcohol consumption prior to pregnancy.

Brown W, Pavey T & Bauman A.
Comparing population attributable risks for heart disease across the adult lifespan in women.

British Journal of Sports Medicine, 2014; doi:10.1136/bjsports-2013-093090.

Background: Recent estimates suggest that high body mass index (BMI), smoking, high blood pressure (BP) and physical inactivity are leading risk factors for the overall burden of disease in Australia. The aim was to examine the population attributable risk (PAR) of heart disease for each of these risk factors, across the adult lifespan in Australian women.

Methods: PARs were estimated using relative risks (RRs) for each of the four risk factors, as used in the Global Burden of Disease Study, and prevalence estimates from the Australian Longitudinal Study on Women's Health, in 15 age groups from 22–27 (N=9608) to 85–90 (N=3901).

Results: RRs and prevalence estimates varied across the lifespan. RRs ranged from 6.15 for smoking in the younger women to 1.20 for high BMI and high BP in the older women. Prevalence of risk exposure ranged from 2% for high BP in the younger women to 79% for high BMI in mid-age women. In young adult women up to age 30, the highest population risk was attributed to smoking. From age 31 to 90, PARs were highest for physical inactivity.

Conclusions: From about age 30, the population risk of heart disease attributable to inactivity outweighs that of other risk factors, including high BMI. Programmes for the promotion and maintenance of physical activity deserve to be a much higher public health priority for women than they are now, across the adult lifespan.

Byles J, Francis J, Chojenta C & Hubbard I.
Long-term survival of older Australian women with a history of stroke.

Journal of Stroke and Cerebrovascular Diseases; doi:10.1016/j.jstrokecerebrovasdis.2014.07.040

Background: Although many people survive an initial stroke, little is known about long-term impacts of stroke on survival.

Methods: Data from the Australian Longitudinal Study on Women's Health were used to compare 12-year survival rates in older women with prevalent stroke, incident stroke, and no stroke. Cox regression models were fitted to assess the effect of lifestyle and demographic characteristics on the relationship between stroke and all-cause mortality. The "no stroke" group was used as the reference category in all statistical models.

Results: At baseline, 4% of the women reported a previous stroke (prevalent stroke). At survey 2 in 1999, a further 3% reported having a stroke between 1996 and 1999 (incident stroke). Stroke was significantly associated with reduced long-term survival. Age-adjusted hazards ratios (HRs) were: 1.64 (1.43-1.89) for the "prevalent stroke" group and 2.29 (1.97-2.66) for the "incident stroke" group. Adjusting for comorbidities reduced the HRs, but the risk of death was still significantly higher in the 2 stroke groups. Adjusting for demographic and lifestyle factors did not make any further difference to the relationship between stroke and survival. However, obesity and past smoking were also risk factors for mortality.

Conclusions: This study highlights the long-term impacts of stroke on life expectancy and the importance of comorbidities and other lifestyle factors in affecting post stroke survival.

Byles J, Leigh L, Chojenta C & Loxton D.
Adherence to recommended health checks by women in mid-life: data from a prospective study of women across Australia.
Australian and New Zealand Journal of Public Health. 2014; 38(1):39-43. doi: 10.1111/1753-6405.12180

Objective: To examine the factors related to Papanicolaou (Pap) tests, mammography and cholesterol testing in mid-aged Australian women as they age.

Methods: Data were obtained from the 1946–51 cohort of the Australian Longitudinal Study on Women's Health, a prospective study of the health and lifestyle of Australian women. Data were collected via self-report mailed surveys on a three-yearly basis since 1996, when participants were aged 45–50. Demographic factors, health service use and health-related factors were examined in relation to screening practices in a lagged analysis.

Results: As women aged, they were less likely to have a Pap test and more likely to report having a mammogram and a cholesterol test. Smokers were less likely to have all screening tests, and HRT use and more general practitioner (GP) visits were associated with increased odds of having health checks. Compared to healthy weight, higher BMI was associated with increased odds of cholesterol testing but decreased odds for Pap testing; obese women had lower odds for mammography. Underweight women had lower odds for mammography and Pap testing. Worse self-rated health and self-report of a chronic condition were significantly related to increased likelihood of cholesterol testing. While some demographic and area of residence factors were also significantly associated with screening, large inequities based on socioeconomic status were not evident.

Conclusions: Health and healthcare use are important determinants of screening.

Implications: Greater advantage needs to be taken of opportunities to encourage women with more health risk behaviours and health problems to engage in screening.

Chojenta C, Harris S, Reilly N, Forder P, Austin M-P & Loxton D.
History of pregnancy loss increases the risk of mental health problems in subsequent pregnancies but not in the postpartum.
PLoS One, 2014; 9(4), e95038, doi:10.1371/journal.pone.0095038.

While grief, emotional distress and other mental health conditions have been associated with pregnancy loss, less is known about the mental health impact of these events during subsequent pregnancies and births. This paper examined the impact of any type of pregnancy loss on mental health in a subsequent pregnancy and postpartum. Data were obtained from a sub-sample (N = 584) of the 1973-78 cohort of the Australian Longitudinal Study on Women's Health, a prospective cohort study that has been collecting data since 1996. Pregnancy loss was defined

as miscarriage, termination due to medical reasons, ectopic pregnancy and stillbirth. Mental health outcomes included depression, anxiety, stress or distress, sadness or low mood, excessive worry, lack of enjoyment, and feelings of guilt. Demographic factors and mental health history were controlled for in the analysis. Women with a previous pregnancy loss were more likely to experience sadness or low mood (AOR = 1.75, 95% CI: 1.11 to 2.76, p = 0.0162), and excessive worry (AOR = 2.01, 95% CI: 1.24 to 3.24, p = 0.0043) during a subsequent pregnancy, but not during the postpartum phase following a subsequent birth. These results indicate that while women who have experienced a pregnancy loss are a more vulnerable population during a subsequent pregnancy, these deficits are not evident in the postpartum.

Clark B, Peeters G, Gomersall S, Pavey T & Brown W.

Nine year changes in sitting time in young and mid-aged Australian women: Findings from the Australian Longitudinal study for Women's Health.

Preventive Medicine, 2014; 64, 1-7.

Objective: To examine changes in sitting time (ST) in women over nine years and to identify associations between life events and these changes.

Methods. Young (born 1973–78, n = 5215) and mid-aged (born 1946–51, n = 6973) women reported life events and ST in four surveys of the Australian Longitudinal Study on Women's Health between 2000 and 2010. Associations between life events and changes in ST between surveys

Results. Against a background of complex changes there was an overall decrease in ST in young women (median change –0.48 h/day, interquartile range [IQR] = –2.54, 1.50) and an increase in ST in mid-aged women (median change 0.43 h/day; IQR = –1.29, 2.0) over nine years. In young women, returning to study and job loss were associated with increased ST, while having a baby, beginning work and decreased income were associated with decreased ST. In mid-aged women, changes at work were associated with increased ST, while retiring and decreased income were associated with decreased ST.

Conclusions. ST changed over nine years in young and mid-aged Australian women. The life events they experienced, particularly events related to work and family, were associated with these changes.

Daley C, Patterson AJ, Sibbritt D & MacDonald-Wicks L.

Unsaturated fat intakes and mental health outcomes in young women from the Australian Longitudinal Study on Women's Health.

Public Health Nutrition, 2014; doi:10.1017/S1368980014000561.

Objective: To determine if associations exist between a range of unsaturated fatty acid intakes and mental health outcomes.

Design: Cross-sectional data analysis of the Australian Longitudinal Study on Women's Health (ALSWH) Young Cohort Survey 3 that included the validated seventy-four-item Dietary Questionnaire for Epidemiological Studies FFQ, validated mental health scales and self-report questions on depression and anxiety.

Subjects: A nationally representative sample of young Australian women (25–30 years) from ALSWH. The 7635 women with plausible energy intakes (>4.5 but <20.0 MJ/d) were included in the analyses.

Results: Adjusted logistic regression analyses found statistically significant associations between higher intakes of α -linolenic acid and decreased likelihood of depressive symptoms indicated by the ten-item Center for Epidemiological Studies Depression Scale (CESD-10; OR=0.77; 95 % CI 0.60, 0.99; P=0.040) and the Short Form Health Survey (SF-36) mental health subscale (OR=0.73 95 % CI 0.56, 0.96; P=0.024). Furthermore, higher intakes of n-6 fatty acids (OR=0.96, 95 % CI 0.93, 0.99; P=0.019) and linoleic acid (OR=0.96, 95 % CI 0.93, 0.99; P=0.020) were associated with decreased likelihood of self-reported diagnosed anxiety and higher intakes of n-9 fatty acids (OR=1.02, 95 % CI 1.00, 1.04; P=0.041) and oleic acid (OR=1.02, 95 % CI 1.00, 1.05; P=0.046) were associated with increased likelihood of self-reported diagnosed anxiety.

Conclusions: Increased intakes of α -linolenic acid were associated with a reduced likelihood of depressive symptoms, increased intakes of n-6 fatty acids and linoleic acid were associated with a reduced likelihood of self-reported anxiety, and increased intakes of n-9 fatty acids and oleic acid were associated with an increased likelihood of anxiety. Additional studies are needed to further elucidate associations between unsaturated fatty acids and depression and anxiety.

de Luca K, Parkinson L & Byles J.
A study protocol for the profile of pain in older women: Assessing the multi dimensional nature of the experience of pain in arthritis.

Chiropractic & Manual Therapies, 2014; 22(28), doi:10.1186/s12998-014-0028-5.

Background: Arthritis is a significant contributor to illness, pain and disability and imposes a considerable burden upon the community. Pain is a cardinal symptom of arthritis and has significant implications on biopsychosocial wellbeing. The multidimensional nature of the experience of pain in arthritis has not been well defined in community-based samples.

Aims: The two aims of this study are to generate profiles of pain from a community sample of older women and to compare profiles for women with and without arthritis.

Methods: The sub study is a cross-sectional postal survey of 700 Australian community-based women. The survey includes a range of measures on health, arthritis and pain that will be used to examine the multidimensional nature

of the experience of pain in arthritis and generate profiles of pain.

Discussion: With no core set of measures for the evaluation of arthritis pain, this survey was created from an amalgamation of measures to capture multiple dimensions of pain. Findings from this study will assist in defining the symptom of pain in arthritis and may lead to further research in evidence-based treatment options for people with arthritis.

Dixon S, Herbert D, Loxton D & Lucke J.
'As many options as there are, there are just not enough for me': Contraceptive use and barriers to access among Australian women.
The European Journal of Contraception and Reproductive Health Care, 2014; 19(5), 340-351.

Objective: A comprehensive life course perspective of women's experiences in obtaining and using contraception in Australia is lacking. This paper explores free-text comments about contraception provided by women born between 1973 and 1978 who participated in the Australian Longitudinal Study on Women's Health (ALSWH).

Methods: The ALSWH is a national population-based cohort study involving over 40,000 women from three age groups, who are surveyed every three years. An initial search identified 1600 comments from 690 women across five surveys from 1996 (when they were aged 18–23 years) to 2009 (31–36 years). The analysis included 305 comments from 289 participants. Factors relating to experiences of barriers to access and optimal contraceptive use were identified and explored using thematic analysis.

Results: Five themes recurred across the five surveys as women aged: (i) side effects affecting physical and mental health; (ii) lack of information about contraception; (iii) negative experiences with health services; (iv) contraceptive failure; and (v) difficulty with accessing contraception.

Conclusion: Side effects of hormonal contraception and concerns about contraceptive failure influence women's mental and physical health. Many barriers to effective contraception persist throughout women's reproductive lives. Further research is needed into reducing barriers and minimising negative experiences, to ensure optimal contraceptive access for Australian women.

Dolja-Gore X, Loxton D, D'Este C & Byles J.
Mental health service use: Is there a difference between rural and Non-rural women in service uptake?
The Australian Journal of Rural Health, 2014; 22(3), 92-100.

This study examines differences in uptake of the Medicare items rolled out in 2006 under the 'Better Access Scheme' (BAS) between rural and non-rural Australian women. It compares differences in women's uptake of the BAS services by area of residence (ARIA+) across time using

the Australian Longitudinal Study of Women's Health (ALSWH) survey data linked to Medicare data. Women aged 28-33 years at the time the BAS was introduced that responded to the self-reported question on depression/anxiety and consented to linkage of their survey data with Medicare data (n = 4316). Participants were grouped by ARIA+ according to BAS use, diagnoses of anxiety/depression but no BAS use and other eligible women. Across all areas, women born 1973-1978 with a self-reported diagnosis of depression/anxiety or having treatment under the BAS had a significantly lower mean mental health score compared to other women. Significantly more women living in non-rural areas had used at least one service provided under the BAS initiative compared to women in outer regional, inner regional or remotes areas (21% versus 18% versus 13% versus 7%, respectively), and across all areas, 12% of women reported having a diagnosis of depression/anxiety but not been treated under the BAS. While there is a gradual uptake of the new BAS services, a large percentage of women who have a diagnosis of depression/anxiety have not been treated under the BAS. The data suggest that women in urban areas have been better able to take up the services compared to non-urban women.

Frawley J, Adams J, Steel A, Broom A, Gallois C & Sibbritt D.

Majority of women are influenced by non-professional information sources when deciding to consult a complementary and alternative medicine (CAM) practitioner during pregnancy.

Journal of Alternative and Complementary Medicine, 2014; 20(7), 1-7.

Objectives: Up to 87% of women are using some form of complementary and alternative medicine (CAM) during their pregnancy, and this study was conducted to investigate the information sources that these women find influential in relation to such use.

Design: The study sample was obtained via the Australian Longitudinal Study on Women's Health. This article is based on a substudy of 1835 pregnant women who were surveyed in 2010. The women answered questions about CAM use, pregnancy-related health concerns, and influential information sources in relation to CAM use. Logistic regression models were used to determine the information sources that women reported as influential in their decision making regarding CAM use.

Results: Of the respondents (n=1835, 79.2% response rate), 48.1% (n=623) of the pregnant women consulted a CAM practitioner and 91.7% (n=1485) used a CAM product during pregnancy. The results show that, of the women who used CAM, nearly half (48%, n=493) were influenced by their own personal experience of CAM and 43% (n=423) by family and friends. Other

popular sources of information were general practitioners 27% (n=263), the media (television, radio, books, magazines, newspapers) 22% (n=220), obstetricians 21% (n=208) and midwives 19% (n=190). Numerous statistically significant associations between influential information sources and pregnancy-related health conditions were identified.

Conclusions: Women utilize a wide variety of information sources regarding their CAM use during pregnancy. Nonprofessional sources of information were found to be particularly influential, and maternity health care professionals need to have a nonjudgmental and open discussion with women about their CAM use during pregnancy in order to ensure safe and effective maternal outcomes.

Holden L, Lee C, Hockey R, Ware R & Dobson A. Longitudinal analysis of relationships between social support and general health in an Australian population cohort of young women.

Quality of Life Research, 2014; doi:10.1007/s11136-014-0774-9.

Purpose: The influence of social support on health and quality of life has been well documented. There is less evidence on whether health status affects social support, and little is known about longitudinal relationships between social support and health in early adulthood. This study investigates these associations using both concurrent and time-lagged measures at 5 time-points over 12 years during early adulthood.

Methods: A population-based cohort of 9,758 young women from the Australian Longitudinal Study on Women's Health was used. Women were aged 22-27 in 2000 and 35-39 in 2012. The General Health subscale of the SF-36 and the MOS Social Support Survey 6-item Scale were used, with scores standardised to a range of 0-100. Longitudinal tobit models were used, because both social support and general health data were left skewed, with marked ceiling effects. All models were adjusted for status of the outcome of interest at the immediately previous survey.

Results: With both concurrent and time-lagged measures, there was a statistically significant difference in mean general health scores across social support quintiles after adjusting for demographic and behavioural covariates: lower general health was associated with lower social support. In reverse, social support mean scores were also significantly different across general health quintiles in both concurrent and time-lagged fully adjusted models.

Conclusion: Social support is significantly associated with both current and subsequent general health in early adulthood. The significance of the reverse associations indicates that the two mutually influence each other. This study highlights the importance of social support as a health-related quality of life issue.

Holden L, Lee C, Hockey R, Ware R & Dobson A. Validation of the MOS Social Support Survey 6-item (MOS-SSS-6) measure with two large population-based samples of Australian women.

Quality of life research, 2014; 23(10), 2849-53.

Purpose: This study aimed to validate a 6-item 1-factor global measure of social support developed from the Medical Outcomes Study Social Support Survey (MOS-SSS) for use in large epidemiological studies.

Methods: Data were obtained from two large population-based samples of participants in the Australian Longitudinal Study on Women's Health. The two cohorts were aged 53-58 and 28-33 years at data collection (N = 10,616 and 8,977, respectively). Items selected for the 6-item 1-factor measure were derived from the factor structure obtained from unpublished work using an earlier wave of data from one of these cohorts. Descriptive statistics, including polychoric correlations, were used to describe the abbreviated scale. Cronbach's alpha was used to assess internal consistency and confirmatory factor analysis to assess scale validity. Concurrent validity was assessed using correlations between the new 6-item version and established 19-item version, and other concurrent variables.

Results: In both cohorts, the new 6-item 1-factor measure showed strong internal consistency and scale reliability. It had excellent goodness-of-fit indices, similar to those of the established 19-item measure. Both versions correlated similarly with concurrent measures.

Conclusion: The 6-item 1-factor MOS-SSS measures global functional social support with fewer items than the established 19-item measure.

Holowko N, Jones M, Tooth L., Koupil I & Mishra G.

Educational mobility and weight gain over 13 years in a longitudinal study of young women.

BMC Public Health, 2014; 14, 1219. doi 10.1186/1471-2458-14-1219.

Background: Limited evidence exists about the role of education and own educational mobility on body weight trajectory. A better understanding of how education influences long term weight gain can help us to design more effective health policies.

Methods: Using random effects models, the association between i) highest education (n = 10 018) and ii) educational mobility over a 9 year period (n = 9 907) and weight gain was analysed using five waves of data (over 13 years) from the Australian Longitudinal Study on Women's Health 1973-78 cohort (from 18-23 years to 31-36 years).

Results: Highest educational attainment was inversely associated with weight at baseline and weight gain over 13 years. Compared to high educated women, those with a low (12 years or less) or intermediate (trade/

certificate/diploma) education, respectively, weighed an additional 2.6 kg (95% CI:1.9 to 3.1) and 2.5 kg (95% CI:1.9 to 3.3) at baseline and gained an additional 3.9 kg (95% CI:2.6 to 5.2) and 3.1 kg (95% CI:2.6 to 3.9) over 13 years. Compared to women who remained with a low education, women with the greatest educational mobility had similar baseline weight to the women who already had a high education at baseline (2.7 kg lighter (95% CI:-3.7 to -1.8) and 2.7 kg lighter (95% CI:-3.4 to -1.9), respectively) and similarly favourable weight gain (gaining 3.1 kg less (95% CI:-4.0 to -2.21) and 4.2 kg less (95% CI:-4.8 to -3.4) over the 13 years, respectively).

Conclusions: While educational attainment by mid-thirties was positively associated with better weight management, women's weight was already different in young adult age, before their highest education was achieved. These findings highlight a potential role of early life factors and personality traits which may influence both education and weight.

Jackson CA, Herber-Gast GC & Brown W. Joint effects of physical activity and BMI on risk of hypertension in women: A longitudinal study.

Journal of Obesity, 2014; doi:10.1155/2014/271532.

Introduction: There is debate as to whether physical activity counteracts the adverse effect of weight on health outcomes. We investigated how physical activity modifies the effect of body mass index (BMI) on hypertension risk.

Methods: BMI, physical activity, and hypertension were measured at baseline and at three-year interval for 14 years (from 1996 to 2010), in 10,339 participants in the Australian Longitudinal Study on Women's Health. Generalised estimating equation models for binary repeated measures were performed to determine the individual and joint effects of BMI and physical activity on incident hypertension.

Results: At baseline (mean age 47.6 ± 1.5 SD), 57% were healthy weight, 28% overweight, and 14% obese. Increasing BMI and decreasing physical activity were associated with increased risk of hypertension. Physical activity attenuated the positive association between weight and risk of hypertension, especially for obese women. Compared to healthy weight high active women, risk of hypertension in obese high active women was 3.4 times greater (OR 3.43, 95% CI 2.68, 4.39) and in obese inactive women 4.9 times greater (OR 4.91, 95% CI 3.92, 6.13).

Conclusions: Both physical activity and maintenance of a healthy body weight are associated with lower risk of hypertension. Physical activity reduced but did not remove the effect of obesity on hypertension risk.

Jackson CA, Jones M & Mishra GD. Educational and homeownership inequalities in stroke incidence: A population-based longitudinal study of mid-aged women.

European Journal of Public Health, 2014; 24(2), 231-236.

Background: We aimed to determine which socioeconomic status measures are associated with stroke risk in mid-aged women and assess the contribution of lifestyle, biological and psychosocial factors to observed associations.

Methods: We included women born in 1946–51 from the Australian Longitudinal Study on Women's Health, who were surveyed every 3 years. Using generalized estimating equation analysis, we determined the association between socioeconomic status and stroke at the subsequent survey, adjusting for time-varying covariates. For significant associations, we calculated the contribution of individual mediating factors in explaining these associations.

Results: Among 11 468 women aged 47–52 years, 177 strokes occurred during a 12-year follow-up. Education (odds ratio lowest vs. highest 2.45, 95% confidence interval: 1.40–4.30) and homeownership, but not occupation or managing on income, were significantly associated with stroke. After full adjustment, the overall association between education and stroke was non-significant. Lifestyle (smoking, exercise, alcohol and body mass index), biological (hypertension, diabetes, heart disease and hysterectomy/oophorectomy) and psychosocial (depression and marital status) factors explained 38% of the association in the lowest versus highest education groups. Lifestyle and biological factors together accounted for 34%. Mediators accounted for 29% of the association between homeownership and stroke, with lifestyle and psychosocial factors responsible for most of this attenuation. However, a significant association remained in fully adjusted models (odds ratio non-homeowner vs. homeowner 1.63, 95% confidence interval: 1.12–2.38).

Conclusions: Lower education level is associated with increased stroke risk in mid-aged women, and is partially mediated by known risk factors, particularly lifestyle and biological factors. Non-homeownership is associated with increased stroke risk, but the underlying mechanism is unclear.

Jackson M, Sztendur E, Diamond N, Byles J & Bruck D.
Sleep difficulties and the development of depression and anxiety: A longitudinal study of young Australian women.
Archives of Women's Mental Health, 2014; 17(3), 189-198.

Previous longitudinal studies have demonstrated that poor sleep may precede depression and anxiety. The current study examined the association between self-reported sleeping difficulties and new onset depression and anxiety in young women. A nationally representative sample of 9,683 young women from the Australian Longitudinal Study of Women's Health

was analyzed. Women were surveyed in 2000 (aged 22 to 25 years), 2003, 2006, and 2009. Generalized estimating equations were used to examine the association between sleeping difficulties in 2000 and new-onset depression (excluding postnatal depression) and anxiety at each subsequent survey. Significant increased risk of new onset depression (odds ratio (OR)=2.6 in 2003; OR=4.4 in 2006; OR=4.4 in 2009) and anxiety (OR=2.4 in 2006; OR=2.9 in 2009) was found at each follow-up survey in women who reported sleeping difficulties "often" in 2000. Further research is needed to uncover the mechanisms underlying the link between sleep problems and mental health.

Joham A, Boyle J, Ranasinha S, Zoungas S & Teede H.
Contraception use and pregnancy outcomes in women with polycystic ovary syndrome: Data from the Australian Longitudinal Study on Women's Health.

Human Reproduction, 2014; 29(4), 802-808.

Study question: Do contraception use, pregnancy outcome and number of children differ in women with and without polycystic ovary syndrome (PCOS)?

Summary answer: Women with PCOS were less likely to report use of contraception and more likely to report a miscarriage, whilst number of children was similar between groups.

What is known already: The oral contraceptive pill is used in the management of PCOS, but the patterns of contraception use in women with PCOS is not known. In women with PCOS who undergo assisted reproduction, the risk of pregnancy loss appears higher, yet pregnancy loss and family size among community-based women with PCOS is not known.

Study design, size and duration: This is a cross-sectional analysis of a longitudinal cohort study. Mailed survey data were collected at five time points (years 1996, 2000, 2003, 2006 and 2009). Data from respondents to Survey 4 (2006, aged 28–33 (n = 9145, 62% of the original cohort aged 18–23 years) were analysed.

Participants/materials, settings, methods: This study was conducted in a general community setting. Data from participants who responded to the questions on PCOS, contraception and pregnancy outcome were analysed. The main outcome measures were self-reported PCOS, body mass index (BMI), contraception use, pregnancy loss and number of children.

Main results and the role of chance: In women aged 28–33 years, women with PCOS were less likely to be using contraception (61 versus 79%, $P < 0.001$) and more likely to be trying to conceive (56 versus 45%, $P < 0.001$), compared with women not reporting PCOS. A greater proportion of women with PCOS reported pregnancy loss (20 versus 15%, $P = 0.003$). PCOS was not independently associated with pregnancy loss; however, BMI was independently associated with pregnancy loss in the overweight and obese groups (OR 1.2, 95% CI 1.04–1.4, $P = 0.02$ and OR 1.4, 95% CI 1.1–1.6, $P = 0.001$, respectively). Fertility treatment

use was also independently associated with pregnancy loss (adjusted OR 3.2, 95% CI 2.4–4.2, $P < 0.001$).

There was no significant difference in number of children between women with and without PCOS.

Limitations, reason for caution: PCOS, contraception use and pregnancy outcome data were self-reported. Attrition occurred, but is reasonable compared with similar longitudinal cohort studies.

Wider implications of the findings: This community-based cohort aged 28–33 years provides insights into the contraceptive use, pregnancy loss and family size of a large cohort of unselected women. Women reporting PCOS had lower rates of contraception use and were more likely to be currently trying to conceive, suggesting that they may be aware of potential fertility challenges, yet in those not planning to conceive, contraceptive use was low and further education may be required. Despite prior reports of higher rates of pregnancy loss in PCOS, usually from infertility services, in this community-based population, PCOS was not independently associated with pregnancy loss, yet independent risk factors for pregnancy loss included higher BMI, were higher in PCOS. The number of children per woman was similar in the both groups, albeit with more infertility treatment in PCOS. This may reassure women with PCOS that with access to fertility treatment, family sizes appear similar to women not reporting PCOS.

Joham A, Ranasinha S, Zoungas S, Moran L & Teede H.
Gestational Diabetes and Type 2 Diabetes in Reproductive-Aged women with Polycystic Ovary Syndrome.

Journal of Clinical Endocrinology and Metabolism, 2014; 99(3), E447-E452.

Context: Polycystic ovary syndrome (PCOS) affects 6–21% of women. PCOS has been associated with an increased risk of dysglycaemia including gestational diabetes (GDM) and type 2 diabetes (T2DM).

Objective: To assess the prevalence of dysglycaemia and the impact of obesity in young reproductive-aged women with and without PCOS in a community-based cohort.

Design: Cross-sectional analysis of data from a large longitudinal study (the Australian Longitudinal Study on Women's Health (ALSWH)).

Participants: Women were randomly selected from the national health insurance database. Standardised data collection occurred at 5 survey time points (years 1996, 2000, 2003, 2006 and 2009). Data from survey 4 (2006, n=9145, 62% of original cohort aged 18 to 23 years) were examined for this study.

Main outcome measures: Self-reported PCOS, GDM and T2DM

Results: In women aged 28 to 33 years, PCOS prevalence was 5.8% (95% CI: 5.3%–6.4%). The prevalence of GDM

(in women reporting prior pregnancy) and T2DM was 11.2% and 5.1% in women with PCOS and 3.8% and 0.3% in women without PCOS respectively (p for both < 0.001). PCOS was associated with increased odds of GDM and T2DM. After adjusting for age, Body Mass Index (BMI), hypertension, smoking and demographic factors, the odds of GDM (OR 2.1, 95% CI 1.1–3.9, $p = 0.02$) and T2DM (OR 8.8, 95% CI 3.9–20.1, $p < 0.001$) remained increased in women reporting PCOS.

Conclusions: In a large community-based cohort of reproductive-aged women, PCOS was independently associated with higher risk of GDM and T2DM, independent of BMI. Aggressive screening, prevention and management of dysglycaemia is clearly warranted in women with PCOS.

Johnstone M & Lee C.
Lifestyle Preference Theory: No match for young Australian women.
Journal of Sociology, 2014;
doi:10.1177/1440783313518247.

Women's work and family choices are affected by social pressures and external constraints. Understanding young women's aspirations for future work and family is important for understanding their future needs and for developing supportive work–family practices and policies. Despite criticism, Lifestyle Preference Theory has been argued to explain women's life choices, and historically has been used to inform Australian policy. We address three issues: whether Lifestyle Preference Groups are consistent with young Australian women's stated preferences; whether aspirations are consistent over time; and whether women's later lives are consistent with their earlier stated preferences. Using four waves of data from the Australian Longitudinal Study on Women's Health (ALSWH), young women's work and family aspirations were investigated cross-sectionally and longitudinally. Most aspired to both paid work and family; most changed their preferences over time; and the fit between preferences in 2000 and lifestyle in 2009 was modest. Lifestyle Preference Theory was not an adequate fit to the data.

Jones M, Hockey R, Mishra D & Dobson A.
Visualising and modelling changes in categorical variables in longitudinal studies.
MC Medical Research Methodology, 2014; 14(32),
doi:10.1186/1471-2288-14-32.

Background: Graphical techniques can provide visually compelling insights into complex data patterns. In this paper we present a type of lasagne plot showing changes in categorical variables for participants measured at regular intervals over time and propose statistical models to estimate distributions of marginal and transitional probabilities.

Methods: The plot uses stacked bars to show the distribution of categorical variables at each time interval,

with different colours to depict different categories and changes in colours showing trajectories of participants over time. The models are based on nominal logistic regression which is appropriate for both ordinal and nominal categorical variables. To illustrate the plots and models we analyse data on smoking status, body mass index (BMI) and physical activity level from a longitudinal study on women's health. To estimate marginal distributions we fit survey wave as an explanatory variable whereas for transitional distributions we fit status of participants (e.g. smoking status) at previous surveys.

Results: For the illustrative data the marginal models showed BMI increasing, physical activity decreasing and smoking decreasing linearly over time at the population level. The plots and transition models showed smoking status to be highly predictable for individuals whereas BMI was only moderately predictable and physical activity was virtually unpredictable. Most of the predictive power was obtained from participant status at the previous survey. Predicted probabilities from the models mostly agreed with observed probabilities indicating adequate goodness-of-fit.

Conclusions: The proposed form of lasagne plot provides a simple visual aid to show transitions in categorical variables over time in longitudinal studies. The suggested models complement the plot and allow formal testing and estimation of marginal and transitional distributions. These simple tools can provide valuable insights into categorical data on individuals measured at regular intervals over time.

Ju H, Jones M & Mishra G.
Premenstrual syndrome and dysmenorrhea: symptom trajectories over 13 years in young adults.
Maturitas, 2014; 78(2), 99-105.

Objectives: To ascertain the prevalence of premenstrual syndrome (PMS) and dysmenorrhea in Australian women and to examine whether there is population subgroups with distinct symptom trajectories.

Study design: A prospective cohort study, including 9671 young women random sampled from national Medicare database and followed up for 13 years, examined the prevalence, the trend and the symptom trajectories of the conditions.

Main outcome measures: Prevalence of PMS and dysmenorrhea over time, their symptom trajectories, and the probability of symptom reporting at follow-up.

Results: The prevalence of PMS varied between 33 and 41% and that of dysmenorrhea between 21 and 26%. The probabilities of reporting PMS and dysmenorrhea were 0.75 (95% CI, 0.73, 0.76) and 0.70 (95% CI, 0.68, 0.72), respectively, among women who reported them in three previous consecutive surveys. Four unique

trajectories were identified for both conditions. PMS was experienced by 80% of women sometime during the study period, with normative (22.1%), late onset (21.9%), recovering (26.5%) and chronic (29.5%) groups revealed. Dysmenorrhea occurred in 60% of women with normative (38.3%), low (28.0%), recovering (17.2%) and chronic (16.5%) groups identified.

Conclusions: PMS and dysmenorrhea are common among young women. Both have relatively stable prevalence over time, but exhibit considerable variation at the individual level. Four subgroups of women who followed similar symptom trajectories were identified. PMS was experienced by 80% of women during the study period and it tended to be a long-lasting problem in many. Although 60% of women experienced dysmenorrhea, only a small group continuously reported it. Smoking and illicit drugs use, and smoking and obesity were more common among women with persistent PMS and dysmenorrhea respectively.

Ju H, Jones M & Mishra G.
The prevalence and risk factors of dysmenorrhea.
Epidemiologic Reviews, 2014; 36(1), 104-113.

Dysmenorrhea is a common menstrual complaint with a major impact on women's quality of life, work productivity, and health-care utilization. A comprehensive review was performed on longitudinal or case-control or cross-sectional studies with large community-based samples to accurately determine the prevalence and/or incidence and risk factors of dysmenorrhea. Fifteen primary studies, published between 2002 and 2011, met the inclusion criteria. The prevalence of dysmenorrhea varies between 16% and 91% in women of reproductive age, with severe pain in 2%–29% of the women studied. Women's age, parity, and use of oral contraceptives were inversely associated with dysmenorrhea, and high stress increased the risk of dysmenorrhea. The effect sizes were generally modest to moderate, with odds ratios varying between 1 and 4. Family history of dysmenorrhea strongly increased its risk, with odds ratios between 3.8 and 20.7. Inconclusive evidence was found for modifiable factors such as cigarette smoking, diet, obesity, depression, and abuse. Dysmenorrhea is a significant symptom for a large proportion of women of reproductive age; however, severe pain limiting daily activities is less common. This review confirms that dysmenorrhea improves with increased age, parity, and use of oral contraceptives and is positively associated with stress and family history of dysmenorrhea.

Kirby E, Broom A, Adams J, Sibbritt D & Refshauge K.
A qualitative study of influences on older women's practitioner choices for back pain care.
BMC Health Services Research, 2014; 14(131), doi:10.1186/1472-6963-14-131.

Background: Back pain is an increasingly prevalent health concern amongst Australian women for which a wide range of treatment options are available, offered by biomedical, allied health and complementary and alternative medicine (CAM) providers. Although there is an emerging literature on patterns of provider utilisation, less is known about the reasons why women with back pain select their chosen practitioner. In this paper we explore the influences on back pain sufferers' decision-making about treatment seeking with practitioners for their most recent episode of back pain.

Methods: Drawing on 50 semi-structured interviews with women aged 60–65 years from the Australian Longitudinal Study on Women's Health (ALSWH) who have chronic back pain, we focus on the factors which influence their choice of practitioner. Analysis followed a framework approach to qualitative content analysis, augmented by NVivo 9 qualitative data analysis software. Key themes were identified and tested for rigour through inter-rater reliability and constant comparison.

Results: The women identified four predominant influences on their choice of practitioner for back pain: familiarity with treatment or experiences with individual practitioners; recommendations from social networks; geographical proximity of practitioners; and, qualifications and credentials of practitioners. The therapeutic approach or evidence-base of the practices being utilised was not reported by the women as central to their back pain treatment decision-making.

Conclusions: Choice of practitioner appears to be unrelated to the therapeutic approaches, treatment practices or the scientific basis of therapeutic practices. Moreover, anecdotal lay reports of effectiveness and the 'treatment experience' may be more influential than formal qualifications in guiding women's choice of practitioner for their back pain. Further work is needed on the interpersonal, collective and subjective underpinnings of practitioner choice, particularly over time, in order to better understand why women utilise certain practitioners for back pain.

Leung J, McKenzie S, Martin J, Dobson A & McLaughlin D.
Longitudinal patterns of breast cancer screening: Mammography, clinical, and breast self-examinations in a rural and urban setting.
Women's Health Issues, 2014;24(1), e139-e146.

Background: We identified breast screening patterns over time and patterns among women residing in rural and urban areas by sociodemographic factors.

Methods: This study employs a longitudinal design over 9 years from 2001 on 11,200 women aged 50 to 55 from the Australian Longitudinal Study on Women's Health. Area of residence was defined in accordance with the accessibility remoteness index of Australia Plus. Breast screening measures included mammography utilization,

clinical breast examinations (CBE), and breast self examinations (BSE).

Findings: Most women had a mammogram in the past 2 years in combination with CBE or BSE or both. Despite poorer access to mammography services, women residing in rural areas had similar mammography screening rates to their urban counterparts. Women residing in rural areas were less likely to have CBEs, but more likely to conduct BSEs. The breast screening behaviors were generally consistent over time.

Conclusions: The poorer breast cancer survival among rural women is unlikely to be explained by differences in mammography service use. A substantial proportion of the population may be experiencing over screening by conducting all three types of breast screening.

Leung J, Pachana N & McLaughlin D.
Social support and health-related quality of life in women with breast cancer: A longitudinal study.
Psycho-Oncology, 2014; 23(9), 1014-1020.

Objectives: A breast cancer diagnosis is a distressing event that impacts on physical and psychological functioning. This study examined the longitudinal relationships among a diagnosis of breast cancer, social support, and health-related quality of life (HRQOL).

Methods: Participants were 412 women from the 1946–1951 birth cohort of the Australian Longitudinal Study on Women's Health who self-reported a new diagnosis of breast cancer between 1998 and 2007. The three surveys of longitudinal data analyzed included data 3 years before diagnosis, at diagnosis (baseline), and 3 years after diagnosis (follow-up). Social support was measured using the 19-item Medical Outcomes Study Social Support Survey; HRQOL was measured using the Medical Outcomes Study 36-item Short-Form Health Survey.

Results: Compared with pre-diagnosis HRQOL, women newly diagnosed with breast cancer reported significantly poorer HRQOL in subscales related to pain, physical functioning, and health and vitality. At 3-year follow-up, HRQOL had improved in most domains to levels consistent with pre-diagnosis. Levels of social support remained stable across time. The structural equation model showed that social support was positively predictive of better physical and mental HRQOL at 3-year follow-up.

Conclusions: Longitudinal analyses indicate that social support appears to be an important predictor of HRQOL in women diagnosed with breast cancer. In particular, positive emotional and informational support that may normally be provided by a partner is important in maintaining HRQOL. Identification of those lacking social support, especially patients without partners, will enable them to be guided to appropriate support networks and programs.

Lucke J & Herbert D.
Higher uptake of LARC and permanent contraceptive methods by Australian women living in rural and remote areas.
Australian & New Zealand Journal of Public Health, 2014; 38(2), 112-116.

Objectives: This paper examines factors associated with the uptake of i) long-acting reversible, ii) permanent and iii) traditional contraceptive methods among Australian women.

Methods: Participants in the Australian Longitudinal Study on Women's Health born in 1973-78 reported on their contraceptive use at three surveys: 2003, 2006 and 2009. The participants were 5,849 women aged 25-30 in 2003 randomly sampled from Medicare. The main outcome measure was current contraceptive method at age 28-33 years categorised as long-acting reversible methods (implant, IUD, injection), permanent (tubal ligation, vasectomy), and traditional methods (oral contraceptive pills, condoms, withdrawal, safe period).

Results: Compared to women living in major cities, women in inner regional areas were more likely to use long-acting (OR=1.26, 95%CI 1.03-1.55) or permanent methods (OR=1.43, 95%CI 1.17-1.76). Women living in outer regional/remote areas were more likely than women living in cities to use long-acting (OR=1.65, 95%CI 1.31-2.08) or permanent methods (OR=1.69, 95%CI 1.43-2.14).

Conclusions: Location of residence is an important factor in women's choices about long-acting and permanent contraception in addition to the number and age of their children.

Implications: Further research is needed to understand the role of geographical location in women's access to contraceptive options in Australia.

May-Ling J, Loxton D & McLaughlin D.
Trauma exposure and the subsequent risk of coronary heart disease among mid-aged women.

Journal of Behavioral Medicine, 2014; doi:10.1007/s10865-014-9577-2.

The objective of the current study was to examine whether exposure to trauma in the form of a history of physical, mental, emotional or sexual abuse or violence predicted new onset of coronary heart disease (CHD) in women. In addition, this study aimed to examine the mediation effects of psychological, lifestyle and health related factors in the abuse-CHD relationship. Data from 6 surveys over 15 years, from the Australian Longitudinal Study on Women's Health, a large prospective cohort study, were used. Participants from the 1946-1951 cohort who did not self-report heart disease at surveys 1 (1996) and 2 (1998) and who had provided information on other variables were included (n = 9,276). After adjusting for age,

women who reported trauma exposure at baseline were 1.54 times more likely (95 % confidence interval 1.29-1.83) to report new onset of CHD than those who did not report trauma exposure. The association between trauma and CHD was largely explained by psychological factors, suggesting a direct pathway between exposure to trauma and risk of CHD.

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

Is use of formal community services by older women related to changes in their informal care arrangements?

Ageing & Society, 2014; 34(2), 310-329.

This paper examines how the relationships between the factors (predisposing, enabling and illness) of the 1973 Andersen framework and service use are influenced by changes in the caring role in older women of the 1921-26 cohort of the Australian Longitudinal Study on Women's Health. Outcome variables were the use of three formal community support services: (a) nursing or community health services, (b) home-making services and © home maintenance services. Predictor variables were survey age and the following carer characteristics: level of education, country of birth, age, area of residence, ability to manage on income, need for care, sleep difficulty and changes in caring role. Carer changes were a significant predictor of formal service use. Their inclusion did not attenuate the relationship between the Andersen framework factors and service use, but instead provided a more complete representation of carers' situations. Women were more likely to have used support services if they had changed into or out of co-resident caring or continued to provide co-resident care for a frail, ill or disabled person, needed care themselves, and reported sleep difficulties compared with women who did not provide care. These findings are important because they indicate that support services are particularly relevant to women who are changing their caring role and who are themselves in need of care.

Mishra G, Schoenaker D, Mhrshahi S & Dobson A.

How do women's diets compare with the new Australian dietary guidelines?

Public Health Nutrition, 2014; doi:org/10.1017/S1368980014000135.

Objective: To compare women's diets with recommended intakes from the new Australian Dietary Guidelines (ADG 2013).

Design: Cross-sectional study using data from the Australian Longitudinal Study on Women's Health. Diet was assessed using a validated FFQ.

Subjects: Women in the young cohort (born 1973-1978, aged 31-36 years) and mid-age cohort (born

1946-1951, aged 50-55 years). Women (n 18 226) were categorised into three groups: 'young women' (n 5760), young 'pregnant women' at the time or who had given birth in the 12 months prior to the survey (n 1999) and 'mid-age women' (n 10 467).

Results: Less than 2% of women in all three groups attained the ADG 2013 recommendation of five daily servings of vegetables, with the majority needing more than two additional servings. For young women, less than one-third met recommendations for fruit (32%) and meat and alternatives (28 %), while only a small minority did so for dairy (12 %) and cereals (7 %). Fifty per cent of pregnant women met guidelines for fruit, but low percentages reached guidelines for dairy (22 %), meat and alternatives (10 %) and cereals (2.5 %). For mid-age women, adherence was higher for meat and alternatives (41 %) and cereals (45 %), whereas only 1% had the suggested dairy intake of four daily servings.

Conclusions: For most women to follow ADG 2013 recommendations would require substantially increased consumption of cereals, vegetables and dairy. Findings have implications for tailoring the dissemination of dietary guidelines for women in different age groups and for pregnant women.

Murthy V, Sibbritt D, Adams J, Broom A, Kirby E & Refshauge K M.

Self-prescribed complementary and alternative medicine use for back pain amongst a range of care options: Results from a nationally representative sample of 1310 women aged 60-65 years.

Complementary Therapies in Medicine, 2014; 22(1), 133-140.

Objective: To examine the prevalence and characteristics of women who self-prescribe complementary and alternative medicine (CAM) for back pain.

Methods: A cross-sectional survey of a nationally-representative sample of women aged 60-65 years from the Australian Longitudinal Study on Women's Health (ALSWH).

Results: A significant number of women (75.2%, n = 985) self-prescribed one or more CAM for back pain in the previous twelve months. Use of self-prescribed CAM for back pain was not associated with socio-economic status. The most common self-prescribed CAM used by women was supplements (n = 776, 59.2%), vitamins/minerals (n = 592, 45.2%), yoga/meditation (n = 187, 14.3%), herbal medicines (n = 172, 13.1%) and aromatherapy oils (n = 112, 8.6%). Women who visited general practitioners (GPs) more than three times in the previous twelve months were 1.59 times (95% CI: 1.14, 2.22) more likely to self-prescribe CAM for back pain than those women who did not visit GPs. Women who visited a pharmacist three or more

times in the previous twelve months were 2.90 times (95% CI: 1.65, 5.09) more likely to self-prescribe CAM for back pain than those women who did not visit a pharmacist. Conclusion: This study identifies substantial use of self-prescribed CAM by women for back pain regardless of their education, income or urban/rural residency. In order to ensure safe, effective practice it is important that all providing and managing health services for back pain sufferers remain mindful of patients' possible use of self-prescribed CAM.

O'Dwyer S, Moyle W, Pachana N, Sung B & Barrett S.

Feeling that life is not worth living (death thoughts) among middle-aged, Australian women providing unpaid care.

Maturitas, 2014; 77(4), 375-379.

Objective: To identify the proportion of female carers who experience death thoughts and the factors associated with these thoughts, using data from the Australian Longitudinal Study on Women's Health (ALSWH).

Methods: A cross-sectional analysis of the fifth ALSWH survey was conducted. 10,528 middle-aged women provided data on caring and death thoughts, 3077 were carers and 2005 of those were included in the multivariate analysis.

Results: 7.1% of female carers had felt life was not worth living in the previous week and were classified as having experienced death thoughts, compared with 5.7% of non-carers (p = .01). Carers with death thoughts had poorer physical and mental health, higher levels of anxiety, lower levels of optimism, and reported less social support (p < .01). In a multivariate model social support, mental health, carer satisfaction, and depressive symptoms significantly predicted death thoughts. Carers with clinically significant depressive symptoms were four times more likely to experience death thoughts than those without. Carers who were satisfied with their role were 50% less likely to have experienced death thoughts than those who were dissatisfied.

Conclusions: A small but significant proportion of female carers experience death thoughts and may be at risk for suicide. These findings add to the growing body of evidence on suicide-related thoughts and behaviours in carers and have implications for health professionals and service providers

Peeters G, Mishra G, Dobson A & Brown W.
Health care costs associated with prolonged sitting and inactivity.

American Journal of Preventive Medicine, 2014; 46(3), 265-272.

Background: Physical inactivity and prolonged sitting are associated with negative health outcomes.

Purpose: To examine the health-related costs of prolonged sitting and inactivity in middle-aged women.

Methods: Australian Longitudinal Study on Women's Health participants (born 1946–1951) answered questions about time spent sitting, walking, and in moderate and vigorous leisure activities in 2001 (n=6108), 2004 (n=5902), 2007 (n=5754) and 2010 (n=5535) surveys. Sitting time was categorized as low (0–4), moderate (5–7), and high (≥ 8 hours/day). Physical activity was categorized as inactive (< 40), low (40–600), moderate (600–1200) and high (≥ 1200 metabolic equivalent minutes/week). National health insurance claims data averaged over the survey year ± 1 year were used to calculate annual costs (Australian Dollars [AU\$]). Differences between categories in median costs were estimated using quantile regression over four surveys with bootstrapped 95% CIs. Analyses were performed in 2013.

Results: In 2010, annual median costs were AU\$689 (interquartile range [IQR]=274, 1541) in highly active participants, AU\$741 (IQR=279, 1690) in inactive participants, AU\$671 (IQR=273, 1551) in participants with low sitting time, and AU\$709 (IQR=283–1575) in participants with high sitting time. The difference in median costs for inactive and highly active participants was AU\$94 (CI=57, 131) after adjustment for confounders. No statistically significant associations were found between sitting time and costs. When sitting and physical activity were combined, high sitting time did not add to the inactivity-associated increased costs. Associations were consistent across normal weight, overweight, and obese subgroups. Conclusions: Physical inactivity, but not prolonged sitting, was associated with higher health-related costs in middle-aged women.

Peeters G, Tett S, Duncan E, Mishra G & Dobson A.
Osteoporosis medication dispensing for older Australian women from 2002 to 2010: Influences of publications, guidelines, marketing activities and policy.
Pharmacoepidemiology & Drug Safety, 2014; 23(12), 1303-1311.

Purpose: Developments in anti-osteoporosis medications (AOM) have led to changes in guidelines and policy, which, along with media and marketing strategies, have had an impact upon the prescribing of AOM. The aim was to examine patterns of AOM dispensing in older women (aged 76–81 years at baseline) from 2002 to 2010.

Methods: Administrative claims data were used to describe AOM dispensing in 4649 participants (born in 1921–1926 and still alive in 2011) in the Australian Longitudinal Study on Women's Health. The patterns were interpreted in the context of changes in guidelines, indications for subsidy, publications (scholarly and general media), and marketing activities. Results: Total use of AOM increased from 134

DDD/1000/day in 2002 to 216 DDD/1000/day in 2007, but then decreased to 184 DDD/1000/day in 2010. Alendronate was the most commonly dispensed AOM but decreased from 2007, while use of risedronate (2002 onward), strontium ranelate (2007 onward) and zoledronic acid (2008 onward) increased. Etidronate and HRT prescriptions gradually decreased over time. The decline in alendronate dispensing coincided with increases of other bisphosphonates and publicity about potential adverse effects of bisphosphonates, despite relaxing indications for bone density testing and subsidy for AOM.

Conclusions: Overall dispense of AOM from 2002 reached a peak in 2007 and thereafter declined despite increases in therapeutic options and improved subsidized access. The recent decline in overall AOM dispensing seems to be explained largely by negative publicity rather than specific changes in guidelines and policy.

Peng W, Adams J, Hickman L & Sibbritt D
Complementary/alternative and conventional medicine use amongst menopausal women: Results from the Australian Longitudinal Study on Women's Health.
Maturitas, 2014; 79(3), 340-342.

Large population-based studies of complementary and alternative medicine (CAM) and conventional medicine use amongst menopausal women are lacking. This study helps address this gap by analysing data from a nationally representative sample of 10011 Australian women aged 59–64 years. Overall, 39% of menopausal women consulted CAM practitioners, 75% used self-prescribed CAM, 95% consulted general practitioners (GP) and 50% consulted specialists during the previous year, and 12% were current hormone replacement therapy (HRT) users. Our findings suggest that CAM is a significant healthcare option utilized by women to treat menopausal symptoms, and so requires attention from GPs and specialists.

Potter J, Collins C, Brown L & Hure A.
Diet quality of Australian breast cancer survivors: A cross sectional analysis from the Australian Longitudinal Study on Women's Health.
Journal of Human Nutrition and Dietetics, 2014; 27(6), 569-576.

Background: Evidence supports strong associations between healthful eating patterns and maintaining a healthy weight with favourable health outcomes for breast cancer survivors (BCS). The present study aimed to evaluate the diet quality of Australian BCS and to determine whether diet quality differed between BCS and age-matched healthy controls (HC) or by geographical location.

Methods: This cross-sectional study included 281 BCS and 4069 HC from the Australian Longitudinal Study on Women's Health mid-aged cohort completing Survey 3 in 2001. Data from the Dietary Questionnaire for Epidemiological Studies food frequency questionnaire were used to calculate the Australian Recommended Food Score (ARFS), a validated summary estimate of diet quality based on adherence to the Australian dietary guidelines.

Results: The mean (SD) ARFS of the BCS group was 33.2 (9.4) out of a maximum of 74. Mean (SD) total ARFS and component scores of BCS did not differ from the HC group [32.9 (8.7)] and no differences were found in ARFS between urban and rural BCS.

Conclusions: This is the first study dedicated exclusively to describing the diet quality of Australian BCS. Although no difference was found when comparisons were made with a HC group, there is considerable room for improvement in the diet quality of Australian BCS. Given research suggesting higher risk of chronic conditions such as obesity amongst BCS, and the recognition of optimising diet quality as a key factor in health promotion for all population groups, data from the present study suggest the need for research targeting the feasibility and impact of improving diet quality of Australian BCS.

Schoenaker D, Jackson CA, Rowlands J & Mishra G.
Socioeconomic position, lifestyle factors and age at natural menopause: A systematic review and meta-analyses of studies across six continents.
International Journal of Epidemiology, 2014; 43(5), 1542-62.

Background: Age at natural menopause (ANM) is considered a marker of biological ageing and is increasingly recognized as a sentinel for chronic disease risk in later life. Socioeconomic position (SEP) and lifestyle factors are thought to be associated with ANM. Methods: We performed a systematic review and meta-analyses to determine the overall mean ANM, and the effect of SEP and lifestyle factors on ANM by calculating the weighted mean difference (WMD) and pooling adjusted hazard ratios. We explored heterogeneity using meta-regression and also included unpublished findings from the Australian Longitudinal Study on Women's Health.

Results: We identified 46 studies across 24 countries. Mean ANM was 48.8 years [95% confidence interval (CI): 48.3, 49.2], with between-study heterogeneity partly explained by geographical region. ANM was lowest among African, Latin American, Asian and Middle Eastern countries and highest in Europe and Australia, followed by the USA. Education was associated with later ANM (WMD middle vs low education 0.30, 95% CI: 0.10, 0.51; high vs low education 0.64, 95% CI 0.26, 1.02). A

similar dose-response relationship was also observed for occupation. Smoking was associated with a 1-year reduction of ANM (WMD: -0.91, 95% CI: -1.34, -0.48). Being overweight and moderate/high physical activity were modestly associated with later ANM, but findings were less conclusive.

Conclusions: ANM varies across populations, partly due to differences across geographical regions. SEP and some lifestyle factors are associated with ANM, but further research is needed to examine the impact of the associations between risk factors and ANM on future health outcomes.

Schofield M & Khan A.
Predictors of prescribed medication use for depression, anxiety, stress, and sleep problems in mid-aged Australian women.
Social Psychiatry and Psychiatric Epidemiology, 2014; 49, 1835-1847.

Objective: The study examined prevalence of self-reported use of medication recommended or prescribed by a doctor for depression, anxiety, stress, and sleep problems; and modelled baseline factors that predicted use over 3 years for each condition.

Methods: Analyses were undertaken on the 2001 and 2004 surveys of mid-aged women in the Australian Longitudinal Study on Women's Health.

Dependent variables were self-reported use in past 4 weeks of medications recommended or prescribed by a doctor for depression, anxiety, stress, or sleep problems in 2001 and 2004. Generalized Estimating Equations (GEE) were used to predict medication use for each condition over 3 years.

Results: Prevalence of prescribed medication use (2001, 2004) for each condition was depression (7.2, 8.9%), anxiety (7.4, 9.0%), stress (4.8, 5.7%), and sleep problems (8.7, 9.5%). Multivariable analyses revealed that odds of medication use across 3 years in all four conditions were higher for women with poorer mental and physical health, using hormone replacement therapy (HRT), or having seen a counsellor; and increased over time for depression, anxiety, and stress models. Medication use for depression was also higher for overweight/obese women, ex-smokers, and unmarried. Medication use for anxiety was higher for unmarried and non-working/low occupational women. Medication use for stress was higher for non-working women. Additional predictors of medication for sleep were surgical menopause, and area of residence.

Conclusions: Self-reported use of prescribed medication for four mental health conditions is increased over time after controlling for mental and physical health and other variables. Research needs to explore decision-making processes influencing differential rates of psychoactive medication use and their relationship with health outcomes.

Sibbritt D; Catling C, Adams J, Shaw A & Homer C.

The self-prescribed use of aromatherapy oils by pregnant women.

Women and Birth, 2014; 27(1), 41-45.

Background: While some studies have reported effectiveness of aromatherapy oils use during labour there is no reported evidence of efficacy or risks of aromatherapy oils use for pregnancy-related symptoms or conditions. A number of aromatherapy oils are unsafe for use by pregnant women yet there is currently no research examining the prevalence and characteristics of women who use aromatherapy oils during pregnancy.

Aim: To conduct an empirical study of the prevalence and characteristics of women who use aromatherapy oils during pregnancy.

Methods: The research was conducted as part of the Australian Longitudinal Study on Women's Health (ALSWH), focusing on the nationally representative sample of Australian women aged 31–36 years. Data were collected via a cross-sectional questionnaire (n = 8200) conducted in 2009.

Results: Self-prescribed aromatherapy oils were used by 15.2% of pregnant women. Pregnant women were 1.57 (95% CI: 1.01, 2.43) times more likely to self-prescribe use of aromatherapy oils if they have allergies or hayfever, and 2.26 (95% CI: 1.34, 3.79) times more likely to self-prescribe use of aromatherapy oils if they have a urinary tract infection (UTI).

Conclusion: Our study highlights a considerable use of aromatherapy oils by pregnant women. There is a clear need for greater communication between practitioners and patients regarding the use of aromatherapy oils during pregnancy, as well a need for health care practitioners to be mindful that pregnant women in their care may be using aromatherapy oils, some of which may be unsafe.

Sibbritt D.

The decline of herbal medicine/naturopathy consultations: How research can help further the profession.

Australian Journal of Herbal Medicine, 2014; 26(1), 8-9.

At present there is much debate within the herbal medicine/naturopathy professions as to the merits of registration. Further, there is a history of division within the professions of herbal medicine and naturopathy in relation to different models of regulation. So, with much energy devoted to these emotive issues, it is not surprising that a relatively small amount of research is being conducted by herbalists/naturopaths - resulting in the general public and other healthcare providers knowing little of the daily practice activities of herbalists/ naturopaths, as well as the health benefits that can be gained by consulting these practitioners.

Smith M D, Russell A & Hodges P.

The relationship between incontinence, breathing disorders, gastrointestinal symptoms, and back pain in women: A longitudinal cohort study.

Clinical Journal of Pain, 2014; 30(2), 162-167.

Objectives: Recent studies suggest a relationship between incontinence, respiratory disorders, gastrointestinal (GI) symptoms, and back pain (BP). However, causality is difficult to infer. This longitudinal study aimed to determine whether the presence or development of one disorder increases risk for the development of another.

Methods: Women from the Australian Longitudinal Study on Women's Health were divided into subgroups; those with no BP (n=7259), no incontinence (n=18,480), no breathing problems (including allergy) (n=15,096), and no GI symptoms (n=17,623). Each subgroup was analyzed to determine the relationship between the development of the absent condition and the presence or development of the other conditions. Factors with a previously identified relationship with BP were included in analysis.

Results: Women with pre-existing and/or newly developed incontinence (prevalence ratios [PR]: 1.26 to 2.12) and breathing problems (PR: 1.38 to 2.11) had an increased risk for the development of BP, and women with pre-existing and newly developed BP were more likely to develop incontinence and breathing problems (PR: 1.18 to 2.44 and 1.53 to 2.62, respectively). The presence of GI symptoms was also identified as a risk factor for the development of these conditions.

Discussion: This study provides evidence of a relationship between BP, incontinence, respiratory problems, and GI symptoms in which the presence of one symptom is associated with the development of another. This suggests that common factors may contribute to the development of symptoms across this range of conditions.

Fearnley EJ, Magalhães RJ, Speldewinde P, Weinstein P & Dobson A.

Environmental correlates of mental health measures for women in Western Australia.

Eco Health, 2014; doi:10.1007/s10393-014-0966-3.

A recent study in Western Australia identified area level associations between soil salinisation and hospital admissions for depression. Our study assessed the quantitative relationship between mental health measures at the individual level and location specific environmental measurements on salinity, as well as two other indicators of environmental degradation and change: land surface temperature and normalised difference vegetation index, a proxy for rainfall. Location specific environmental measurements

were linked to individual mental health scores of women in three age cohorts from the Australian Longitudinal Study on Women's Health using a geographic information system. Bayesian geostatistical linear regression models were developed to assess associations between Environmental exposures and mental health scores of women. In contrast to previous studies using area level measures, our study found no associations between individual level measurements of mental health scores for women in south-west Western Australia and salinity, LST or NDVI.

Steel A, Adams J, Sibbritt D, Broom A & Gallois C.

Determinants of women consulting with a complementary and alternative medicine practitioner for pregnancy-related health conditions.

Women and Health, 2014; 54(2), 127-144.

Abstract Objective: To explore the determinants that are related to women's likelihood to consult with a complementary and alternative medicine (CAM) practitioner during pregnancy. Study setting: Primary data collected as a sub-study of the Australian Longitudinal Study on Women's Health (ALSWH) in 2010.

Study design: A cross-sectional survey of 2445 women from the ALSWH 'younger' cohort (n=8012) who had identified as being pregnant or had recently given birth in 2009.

Data collection/extraction: Independent Poisson backwards stepwise regression models were applied to four CAM practitioner outcome categories: acupuncturist, chiropractor, massage therapist and naturopath.

Principal findings: The survey was completed by 1835 women (79.2%). The factors associated with women's consultation with a CAM practitioner differed by practitioner groups. A range of demographic factors were related, including employment status, financial status and level of education. Women's health insurance coverage, health status, and perceptions toward both conventional maternity care and CAM were also associated with their likelihood of consultations with all practitioner groups but in diverse ways.

Conclusions: The determinants for women's consultations with a CAM practitioner varied across practitioner groups. Stakeholders and researchers would benefit from giving attention to specific individual modalities when considering CAM use in maternity care.

Tooth L & Mishra G.

Socioeconomic factors associated with trajectories of caring by young and mid-aged women: A cohort study.

BMC Public Health, 2014; 14(74), doi:10.1186/1471-2458-14-74.

Background: The health and socioeconomic outcomes from being a caregiver are well described. In contrast, the long-term trajectories of caring undertaken by women, and the demographic, socioeconomic status, health status and health behaviour characteristics associated with these trajectories is not well known.

Methods: The data were from the Australian Longitudinal Study on Women's Health. Participants were 14,202 women born 1973–78 followed for 13 years, and 12,282 women born 1946–1951 followed for 9 years. Latent class analyses and multinomial logistic regression were used.

Results: Five distinct trajectories of caring were identified for the younger women: these represented 'ongoing', 'starting', 'never' and 2 types of 'transitional' caring. While traditional indicators of poorer socioeconomic status were associated with trajectories representing 'ongoing' and 'starting' caring, they were not associated with 'transitional' caring trajectories. Three distinct trajectories of caring were identified for the mid-age women: these represented 'ongoing', 'starting' and 'never' caring. For the mid-age women, poorer socioeconomic status indicators were associated with the 'ongoing' caring, but not 'starting' caring.

Conclusions: Women in the 1973–78 cohort showed more varying and transitional caring trajectories compared to those in the 1946–51 cohort, and these trajectories were not associated with traditional socioeconomic indicators. An 'opportunity cost' theory for who become carers does not support young transitional carers or mid-aged women beginning new caring. Health policies, education and awareness campaigns for women carers need to target outside previously identified populations.

Tu F, Hongyan Du, Goldstein G, Beaumont J, Zhao Y & Brown W.

The influence of prior oral contraceptive use on risk of endometriosis is conditional on parity.

Fertility and Sterility, 2014; 101(6), 1697-1704.

Objective: To estimate the influence of prior oral contraceptive pill (OCP) use on future diagnosis of endometriosis in young women.

Design: Prospective cohort study, the Australian Longitudinal Study on Women's Health.

Patient(s): 9,585 women age 18-23 at study onset.

Intervention(s): None.

Main outcome measure(s): Risk of self-reported endometriosis estimated with Cox proportional-hazards regression with time-dependent covariates.

Result(s): Compared with never users, endometriosis hazard ratios in nulliparous women with <5 years

and ≥ 5 years of OCP use (preceding diagnosis) were 1.8 (95% CI, 1.30-2.53) and 2.3 (95% CI, 1.59-3.40), respectively. Similar risk was seen in both women reporting infertility and unsure fertility. In parous women with <5 years of use, the hazard ratio for endometriosis was 0.41 (95% CI, 0.15-0.56) and for ≥ 5 years of use was 0.45 (95% CI, 0.16-1.23). Women reporting early noncontraceptive OCP use had a twofold higher risk (odds ratio 2.07; 95% CI, 1.72-2.51).

Conclusion(s): Prior OCP exposure reduces the risk of diagnosis of endometriosis in parous women but increases it among nulliparous women; these associations appear unaffected by fertility status. An increased risk of endometriosis diagnosis seen in women reporting early noncontraceptive OCP use may explain some of the positive OCP risk seen in nulliparous women.

Uijtdewilligen L, Peeters G, van Uffelen J, Twisk J, Singh A & Brown W.

Determinants of physical activity in a cohort of young adult women. Who is at risk of inactive behaviour?

Journal of Science and Medicine in Sport, 2014; doi:10.1016/j.jsams.2014.02.005.

Objectives: To identify the biological, socio-demographic, work-related and lifestyle determinants of physical activity (PA) in young adult women.

Design: Prospective cohort study.

Methods: Self-reported data from 11,695 participants (aged 22-27 years in 2000) in the Australian Longitudinal Study on Women's Health were collected over 9 years in 2000, 2003, 2006 and 2009. Generalised Estimating Equations were used to examine univariable and multivariable associations of body mass index (BMI), country of birth, area of residence, education, marital status, number of children, occupational status, working hours, smoking, alcohol intake, and stress with PA status (active, ≥ 600 MET-min/week; or inactive, <600 MET-min/week, consistent with public health guidelines).

Results: All variables were significantly associated with PA in univariable models. In the multivariable model, the lowest odds of being active (compared with the relevant reference categories) were for women who: were born in Asia (OR = 0.53), had less than 12 years of education (OR = 0.79), were married (OR = 0.66) or in a de facto relationship (OR = 0.79), had at least one child (OR ranging from 0.67 to 0.69), and were classified as non (OR = 0.66) or rare drinkers (OR = 0.79).

Conclusions: These results are among the first to confirm the biological, socio-demographic, work-related and lifestyle determinants of PA in women in their twenties and early thirties. These findings may be used to inform and improve the development of strategies, and to identify target groups most in need of intervention effort.

Uijtdewilligen L, Twisk J, Singh A, Chin A, Paw M, van Mechelen W & Brown W.

Biological, socio-demographic, work and lifestyle determinants of sitting in young adult women: A prospective cohort study.

International Journal of Behavioural Nutrition and Physical Activity, 2014; 11(7), doi:10.1186/1479-5868-11-7.

Background: Sitting is associated with health risks. Factors that influence sitting are however not well understood. The aim was to examine the biological, socio-demographic, work-related and lifestyle determinants of sitting time (including during transport, work and leisure) in young adult Australian women.

Methods: Self-reported data from 11,676 participants (aged 22-27 years in 2000) in the Australian Longitudinal Study on Women's Health were collected over 9 years in 2000, 2003, 2006 and 2009. Generalised Estimating Equations were used to examine univariable and multivariable associations of body mass index (BMI), country of birth, area of residence, education, marital status, number of children, occupational status, working hours, physical activity, smoking, alcohol intake and stress with week- and weekend-day sitting time.

Results: Compared with women in the respective referent categories, (1) women with higher BMI, those born in Asia, those with less than University level education, doing white collar work, working 41-48 hours a week, current smokers, non, rare or risky/ high risk drinkers and those being somewhat stressed had significantly higher sitting time; and (2) women living in rural and remote areas, partnered women, those with children, those without a paid job and blue collar workers, those working less than 34 hours a week, and active women had significantly lower sitting time.

Conclusions: Among young adult Australian women, those with higher BMI, those born in Asia, those with higher-level occupations and long working hours, were most at risk of higher sitting time. These results can be used to identify at-risk groups and inform intervention development.

van den Berg MJ, Mishra GD, van der Schouw YT & Herber-Gast GC.

Vasomotor menopausal symptoms are not associated with incidence of breast cancer in a population-based cohort of mid-aged women.

European Journal of Cancer, 2014; 50(4), 824-830.

Background: Recently, two case-control studies showed that vasomotor meno-pausal symptoms (VMS), i.e. hot flushes (HF) and night sweats (NS), are associated with a decreased risk of breast cancer. Until now, however, no prior studies have prospectively

examined the association between VMS and breast cancer incidence. We investigated this in a population-based cohort of mid-aged women in Australia.

Methods: We included 11,297 women without a history of breast cancer aged 47-52 years from the Australian Longitudinal Study on Women's Health, surveyed every 3 years from 1998 to 2010. Information regarding first invasive breast cancer events and date of diagnosis was obtained from cancer registries. We determined the association between HF and NS and breast cancer occurrence before the subsequent survey, using time-dependent cox regression analysis, adjusting for time-varying lifestyle factors.

Results: At baseline 33.1% of the women reported experiencing HF and 24.6% reported NS. During a mean follow-up of 13.7 years, 348 cases of breast cancer occurred. VMS were not associated with breast cancer; adjusted hazard ratios were 1.09; 95% confidence interval (CI) 0.87-1.35 for HF and 1.06; 95% CI 0.84-1.33 for NS. No significant interactions were found between each of body mass index, alcohol use, current hormone therapy use, meno-pausal status and VMS and breast cancer (p-values > 0.05).

Conclusions: We did not find an association between VMS and breast cancer incidence. Research in this area is scarce and additional large prospective population-based studies are required to confirm or refute these findings.

Vashum K, McEvoy M, Hasnat M, McElduff P, Hure A, Byles J & Attia J.

Dietary zinc is associated with a lower incidence of depression: findings from two Australian cohorts.

Journal of Affective Disorders, 2014; 166, 249-257.

Background: Several animal and human studies have shown that zinc plays a role in reducing depression, but there have been no longitudinal studies in both men and women on this topic. The aim of this study was to investigate dietary zinc, and the zinc to iron ratio, as predictors of incident depression in two large longitudinal studies of mid-age and older Australians.

Methods: Data were self-reported, as part of the Australian Longitudinal Study on Women's Health (women aged 50-61 years) and Hunter Community Study (men and women aged 55-85 years). Validated food frequency questionnaires were used to assess dietary intake. Energy-adjusted zinc was ranked using quintiles and predictors of incident depression were examined using multivariate logistic regression.

Results: Both studies showed an inverse association between dietary zinc intake and risk of depression, even after adjusting for potential confounders. Compared to those with the lowest zinc intake those with the highest zinc intake had significantly lower odds of developing depression with a reduction of

about 30-50%. There was no association between the zinc to iron ratio and developing depression in either study.

Limitations: Dietary assessment was carried out only at baseline and although adjustments were made for all known potential confounders, residual confounding cannot be entirely excluded.

Conclusions: Low dietary zinc intake is associated with a greater incidence of depression in both men and women, as shown in two prospective cohorts.

Further studies into the precise role of zinc compared to other important nutrients from the diet are needed.

ACCEPTED PUBLICATIONS

Fairweather-Schmidt K, Lee C & Wade T. **A longitudinal study of mid-age women with indicators of disordered eating.** *Developmental Psychology, 2014.*

This longitudinal study of mid-age women has two main aims: to examine the effect of disordered eating (DE) on quality of life (QoL) among women, including a comparison with a younger cohort; and to investigate the mediating roles of both depressive symptoms and social support on the longitudinal relationship between DE and QoL as potential mechanisms of action. We used self-report data from six waves of the Australian Longitudinal Study on Women's Health over 14 years. A total of 12,338 women participating in the mid-age cohort (ageing from 45-50 to 59-64) provided self-report indications of DE at Surveys 1 and 2, and QoL (SF-36 component scales - mental [MCS] and physical [PCS]) at Surveys 2-6. DE was reported by 10.98% of the women; this group also reported significantly poorer mental and physical QoL than those without DE, and this effect was sustained over time. Comparison with a parallel analysis of a younger cohort of women showed that the effect on mid-age women's physical QoL is greater than that of the younger women. The relationships between baseline DE and changes in QoL (both physical and mental) over time were mediated by levels of depressive symptoms and of social support over time. This study underscores the significant effect of DE on QoL in mid age, an effect which is partially or fully mediated by depressive symptoms or social support. Wellbeing of mid-age women with indicators of DE needs to be supported by tailoring prevention and interventions activities specifically for this group.

Joham A, Boyle J, Zoungas S & Teede H. **Hypertension in Reproductive-Aged Women with Polycystic Ovary Syndrome and Association with Obesity.**

American Journal of Hypertension, 2014.

Background: Polycystic ovary syndrome (PCOS) is a common disorder with metabolic complications, yet the prevalence of hypertension is unclear. We aim to assess hypertension prevalence and the impact of obesity in women reporting PCOS compared to those not reporting PCOS.

Methods: This is a cross-sectional analysis of data from a large longitudinal study, the Australian Longitudinal Study on Women's Health (ALSWH). Women from the general community were randomly selected from the national health insurance database. Standardised data collection occurred at six survey time points. Data from survey 4 in 2006 (n=8612, age 28-33 years) were examined for this study. The main outcome measures studied were self-reported PCOS and hypertension.

Results: Reported PCOS prevalence was 5.8% (95% CI: 5.3%-6.4%). Women with PCOS had higher BMI. Hypertension prevalence was 5.5% (95% CI: 3.3-7.7) in women reporting PCOS and 2.0% (95% CI: 1.6-2.3) in women not reporting PCOS (p<0.001). Hypertension was associated with BMI (OR 1.07, 95% CI 1.05-1.10, p<0.001) with a trend towards an association with PCOS (p=0.09). On subgroup analysis, hypertension was not associated with BMI in women reporting PCOS, but was associated in those not reporting PCOS.

Conclusions: In this large community-based cohort, we note increased prevalence of hypertension and higher BMI in young women reporting PCOS. BMI association with hypertension appeared clear in women not reporting PCOS. Yet in women with PCOS, hypertension appeared to not be associated with BMI, akin to observations on diabetes risk in PCOS, suggesting that metabolic abnormalities in PCOS may be independent of BMI.

Joham A, Teede H, Ranasinha S, Zoungas S & Boyle J.

Prevalence of infertility and use of fertility treatment in women with Polycystic Ovary Syndrome: data from a large community-based cohort study.

Journal of Women's Health, 2014.

Objective: Polycystic ovary syndrome (PCOS) affects 6-21% of women. PCOS is the primary cause of anovulatory infertility, with major health and economic costs, yet we are unaware of any community-based, natural history studies on fertility and fertility treatments published to date. We aim to compare infertility, fertility treatment use and relationship to body mass index (BMI) in women reporting PCOS to women not reporting PCOS in a community-based population.

Design: Cross-sectional analysis of a longitudinal cohort study, the Australian Longitudinal Study on Women's Health (ALSWH).

Patients: Women from the general community were randomly selected from the national public insurance database. Mailed survey data were collected at multiple time points. At survey 4, there were 9145 respondents aged 28-33. 478 women reported having PCOS from 8612 women with known PCOS status. Information regarding fertility status was available for 4856 women. This was the subgroup used in this analysis.

Measurements: The main outcomes measures are self-reported PCOS status, BMI, infertility, use of fertility therapies including ovulation induction and in-vitro fertilization (IVF). Logistic regression was used to examine factors associated with infertility and use of fertility treatment.

Results: Self-reported PCOS prevalence was 5.8% (95% CI: 5.3%-6.4%). Infertility was noted by 72% of 309 women reporting PCOS, compared to 16% of 4547 women not reporting PCOS (p<0.001). Infertility was 15 fold higher in women reporting PCOS (adjusted OR 14.9, 95% CI 10.9-20.3), independent of BMI. Of women reporting infertility, there was greater use of fertility hormone treatment, (62%, n=116 vs 33%, n=162, p<0.001) in women reporting PCOS; however IVF use was similar.

Conclusions: In this community-based cohort of women, infertility and use of fertility hormone treatment was significantly higher in women reporting PCOS. Considering the prevalence of PCOS and the health and economic burden of infertility, strategies to optimise fertility are important.

Navin TJ, Stewart-Williams J, Parkinson L, Sibbritt D & Byles JE.

Identification of diabetes, heart disease, hypertension and stroke in mid-and older-aged women: comparing self-report and administrative hospital data records.

Geriatrics & Gerontology International, 2014.

Aim: To estimate the prevalence of diabetes, heart disease, hypertension and stroke in self-report and hospital data in two cohorts of women; measure sensitivity and agreement between data sources; and compare between cohorts.

Methods: Women born between 1946-1951 and 1921-1926 who participated in the Australian Longitudinal Study on Women's Health (ALSWH); were New South Wales residents; and admitted to hospital (2004-2008) were included in the present study. The prevalence of diabetes, heart disease, hypertension and stroke was estimated using self-report (case 1 at latest survey, case 2 across multiple surveys) and hospital records. Agreement (kappa) and sensitivity (%) were calculated. Logistic regression measured the association between patient characteristics and agreement.

Results: Hypertension had the highest prevalence and estimates were higher for older women: 32.5%

case 1, 45.4% case 2, 12.8% in hospital data (1946-1951 cohort); 57.8% case 1, 73.2% case 2, 38.2% in hospital data (1921-1926 cohort). Agreement was substantial for diabetes: $\kappa=0.75$ case 1, $\kappa=0.70$ case 2 (1946-1951 cohort); $\kappa=0.77$ case 1, $\kappa=0.80$ case 2 (1921-1926 cohort), and lower for other conditions. The 1946-1951 cohort had 2.08 times the odds of agreement for hypertension (95% CI 1.56 to 2.78; P<0.0001), and 6.25 times the odds of agreement for heart disease (95% CI 4.35 to 10.0; P<0.0001), compared with the 1921-1926 cohort.

Conclusion: Substantial agreement was found for diabetes, indicating accuracy of ascertainment using self-report or hospital data. Self-report data appears to be less accurate for heart disease and stroke. Hypertension was underestimated in hospital data. These findings have implications for epidemiological studies relying on self-report or administrative data.

Parkinson L, Magin P, Thomson A, Byles J, Caughey G, Etherton-Beer C, Gnjjidic D, Hilmer S, Lo T, McCowan C, Moorin R, Pond D.

Anticholinergic burden in older women: Not seeing the wood for the trees?

Medical Journal of Australia, 2014.

Objectives: To identify medicines contributing to and describe predictors of anticholinergic burden among community-dwelling older Australian women.

Design, setting and participants: Retrospective longitudinal analysis of data from the Australian Longitudinal Study on Women's Health linked to Pharmaceutical Benefits Scheme medicines data from 1 January 2008 to 30 December 2010; for 3694 women born in 1921-1926.

Main outcome measures: Anticholinergic burden calculated from Anticholinergic Drug Scale (ADS) scores derived from ADS levels (0 to 3) for all medicines used by each woman, summed over each 6-month period (semester), medicines commonly used by women with high semester ADS scores (defined as 75th percentile of scores).

Results: 1126 women (59.9%) used at least one medicine with anticholinergic properties. The median ADS score was 4 or 5 across all semesters. Most anticholinergic medicines used by women who had a high anticholinergic burden (ADS score, ≥ 9) had a low anticholinergic potency (ADS level 1). Increasing age, cardiovascular disease, and number of other medicines used were predictive of a higher anticholinergic burden.

Conclusions: A high anticholinergic medicines burden in this group was driven by the use of multiple medicines with lower anticholinergic potency rather than the use of medicines with higher potency. This is a novel and important finding for clinical practice as doctors would readily identify the risk of a high anticholinergic burden for patients using high potency

medicines, but may be less likely to identify this risk for users of multiple medicines with low anticholinergic potency.

Pavey T, Burton N & Brown W.
Prospective relationships between physical activity and optimism in young and mid-aged women.

Journal of Physical Activity and Health, 2014;
doi:10.1123/jpah.2014-0070.

Background: There is growing evidence that regular physical activity (PA) reduces the risk of poor mental health. Less research has focused on the relationship between PA and positive wellbeing. The study aims were to assess the prospective associations between PA and optimism, in both young and mid-aged women.

Methods: 9688 young women (born 1973-78) completed self-report surveys in 2000 (age 22-27), 2003, 2006, and 2009; and 11,226 mid-aged women (born 1946-51) completed surveys in 2001 (age 50 to 55) 2004, 2007 and 2010, as part of the Australian Longitudinal Study on Women's Health. Generalised estimating equation models (with 3-year time lag) were used to examine the relationship between PA and optimism in both cohorts. Results: In both cohorts, women reporting higher levels of PA had greater odds of reporting higher optimism over the 9-year period, (young, OR=5.04, 95%CI: 3.85-6.59; mid-age, OR=5.77, 95%CI: 4.76-7.00) than women who reported no PA. Odds were attenuated in adjusted models, with depression accounting for a large amount of this attenuation (young, OR=2.00, 95%CI: 1.57-2.55; mid-age, OR=1.64 95%CI: 1.38-1.94).

Conclusions: Physical activity can promote optimism in young and mid-aged women over time, even after accounting for the negative effects of other psychosocial indicators such as depression.

CONFERENCE PRESENTATIONS

In 2014, ALSWH data was presented at over 30 conferences

Byles J & Chojenta C.

Older women's hospital service use: A longitudinal data linkage project.

2014 AAG & ACS Regional Conference. *Sharing Care for Older Australians: Working Together*, Port Macquarie, NSW, 5-7 March 2014.

Byles J, Francis L, Hubbard I, Tavener M & Chojenta C.
Long-term survival of older Australian women with a history of stroke.

Smart Strokes 2014 Conference, Sydney, NSW, 28-29 August 2014.

Byles J.

Late life changes in physical and mental health: a study of 12432 women over 17 years.

British Society of Gerontology Annual Conference, Southampton, United Kingdom, 1-3 September, 2014.

Byles J, Francis L, Hubbard I, Tavener M & Chojenta C.
Long-term outcomes for older Australian women with a history of stroke.

43rd Annual Conference of the British Society of Gerontology, Southampton, United Kingdom, 1-3 September 2014.

Byles J, Leigh L, Chojenta C & Pachana N.

Late life changes in mental health: A longitudinal study of 9973 women.

Society for Longitudinal and Life Course Studies, Annual Conference, Lausanne, Switzerland, 9-11 October 2014.

Byles J.

Mental Health Across the Lifecourse.

Hunter New England Health Psychology Conference, 'Psychology Across the Lifespan'. University of Newcastle, Newcastle, NSW, 14 November 2014

Byles J.

From Go to WHOA! Generations and Change in ALSWH

47th AAG National Conference: 50 Not Out - Aiming For A Century, Adelaide, SA, 24-28 November, 2014.

Chan L, Mishra G, Thompson C, Miller M & Cobiac L.
Fish consumption in young Australian women – results from the Australian Longitudinal Study on Women's Health.

Dietitians Association of Australia 31st National Conference, Brisbane, Qld, 15-17 May 2014.

Clark BK, Peeters GMEE, Gomersall SR, Pavey TG & Brown WJ.

Nine year changes in sitting time in young and mid-aged Australian women: Australian Longitudinal Study for Women's Health.

5th International Congress on Physical Activity and Public Health, Rio de Janeiro, Brazil, 9-11 April 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How is the experience of pain measured in older, community dwelling women with osteoarthritis – A systematic review of the literature (poster presentation).

7th World Congress, World Institute of Pain, Maastricht, Netherlands, 7-10 May 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How catastrophic are different types of pain in women with arthritis (poster presentation).

7th World Congress, World Institute of Pain, Maastricht, Netherlands, 7-10 May 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How does neuropathic pain affect quality of life in women with arthritis.

7th World Congress, World Institute of Pain, Maastricht, Netherlands, 7-10 May 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
Pain and the older woman: results from a cross-sectional survey.

2014 AAG & ACS Regional Conference. *Sharing Care for Older Australians: Working Together*, Port Macquarie, NSW, 5-7 March 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How catastrophic are different types of pain in women with arthritis.

142nd APHA Annual Meeting and Exposition, New Orleans, USA, 15-19 November 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How does neuropathic pain affect quality of life in women with arthritis.

142nd APHA Annual Meeting and Exposition, New Orleans, USA, 15-19 November 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How does neuropathic pain affect quality of life in women with arthritis.

COCA Biennial Conference. Sydney, NSW, 10-12 October, 2014.

de Luca K, Parkinson L, Byles J, Blyth F & Pollard H.
How does neuropathic pain affect quality of life in women with arthritis.

CAANSW Inaugural Research Symposium. Sydney, NSW, 13-14 September 2014.

Dillon G.

A profile of intimate partner violence in the young cohort of the Australian Longitudinal Study on Women's Health: Demographic associations across 16 years.

CRN Mental Health and Well-being Conference, 2014. *Minds Matter - promoting rural, regional and remote mental health and well-being*. Coffs Harbour, NSW, 3-5 April 2014.

Dolja-Gore X.

Treatment effects on mental health outcomes for Australian women uptaking the 'Better Access Scheme' mental health counselling services: A data linkage study.

International Data Linkage Conference, Vancouver, Canada, 28-30 April 2014.

Dolja-Gore X.

How effective are Australian mental health counselling for women with poor mental health?

International Society of Pharmacoeconomics and Outcomes Research, Montreal, Canada, 31 May - 4 June 2014.

Eftekhari P.

Impact of asthma on mortality in older women: an Australian cohort study of 10413 women.

American Thoracic Society Conference, San Diego, USA, 16-21 May 2014.

Heesch K, van Gellecum Y, Burton N, van Uffelen J, & Brown W.

Relationships between physical activity, walking and health-related quality of life in women with depressive symptoms.

Be Active 2014, Canberra, ACT, 15-18 October 2014.

Jackson M.

The bidirectional association between sleep and mental health.

Australasian Sleep Association Victoria Branch Meeting, Melbourne, Vic, May 2014.

Joham A, Ranasinha S, Zoungas S & Teede H.

Longitudinal risk of type 2 diabetes in reproductive-aged women with Polycystic Ovary Syndrome.

The Endocrine Society Annual Meeting 2014, Chicago, USA, 21-24 June 2014.

Ju H.

PMS & dysmenorrhea: Symptom trajectories over 13 years.

47th Society of Epidemiological Research Meeting, Seattle, USA, 24-27 June 2014.

Ju H.

Prevalence and risk factors of dysmenorrhea: Concurrence of results from a comprehensive review and longitudinal data.

47th Society of Epidemiological Research Meeting, Seattle, USA, 24-27 June 2014.

Kennaugh R.

As time goes by: A longitudinal thematic analysis of the evolution of widowed women's life experiences.

13th National Conference of Emerging Researchers in Ageing, Adelaide, SA, 24-25 November 2014.

Laaksonen M.

Population-level relevance of risk factors for cancer in the presence of competing risk of death.

World Cancer Congress, Melbourne, Vic, 7-10 July 2014.

Laaksonen M.

Population-level relevance of risk factors for cancer in the presence of competing risk of death.

Australian Statistical Conference 2014, Sydney, NSW, 3-6 December 2014.

Lai J.

Diet quality and depressive symptoms in mid-age Australian women.

7th Biennial Congress of The International Society of Affective Disorders, Berlin, Germany, 28-30 April, 2014.

Leung J, Martin J, Dobson A, McKenzie S & McLaughlin D.

Obesity and advanced breast cancer in rural and urban Australia - a data linkage study.

Australasian Epidemiological Association Annual Scientific Meeting, Auckland, New Zealand, 8-10 October 2014.

Leung J, Martin J, McKenzie S & McLaughlin D.
Obesity and advanced breast cancer in rural and urban Australia - a data linkage study.

The University of Queensland, School of Population Health 2014 Research Higher Degree Conference, Brisbane, Qld, 5 November 2014.

McLaughlin D.

Consenters and refusers in the new young cohort of the Australian Longitudinal Study on Women's Health.

International Data Linkage Conference, Vancouver, Canada, 28-30 April 2014.

McLaughlin, D, Hockey R, Byles J.

Mental health in older women before, during and after bereavement.

Gerontological Society of America Annual Scientific Meeting, Washington DC, USA, 5-9 November 2014.

Murthy V, Sibbritt D & Adams J.

Women's attitudes towards Complementary and Alternative Medicine (CAM) in their choice of self-prescribed herbal medicines for back pain.

2nd International Congress on Naturopathic Medicine, Paris, France, 4-6 July 2014.

Parkinson L, Brilleman S & Byles J.

Opioid use and health in older Australian women.

2014 AAG & ACS Regional Conference. Sharing Care for Older Australians: Working Together, Port Macquarie, NSW, 5-7 March 2014.

Parkinson L, Byles J & Francis L.

Arthritis and comorbidities: Prevalence and outcomes.

New Zealand Association of Gerontology Conference, Dunedin, New Zealand, 12-14 September 2014.

Parkinson L, Magin P, Byles J, Caughey G, McCowan C, Pond D & Thomson A.

Anticholinergic medicines burden in older women.

National Medicines Symposium 2014, Brisbane, QLD, 21-23 May 2014.

Parkinson L, Moorin R, Peeters G, Caughey G, Byles J, Cunich M, Magin P, Pond D & Blyth F.

Health services utilization in older women: The impact of incident osteoarthritis.

International Data Linkage Conference, Vancouver, Canada, 28-30 April 2014.

Parkinson L.

Arthritis and older Australian women: Findings from Australian Longitudinal Study on Women's Health.

LiWELL Research Group Seminar Series, Simon Fraser University, Vancouver, Canada, 25 April 2014.

Pavey TG, Peeters G, Gomersall S & Brown WJ.

The association between accumulated physical activity and BMI in young and mid-aged women.

Conference of Science and Medicine in Sport (Be Active), Canberra, ACT, 15-18 October 2014.

Peeters G.

Long-term consequences of falls on wellbeing in older women.

Australia New Zealand Falls Prevention Conference, Sydney, NSW, 16-18 November 2014.

Peeters G.

Long-term consequences of falls on wellbeing in older women.

Annual meeting of the Gerontological Society of America, Washington DC, USA, 5-9 November 2014.

Rich J.

Australian women ageing in drought - a thematic analysis.

2014 AAG & ACS Regional Conference. Sharing Care for Older Australians: Working Together, Port Macquarie, NSW, 5-7 March 2014.

Schoenaker D, Soedamah-Muthu S, Callaway L & Mishra D.

Pre-pregnancy dietary patterns and risk of developing hypertensive disorders of pregnancy: results from the Australian Longitudinal Study on Women's Health.

The University of Queensland, School of Population Health 2014 Research Higher Degree Conference, Brisbane, Qld, 5 November 2014.

Sibbritt D.

Women who consult with naturopaths are optimists!

The 2nd International Congress on Naturopathic Medicine, Paris, France, 4-6 July 2014.

Steel A, Adams J, Broom A, Sibbritt D, Frawley J, Gallois C.

Marginalization and companionable silence: CAM practitioners' perspectives of their interprofessional relationships with maternity care providers

The International Research Congress on Integrative Medicine and Health (IRCIMH), Florida, USA, 13-16 May 2014.

Steel A, Sibbritt D, Adams J, Frawley J, Broom A & Gallois C.

The association between women's choice of birth setting and their use of CAM during labor and birth.

The International Research Congress on Integrative Medicine and Health (IRCIMH), Florida, USA, 13-16 May 2014.

Tavener M.

Applying the salutogenic model for better health outcomes in older Australian women.

47th Australian Association of Gerontology National Conference "50 not out. Aiming for a century". Adelaide, SA, 26-28 November 2014.

SEMINARS & WORKSHOPS

Byles J.

Health, Hospitals and Care in later life, new research findings. Spinning the Web: Integrating services to provide person-centred care.

Presented by the Australian Association of Gerontology (Hunter Chapter). In association with University of Newcastle Priority Research Centre on Gender Health and Ageing, Hunter Medical Research Institute, Hunter New England Health, Little Company of Mary Health Care, Hunter Medicare Local. Hunter Medical Research Institute Building, John Hunter Hospital, Newcastle, NSW, 26 September 2014.

Hołowko N.

Educational mobility and body weight trajectory in a longitudinal study of young Australian women.

SIMSAM workshop, Stockholm, Sweden, 9 June 2014.

Hołowko N.

Social patterning of body weight trajectory in young women.

DaSwe Doctoral Workshop, Copenhagen, Denmark 5-7 May 2014.

Schoenaker D

The role of diet and lifestyle in the development of gestational hypertension and gestational diabetes.

ALSWH University of Queensland Seminars, Brisbane, Qld, 19 June 2014.

Garinder P, Peeters G, McLaughlin D & Waller M.

Ageing in Australia: The 1921-26 birth cohort of the Australian Longitudinal Study on Women's Health.

School of Population Health Seminar Series, University of Queensland, Herston, Qld, 2 December 2014.

ENQUIRIES

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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, 4, 5 and 6 of the 1973-78, 1946-51 and 1921-26 cohorts. Data from the 6MF has also been archived for 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.



in conjunction with

