

*ALCOHOL USE IN PREGNANCY:
MIXED METHODS APPLIED TO THE
AUSTRALIAN LONGITUDINAL STUDY
ON WOMEN'S HEALTH*

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This dissertation is submitted for the degree of

Doctor of Philosophy (Gender and Health)

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DECLARATIONS

Originality

I hereby certify that to the best of my knowledge and belief this thesis is my own work and contains no material previously published or written by another person except where due references and acknowledgements are made. It contains no material which has been previously submitted by me for the award of any other degree or diploma in any university or other tertiary institution.

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I hereby certify that the work embodied in this thesis contains published papers of which I am a joint author. I have included as part of this thesis a written statement, endorsed by my supervisors, attesting to my contribution to the joint publications.

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2. Anderson A, Hure A, Forder P, Powers J, Kay-Lambkin F, Loxton D: Predictors of antenatal alcohol use among Australian women: a prospective cohort study. *BJOG: An International Journal of Obstetrics and Gynaecology* 2013, 120(11):1366- 1374
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4. 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

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THESIS PUBLICATIONS

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OTHER THESIS-RELATED OUTCOMES

Journal articles

Loxton D, Chojenta C, Anderson A, Powers J, Shakeshaft A, Burns L: Acquisition and utilization of information about alcohol use in pregnancy among Australian pregnant women and service providers. *Journal of Midwifery and Women's Health* 2013, 58:523–530.

Hure A, Gresham E, Lai J, Anderson A, Martin J, Fealy S, Blumfield M: **Nutrition in pregnancy: The balancing act.** *International Journal of Birth and Parent Education* 2014, 1(4):7-12.

Powers JR, Anderson AE, Byles JE, Mishra G, Loxton DJ: **Do women grow out of risky drinking? A prospective study of three cohorts of Australian women.** *Drug and Alcohol Review* 2015, 34(3):278-288.

Government report

Dobson A, Byles J, Brown W, Mishra G, Loxton D, Hockey R, Powers J, Chojenta C, Hure A, Leigh L *et al*: Adherence to health guidelines: Findings from the Australian Longitudinal Study on Women's Health. Report prepared for the Australian Government Department of Health and Ageing. Newcastle and Brisbane: Australian Longitudinal Study on Women's Health; June 2012.

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Conferences

Anderson AE, Hure AJ, Forder P, Powers JR, Kay-Lambkin FJ, Loxton DJ. **Predictors of Antenatal Alcohol Consumption in Australia.** (Oral presentation). Australasian Fetal Alcohol Spectrum Disorders Conference, Brisbane, Queensland, Australia, 19–20 November 2013.

Harris M, Anderson A, Rich J, Loxton D. **Drinking alcohol during pregnancy: How do women experience information delivery?** (Poster). First International Conference on the Prevention of Fetal Alcohol Spectrum Disorder, Alberta, Canada, 23 - 25 September 2013.

Anderson A, Hure AJ, Forder P, Powers JR, Kay-Lambkin FJ, Loxton DJ **Predicting alcohol use during pregnancy among Australian women: A population based prospective cohort study** (Poster). First International Conference on the Prevention of Fetal Alcohol Spectrum Disorder, Alberta, Canada, 23 - 25 September 2013.

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Anderson A, Powers J, Hure A, Kay-Lambkin F, Loxton D. **Compliance with Alcohol Guidelines for Pregnant Women: Using Data from the Australian Longitudinal Study on Women's Health.** (Poster). Women's Health 2012: The 20th Annual Congress, Washington, DC, United States of America, 16-18 March 2012.

Media coverage

Related to Chapter 5:

- BJOG Press Release 17 July 2013 for publication included in Chapter 5
- HMRI Press Release 19 November 2013 for publication included in Chapter 5 and presentation at the Australasian Fetal Alcohol Spectrum Disorders Conference, Brisbane, QLD
- News coverage: News.com.au, The Telegraph Lifestyle, Health News (healthcanal.com), Newcastle Herald
- Radio coverage: 2NUR (103.7)

Related to Chapter 6:

- HMRI Press Release 30 Jan 2014
- Press coverage: Sydney Morning Herald, The Age, WA Today, 6 Minutes, Essential Baby, Naomi Valley Independent, Roxby Downs Sun, Brisbane Times, Forensic & Science Services

- Radio/TV coverage: Channel 7 News Melbourne, Sunrise, 3AW Melbourne, BBC UK

Related to broadly to alcohol use in pregnancy:

- HMRI Press Release 03 Jul 2014 for the HMRI Open Day
- Radio/TV coverage: ABC, KOFM, NBN News, International News

Policy and impact

The research on risky alcohol consumption in pregnancy presented in Chapter 6 was used by the Honourable Sonia Hornery, MP for Wallsend, NSW to present a Notice of Motion to the Parliament of New South Wales, 25 March 2013, which urged the Minister of Health to fund prenatal services in relation to alcohol consumption during pregnancy.(Appendix D)

Loxton D. *Policy Makers' Seminar*, Canberra, ACT, Australia, 14 February 2013. My work was presented by Prof Deborah Loxton to approximately 150 government representatives from the Australian Government Department of Health and Ageing (DoHA). The work presented was focused on the 2012 ALSWH report on adherence to health guidelines (see Government Report listed above), as well as drawing from my 2012 BMC Public Health publication (Chapter 4). The findings from this collaborative work were presented to inform policy makers about the alcohol consumption and alcohol guideline adherence of pregnant Australian women.

Dedication

To my family, both near and far, you are the foundation that keeps me grounded and supports me as I continue to grow. I dedicate this thesis to all of you. I hope I have made you proud.

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LIST OF ABBREVIATIONS

ALSWH:	Australian Longitudinal Study on Women's Health
ANOVA:	Analysis of Variance
AOR:	Adjusted Odds Ratio
AQUA:	Asking QUestions about Alcohol in pregnancy
AUDIT:	Alcohol Use Disorders Identification Test
AUDIT-C:	Alcohol Use Disorders Identification Test - Consumption
CES-D:	Center for Epidemiologic Studies Depression Scale
CI:	Confidence Interval
FARE:	Foundation of Research and Education
GP:	General Practitioner
HMRI:	Hunter Medical Research Institute
M:	Mean
MeSH:	Medical Subject Heading
NDSHS:	National Drug Strategy Household Survey
NHMRC:	National Health and Medical Research Council
FAS:	Fetal Alcohol Syndrome
FASD:	Fetal Alcohol Spectrum Disorder (previously Fetal Alcohol Spectrum Disorders)
IGCD:	Intergovernmental Committee on Drugs
IQ:	Intelligence Quotient
OR:	Odds Ratio
PHQ-9:	Patient Health Questionnaire
SCOPE:	Screening for Pregnancy Endpoints
SD:	Standard Deviation
STROBE:	Strengthening the Reporting of Observational Studies in Epidemiology
UK:	United Kingdom

US(A): United States (of America)

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ABSTRACT

Population health guidelines aim to reduce the burden of disease by providing evidence-based recommendations that can inform health behaviours. Such guidelines are used internationally, as well as in Australia, to assist in preventing the burden associated with alcohol use during pregnancy. Consuming alcohol during pregnancy at high levels may lead to severe outcomes such as Fetal Alcohol Spectrum Disorder, stillbirth, miscarriage and growth restriction. The impact of low level alcohol use during pregnancy is unclear and complex, leading to an inability to define a specific threshold at which harm occurs. The lack of clarity has led to inconsistent alcohol guidelines for pregnant women, particularly in Australia. The Australian alcohol guidelines in 1992 initially recommended abstinence, before revising the recommendation in 2001 to condone low intake, and then reverting back to abstinence in 2009. At the time of commencing this thesis, no study had assessed the population-based prevalence and predictors of alcohol use during pregnancy in respect to the change of guidelines in 2009. This thesis used a mixed methods approach applied to the Australian Longitudinal Study on Women's Health, a prospective cohort, to investigate predictors of alcohol use during pregnancy, within the context of the changing Australian alcohol guidelines. The two specific thesis aims were to identify: (i) the prevalence of alcohol use during pregnancy since the introduction of the 2009 alcohol guidelines; and (ii) the factors contributing to alcohol use among pregnant women within Australia. The results suggest that more than 70% of women consume alcohol during pregnancy, even with the message of abstinence; although such a message did correspond with a lower prevalence compared to the prevalence under the low intake guidelines. The most consistent indicator of alcohol use during pregnancy was pre-pregnancy alcohol patterns, particularly weekly and binge drinking. These behaviours were often continued into pregnancy, putting both the woman and fetus at an increased risk of potential adverse outcomes. Qualitative interviews with women who were pregnant after 2009 suggest that the message of "not drinking is the safest option" has not filtered down in a clear and consistent manner. Such communication was desired by the women, particularly via healthcare professionals, to enable them to make informed choices about alcohol use during pregnancy. These findings taken together suggest that the change of population alcohol guidelines to an abstinence message for pregnant women requires systematic dissemination via policy and practice to ensure that women are provided with information and support to reduce and abstain from alcohol use during pregnancy.

