

Birth outcomes in uncomplicated first births

Mary-Ann Davey

I was informed in April that my thesis was passed and I will be awarded a Doctor of Public Health degree. I was fortunate to have Professor Judith Lumley as my primary supervisor, and Dr James King as associate supervisor.

I chose a Doctor of Public Health (DPH) program over a Doctor of Philosophy to incorporate coursework related to research methodology and biostatistics. The DPH is a research degree in which the thesis contributes more than two-thirds of the total assessment.

My major interests are in pregnancy and birth, breastfeeding, and maternal and child health. After considerable deliberation, I chose as the topic of my thesis: "Birth outcomes and maternal and perinatal morbidity associated with induction and augmentation of labour in uncomplicated first births." I used data that are routinely collected on all births in Victoria by the midwife attending the birth, and submitted to the Victorian Perinatal Data Collection Unit. From the births in 2000-2005, I selected those first births that appeared to have no clinical indication for induction of labour. They were singleton pregnancies with a vertex presentation, occurring between 37 and 40 weeks (259 and 286 days) gestation. The mother had no complications of pregnancy, or pre-existing diabetes, hypertension, cardiac disease or mental illness. The baby's birthweight was between the 10th and 90th percentile for gestation and sex. Women aged 20 to 34 years were analysed separately from those aged 35 to 44 years for many of the analyses. Women aged younger than 20 years, or 45 years or older were excluded.

The type of labour was categorised as entirely spontaneous, spontaneous onset and later augmented, induced or no labour (that is, pre-labour caesarean section). The type of labour was further disaggregated according to the methods used to induce or augment for some analyses. Stratification, cross-tabulations, and logistic and multinomial regression (both bivariate and multivariate) were used to explore the outcomes of interest. Other variables included in the models were: epidural analgesia in labour, maternal age, private or public admission status, birthweight of the baby and gestation.

After adjustment for these variables, induced labours were more likely than spontaneous labours to end in instrumental vaginal birth and caesarean section; and postpartum haemorrhage. Augmented labours were more likely than entirely spontaneous labours to end in instrumental vaginal birth and caesarean section. Women experiencing either induced or augmented labour were less likely than those with spontaneous labour to avoid perineal damage altogether, but no more likely to experience severe perineal trauma. Babies were more likely to be admitted to nursery care following both induction and augmentation, and to require active resuscitation at birth. They were no more likely to have low Apgar scores, or delayed onset of regular respirations.

Oxytocin infusions were associated with an increased rate of shoulder dystocia, postpartum haemorrhage and neonatal jaundice requiring phototherapy.

There was one maternal death and 30 perinatal deaths in this population of nearly 50,000 in the six years. They did not appear to be related to type of labour, but this study was not designed, nor adequately powered, to address mortality.

The extent to which these relationships might be causal is unclear, but their consistency and plausibility suggest that caution should be exercised in decisions regarding induction of labour in the absence of indications. Using these data, it is not possible to ascertain whether augmentation was indicated or elective, so the negative implications of the significant relationships between augmentation of labour and operative birth as well as morbidity are less persuasive.

Mary-Ann is a Team Investigator on the COMPASS capacity building program, and a Chief Investigator on a randomised controlled trial of caseload midwifery (known as COSMOS) being conducted at Royal Women's Hospital.



Judith Lumley,
Mary-Ann Davey &
Dr James King

First COMPASS Short Course held in April

Rhonda Small

Forty-seven participants from around Australia took part in the first COMPASS short course on complex interventions in public health, held in Melbourne from 28-30 April 2008. As readers of MCHR News will know COMPASS is our NHMRC Capacity Building Grant in Population Health Research held in partnership with the Primary Care Research Unit, Department of General Practice at University of Melbourne and the Healthy Mothers Healthy Families Research Group at the Murdoch Childrens Research Institute.

The course provided a forum for researchers and practitioners to develop an appreciation of the challenges in designing, implementing and evaluating complex interventions in public health. The course comprised a mixture of lectures, panel discussions and participatory workshop sessions covering issues in planning, undertaking and evaluating interventions

framed around three complex public health issues: depression, smoking and obesity. It also provided an opportunity for participants themselves to present and discuss their own work involving complex interventions.

Faculty for the course included COMPASS lead and team investigators and four Australian researchers: Professors Nick Zwar and Tony Worsley; and Associate Professors Robin Bell and Melissa Wake; each with expertise in one of the three public health issues that formed a focus for the course. We were also very fortunate to have two international experts lecturing in the course: Christine MacArthur, Professor of Maternal and Child Epidemiology at the University of Birmingham in the UK and a visiting lead investigator with COMPASS; and Carl May, Professor of Medical Sociology at the University of Newcastle in the UK. Christine described her work in two complex interventions, one to reduce smoking in pregnancy, and the other to reduce maternal depression and improve physical health in recent mothers. Carl discussed his development of an explanatory model for the integration and implementation of interventions in health care systems.

We were very pleased with the level of interest in the course. We also enjoyed the many lively discussions over the three days

about the challenges of complex interventions, and about useful approaches to improving the quality of their design, implementation and evaluation.

Presentations from the course can be found on the COMPASS website: <http://www.latrobe.edu.au/mchr/COMPASS/shortcourse.html>

There are plans to offer the course again in 2010.



Tackling controversy: Is termination of pregnancy linked to depression?

Angela Taft and Lyn Watson

We are both Associate Investigators with the Australian Longitudinal Study of Women's Health (Women's Health Australia). We have built up a body of work around intimate partner violence and experiences of pregnancy and birth outcomes, including termination of pregnancy, among the Younger cohort of Women's Health Australia. The younger cohort consists of 14,776 women aged between 22 and 27 when first surveyed in 1996 and surveyed every three to five years

since then. Previous analyses have demonstrated associations between termination and socioeconomic disadvantage among young Australian women.^{1,2} They have also demonstrated associations between experiences of violence, disadvantage and likelihood of more frequent pregnancies and poorer pregnancy outcomes including more frequent terminations of pregnancy.

Our most recent study examined the suggestion that the experience of pregnancy termination is likely to lead to subsequent depression.³ Linking the first two waves (1996 and 2000) of longitudinal data, and controlling for depression prior to 1996, we examined the associations between depression, termination, socio-economic disadvantage and young women's experiences of violence.

The study found that the strongest and most significant links were between women's experiences of violence and subsequent depression. In a model controlling for socio-economic disadvantage and experiences of violence, there were no significant associations in either 1996 or 2000 between termination

of pregnancy and subsequent depression. Experience of violence had the strongest association with depression, a contributing factor often not investigated.

This is a controversial topic and the paper has proved to be of considerable interest. Since the study was published in February the article has been accessed 1257 times.

1. Taft AJ, Watson LF. Termination of pregnancy: associations with partner violence and other factors in a national cohort of young Australian women. *Aust N Z J Public Health*, 2007; 31(2):135-42.
2. Taft AJ, Watson LF, Lee C. Violence against young Australian women and associated reproductive events: a cross sectional analysis. *Aust N Z J Public Health*, 2004; 28(4):324-29.
3. Taft AJ, Watson LF. Depression and termination of pregnancy (induced abortion) in a national cohort of young Australian women: the confounding effect of women's experience of violence. *BMC Public Health*, 2008; 8:75.

The **WAVE** project - evaluating maternity care at Barwon Health

Della Forster

In 2008 Barwon Health implemented major changes to its provision of maternity care with new approaches being taken in postnatal care and in models of maternity care.

Postnatal care changes (which commenced in January 2008) comprise a more flexible, individualised approach to care, with a focus on normalising this time. Women are encouraged to independently care for themselves and their baby. A communal space is provided to encourage women to talk to each other and group education is being introduced. Early

morning disturbance is minimised to promote rest. Additionally, care provision has changed, with maternal and neonatal clinical pathways no longer being used to guide care (for women who have had a vaginal birth) and 'routine' observations no longer undertaken. Instead, Barwon have implemented a focused time where midwives sit with women and provide individualised education and support.

A caseload midwifery model of care - known as the 'Midwifery Group Practice' (MGP) commenced in July 2008. The MGP is a one-to-one midwifery model of care in which women will receive antenatal, intrapartum and postpartum care from a primary midwife with one or two antenatal visits to be conducted by a 'back-up' midwife.

We are working with Barwon Health to evaluate these changes. Two of the team are higher degree candidates and will play a major role: Jane Morrow who will evaluate the changes; and Michelle Newton who will explore midwives views of the MGP. Arthur Hsueh is involved in the economic evaluation of the changes.

The evaluation is multi-faceted, evaluating both the postnatal changes and the

introduction of the MGP. It includes cross-sectional surveys of women before and after the changes; a survey of midwives at two time points; and key informant interviews with women, midwives and other key stakeholders. Two focus groups have been undertaken with midwives involved in postnatal care provision. As well as exploring the changes to maternity care provision from the perspectives of women, care providers and other key stakeholders, we will also explore the health outcomes of women and babies.

The study has been funded by the Victorian Department of Human Services.

The WAVE team at MCHR includes Della Forster, Helen McLachlan, Mary-Ann Davey, Jane Morrow, Michelle Newton and Arthur Hsueh. We are pleased to have the opportunity of working with Barwon Health, and in particular to be working closely with Therese Cotter, Jenny Kelly, Ann Evans and Kim Lyton.



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

Melissa Hobbs

The emergency contraceptive pill (ECP) levonorgestrel was rescheduled to S3 status and became available over-the-counter (OTC) from pharmacies in Australia in January 2004. Given that the ECP is more effective the sooner it is taken after unprotected sexual intercourse, and most effective when taken within 72 hours,¹ access is a crucial issue. By rescheduling levonorgestrel, it was hoped that women would have improved access to ECP and so could obtain it with greater ease within

the narrow time frame recommended, reducing the need for termination of pregnancy. ECP has the potential to assist in reducing unintended pregnancy and abortion rates, although as yet this potential has been unrealised.²

This project is a sub-study of the ARC-Linkage funded project 'A study of the provision of the emergency contraceptive pill (ECP) over-the-counter (OTC) in Australia'. Using both qualitative and quantitative methods the study aims to assess whether the rescheduling of ECP in Australia has improved its accessibility and use by women at risk of unwanted pregnancy.

Six focus groups were conducted in 2007 with 29 women (16-52 years) recruited through Family Planning Organisations in four Australian states. Most women were positive about ECP being available OTC, however some expressed concerns about younger women abusing it. Women's experiences obtaining ECP from the pharmacy were both positive and negative. A lack of privacy in the pharmacy was frequently expressed by women and feelings of awkwardness and embarrassment commonly experienced. Most women said they would use ECP again if required and would recommend it to a friend. Findings from the focus groups have been submitted for publication and were presented at the Population Health Congress in Brisbane, July 2008.

The major part of the study is a Computer Assisted Telephone Interview (CATI) with a random sample of 600 Australian women to assess their knowledge of, attitudes towards and experiences of using ECP. Conducted by the Hunter Valley Research Foundation, the CATI was piloted in NSW and Victoria in January and March 2008, and the interviews commenced in May 2008.

Melissa Hobbs is an ARC PhD candidate supervised by Angela Taft, Judith Lumley and Lisa Amir.

1. Piaggio G, von Hertzen H, Grimes DA et al. Timing of emergency contraception with levonorgestrel or the Yuzpe regimen. Task force on Postovulatory. *Methods of Fertility Regulation. Lancet*, 1999; 353(9154):721.
2. Polis CB, Schaffer K, Blanchard K et al. Advance provision of emergency contraception for pregnancy prevention. *Cochrane Database Syst Rev*, 2007; (2):CD005497.

Melissa Hobbs



Visiting Fellow

Dr Hiranya Jayawickrama is visiting MCHR as part of her MD (Community Medicine) overseas training from the Postgraduate Institute of Medicine, Colombo, Sri Lanka. She is a public health doctor with a special interest in maternal and child health.

At MCHR she is working with Lisa Amir on a number of projects, including data entry and descriptive analysis for the survey of general practitioners' knowledge and attitudes to prescribing medicines for breastfeeding women. Hiranya has visited a maternal and child health centre, the Victorian Office for Children and other relevant institutions in Melbourne, as well as attending several breastfeeding seminars.

While at the centre, Hiranya is Assistant Editor for the *International Breastfeeding Journal*. Currently, Hiranya is working with Lisa to publish a thematic series based on a symposium titled "Breastfeeding and feminism: Reproductive health, rights, and justice," held at the University of North Carolina, US in September 2007. The series of nine papers includes articles by Miriam Lobbok, Barbara Katz Rothman, Bernice Hausman and Jacqueline Wolf. Topics range from breastfeeding in public (or not!), parenting and the workplace, and the media and breastfeeding.

IBJ is an open access journal; the website is www.internationalbreastfeedingjournal.com

Dr Hiranya Jayawickrama



Postgraduate news

Lisa Amir is supervising Sarah Clemons, a Master of Public Health student at La Trobe University, who is conducting an online survey of Victorian members of the Australian Breastfeeding Association about their experiences of breastfeeding, expressing and using breast pumps, in collaboration with Priscilla Robinson, LTU, and Kate Mortensen, Australian Breastfeeding Association.

Michelle Newton (Lecturer in Midwifery at the Division of Nursing and Midwifery at La Trobe University) is undertaking her PhD which is an exploration of the experiences of the midwives involved in providing caseload midwifery as part of the COSMOS trial and at Barwon Health. She will also explore the views of the non-caseload midwives and the sociopolitical context of the introduction of caseload midwifery. She is supervised by Helen McLachlan, Della Forster and Judith Lumley.

Kinga Pemo is undertaking a Master of Midwifery Science in the Division of Nursing and Midwifery at La Trobe University. For her minor thesis she is working with Helen McLachlan, Lisa Amir and Della Forster (her supervisors) to explore what proportion of women are leaving hospital fully attaching and breastfeeding, and what factors contribute to this. The work is being undertaken at the Royal Women's Hospital, Mercy Hospital for Women and Frances Perry House, and is informing the development of a cohort study exploring this issue.

Awards

We warmly congratulate Lyn Watson for being made a Life Member of the Australasian Epidemiological Association (AEA). Conferred at the recent national Population Health Congress in Brisbane, Lyn received this award in recognition of "outstanding contribution to the AEA as a longstanding Council member, a leader in student activities and workshops, and more generally in the field of epidemiology and biostatistics research in Australia".



Lyn Watson with Jane Halliday, President of AEA

Congratulations to Tracey Savage who was awarded the "Midwifery New Investigator Award" at the 2008 Congress for the Perinatal Society of Australia and New Zealand.

Grants

Angela Taft, Rhonda Small and **Judith Lumley** in collaboration with **Kelsey Hegarty** and **Cathy Humphries**, both at the University of Melbourne, have been awarded a three year ARC Linkage Grant of \$258,492 for 'Improving maternal and child health care for women experiencing violence: collaborative development, implementation and effectiveness of a good practice model'.

Staff news

At the beginning of the year we welcomed **Arthur Hsueh**, a health economist who has started working one day a week as part of COMPASS, our Capacity Building Grant, and also **Karen Willis**, a sociologist on secondment with COMPASS until February 2009.

In the first half of 2008 we farewelled two MOSAIC project staff: **Doris Sant** and **Lisa Patamisi** and we wish them well in their new positions.

We are pleased to welcome **Olivia Ellis** who is providing part-time administrative support at the centre, as **Sandra Cowen** and **Kaj Löfgren** have now also moved on to other work.

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