

Midwifery Research Review™

Making Education Easy

Issue 18 – 2017

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Abbreviations used in this issue

AGA = Appropriate for Gestational Age
CS = caesarean section

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Welcome to the latest issue of Midwifery Research Review.

We bring you our selection of the best in current research from NZ and around the world. The following areas are included in this review: the effect of diet and physical activity on gestational weight gain and pregnancy outcomes, how reduced growth velocity in third trimester of pregnancy impacts on AGA babies, and the finding that NZ women consume suboptimal omega-3 fatty acids during pregnancy. We also present an evaluation of free-standing maternity units in NZ and birth outcomes for women who use them, the needs of fathers during labour and birth, the choice of birth place and transfer experiences for remote rural women, midwifery continuity via social media, the influence of fathers and significant others on exclusive breastfeeding, and the impact of singing lullabies during pregnancy and after birth.

We hope you find the selected papers of interest, and look forward to hearing your comments, feedback and suggestions.

Kind regards,

Nimisha Waller

nimishawaller@researchreview.co.nz

Effect of diet and physical activity based interventions in pregnancy on gestational weight gain and pregnancy outcomes

Authors: International Weight Management in Pregnancy (i-WIP) Collaborative Group

Summary: This meta-analysis investigated the effects of dieting and physical activity during pregnancy on gestational weight gain and maternal and offspring outcomes. Individual participant data were included from 36 randomised trials of diet and physical activity-based interventions in pregnancy (12,526 women). Meta-analysis of the data showed that diet and physical activity-based interventions during pregnancy decreased gestational weight gain and the likelihood of CS, but did not significantly reduce maternal and offspring composite outcomes.

Comment: This meta-analysis of individual participant data was led by the i-WIP Collaborative Group. They found diet and exercise during pregnancy was associated with a lowered chance of CS delivery. According to the research group 'half of all women of childbearing age worldwide are overweight or obese'. Though there is recognition of the benefits of dieting and physical activity during pregnancy, the specific subgroups that may benefit most from such intervention, as well as the implications on maternal and child outcomes, have not been fully identified. Dietary interventions that were used were an increase in vegetables and fruits and a decrease in sugar-sweetened beverage intake. Physical activity-based interventions included resistance training, stationary cycling, and aerobic-based group classes. The findings suggest that all groups may benefit from lifestyle interventions. In addition to CS risk reduction a decreased risk for gestational diabetes was associated with interventions that were mostly exercise-based. However, intervention was not significantly linked to composite maternal or child outcomes. Rates of adverse events were not significantly higher among women who participated in diet and physical activity interventions. Those who think that pregnant women shouldn't exercise because it may harm the baby should be reassured. Meta-analysis suggests babies are not affected by physical activity or dieting and additional benefits include a reduction in maternal weight gain, diabetes in pregnancy, and the risk of requiring a CS. The research group suggests that this should be part of routine advice in pregnancy by practitioners, including midwives. It is hoped pregnant women may adopt these lifestyle changes once informed of the benefits. It would be useful to know how much reduction in weight gain would be required to reduce the risk of CS and do all physical activity-based interventions in the study help equally to reduce the rate of CS? It's worth reading the full article.

Reference: *BMJ* 2017;358:j3991

[Abstract](#)



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New Zealand women have suboptimal intakes of long chain omega-3 polyunsaturated fatty acids during pregnancy

Authors: Eickstaedt M et al.

Summary: This study investigated dietary intakes and food sources of polyunsaturated fatty acids in pregnant women in NZ. 596 women in the third trimester of pregnancy completed an online food frequency questionnaire validated for omega-3 and omega-6 polyunsaturated fatty acids. Estimated median intakes of omega-3 fatty acids were: 1,300 mg/day alpha-linolenic acid (recommended intake 1,000 mg/day); 220 mg/day total long chain omega-3 polyunsaturated fatty acids (recommended intake 115 mg/day); and 110 mg/day docosahexaenoic acid (recommended intake 200 mg/day). Only 30.9% of women had more than 200 mg/day docosahexaenoic acid. Fish and seafood were the main contributors to docosahexaenoic acid intake, but only 21.7% of women had fish at least twice a week. 19.6% of women were taking omega-3 supplements.

Comment: This is the first ever NZ study on the intake of omega-3 polyunsaturated fatty acids in pregnancy. The study found that 30% of pregnant women are getting the international recommended daily amount (200mg) of omega-3 polyunsaturated fatty acids while 77% met the lower target of 115 mg/day recommended in NZ. Omega-3 fatty acids are critical during the time when the neural tube closes and throughout pregnancy as they accumulate in the fetal brain and retinal tissues. The amount of omega-3 fatty acids accumulated by the fetus occurs mainly in the third trimester of pregnancy, and is influenced by the maternal diet. Though fish and seafood are the richest sources of omega-3 polyunsaturated fatty acids, protein and iodine, women may not eat two serves of fish (150g per serve) per week due to concerns regarding food safety and the potential for mercury poisoning. According to the Ministry of Health's nutrition guidelines for pregnant women, fish and seafood can be eaten as long as they have been well cooked, served hot, and larger species are limited. There is little concern with canned tuna (skipjack or albacore tuna), canned salmon, mackerel or sardines, farmed salmon, tarakihi, blue cod, hoki, john dory, monkfish, warehou, whitebait and flat fish like flounder. The mercury levels in these fish are seen as low risk. Practitioners need to share this information with women/whanau and they can be advised to see a registered nutritionist or dietician. However, the cost of these consultations may be a barrier for some women. Does the Ministry of Health need to raise the lower target of 115 mg/day to 200 mg/day?

Reference: *NZ Med J* 2017;130(1462):37-45

[Abstract](#)

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Evaluating maternity units: a prospective cohort study of freestanding midwife-led primary maternity units in New Zealand – clinical outcomes

Authors: Grigg C et al.

Summary: This study compared maternal and neonatal birth outcomes associated with planning to give birth in a freestanding primary level midwife-led maternity unit (PMU) or a tertiary level obstetric-led maternity hospital (TMH) in Canterbury, NZ. 407 women who intended to give birth in a PMU and 285 women who intended to give birth at the TMH in 2010–2011 were included. All of the women planning a TMH birth were 'low risk', and 29 of the PMU cohort had identified risk factors. Women who planned a PMU birth were significantly more likely to have a spontaneous vaginal birth (77.9% vs 62.3%), and less likely to have an instrumental vaginal birth (10.3% vs 20.4%). Emergency and elective CS rates did not differ significantly between cohorts, nor did rates of 5 min Apgar score <7 or neonatal unit admission.

Comment: This is the first NZ study to follow women from their planned place of pregnancy through to birth of their baby, rather than following women from the commencement of their labour. The study was based in Christchurch and found that low-risk women who chose to give birth in PMUs had better outcomes than those who chose to birth in a secondary/tertiary facility. The results of the study support PMUs as physically safe places for well women to plan to give birth. These women had higher rates of natural birthing and lower interventions than those low-risk pregnant women who planned a secondary/tertiary hospital birth. This research supports other research on place of birth that shows that women with low-risk pregnancy should be encouraged to birth in a primary birthing facility. Even though some low-risk women who had planned to give birth at a primary unit had their babies in the hospital, overall women who had planned to birth in a primary unit had better outcomes than those that had planned to birth in a secondary/tertiary facility. According to the Ministry of Health's 2015 report, the majority of women (84%) still plan to birth in hospital. The authors suggest that a larger nationwide study using this design would be valuable to provide stronger evidence for these results. Practitioners need to reflect on the information they share regarding choices for place of birth and the evidence that supports it.

Reference: *BMJ Open* 2017;7:e016288

[Abstract](#)

Reduced growth velocity across the third trimester is associated with placental insufficiency in fetuses born at a normal birthweight

Authors: MacDonald T et al.

Summary: This prospective cohort study investigated whether reduced growth velocity in AGA fetuses is associated with placental insufficiency. 308 nulliparous women who subsequently gave birth to AGA infants underwent ultrasound at 28 and 36 weeks' gestation to determine estimated fetal weight (EFW) and abdominal circumference (AC). EFW and AC growth velocities were then correlated with 3 clinical indicators of placental insufficiency: fetal cerebroplacental ratio (CPR); neonatal acidosis after labour; and low neonatal body fat percentage (BF%). For each 1-centile reduction in EFW growth velocity between 28 and 36 weeks' gestation, there was a 2.4% increase in the odds of cerebral redistribution and neonatal acidosis, and a 3.3% increase in the odds of low BF%.

Comment: Most of us will be aware of stillbirth being a risk factor for Small for Gestational Age (SGA) babies. Worldwide, 80% of stillbirths occur at the end of pregnancy. The findings of this study suggest that AGA fetuses demonstrating a low growth velocity may also experience the effects and risks of placental insufficiency, including stillbirth. The data suggest strong correlation between growth velocity and low CPR, reflective of fetal cerebral blood flow redistribution (due to decreased oxygen availability) and increased placental resistance during pregnancy, development of acidosis under the hypoxic challenge of labour and reduced neonatal body fat stores. The CPR is more sensitive in predicting adverse outcomes. The data raise the possibility that serial ultrasound growth assessments may have a role in the clinical management of pregnancy. The authors suggest that the use of universal ultrasound for all pregnant women at 28 and 36 weeks' gestation needs debating due to significant cost implications and that improved clinical outcomes still need to be demonstrated. Women already having serial ultrasounds due to risk factors may require increased surveillance if the AGA fetuses demonstrate a significant decline in growth trajectory. Further study is required to clarify the value of enhanced fetal surveillance and timely birth for AGA fetuses with low third trimester growth velocity. The International Society for Ultrasound in Obstetrics and Gynaecology (ISUOG) definition of fetal growth restriction (FGR) now includes fetal AC/EFW crossing centiles as long as it occurs in an SGA fetus. For more information on this definition see the consensus report by [Gordijn et al.](#) The authors feel the threshold in the new definition of FGR may miss a number of AGA fetuses unless a conservative threshold is utilised. We need to read the full article and the revised definition of FGR to reflect and debate on the findings to see if present guidelines need revising.

Reference: *BMC Medicine* 2017;15:164

[Abstract](#)

Birth outcomes for women using free-standing birth centers in South Auckland, New Zealand

Authors: Bailey D

Summary: This study investigated maternal and perinatal outcomes for women with low-risk pregnancies labouring in free-standing birth centres in South Auckland compared with a hospital maternity unit. Observational data for 47,381 births in 2003–2010 were analysed. Labour in the birth centres was associated with significantly lower rates of instrumental delivery, CS and blood transfusion compared with labour in hospital. In addition, neonatal unit admission rates were lower for infants of nulliparous women labouring in birth centres. Intrapartum and neonatal mortality rates were low and did not differ significantly between birth centres and hospital.

Comment: This study was designed differently to the Christchurch study reported on the previous page. Both studies (as well as other national and international evidence) support the safety and efficacy of free-standing birth centres for low-risk women. The study reports the overall mortality rate of 0.5/1000 when the analysis was confined to the lowest risk pregnancies (normal birth-weight, age <35 years, gestation <41 weeks) and shows that with appropriate case selection it is likely that a large proportion of women who currently birth in obstetric units could safely birth in community units. Hospital care therefore was not associated with better perinatal outcomes. The study included women with advanced maternal age whose pregnancy was considered low risk. Should these women have been excluded? The author suggests that to expand the list of exclusion criteria for birthing centres would deny many women autonomy to choose their place of birth. Nulliparity and advanced age were not seen by health care providers as contraindications to use of birth centres in South Auckland in 2003–2010, though some women would have chosen to birth in the hospital. The transfer rates are comparable to other national and international studies. The author suggests caution to extrapolate the findings to other places where transfer time may be longer and resident staff may not be available in the facility for timely consultation and/or referral. There are 55 primary maternity units in NZ – do the data available help provide a fuller picture of outcomes in primary maternity units in NZ? If not, is it possible for other primary units to publish their data?

Reference: *Birth* 2017;44(3):246-51

[Abstract](#)

Needs of fathers during labour and childbirth

Authors: Eggermont K et al.

Summary: This cross-sectional study determined the needs of fathers during labour and childbirth. Data were collected using a questionnaire in two maternity wards in Belgium, where a medical-led model is used. Multivariate analyses of the responses showed that fathers with a higher education level and multiparous fathers needed less information about the birth process than less educated fathers or first-time fathers. A tour of the delivery room was less important for multiparous fathers than for primiparous fathers, and married fathers needed less information on how to support their partners physically and emotionally than cohabiting fathers.

Comment: There have been a number of studies on first time fathers and those becoming fathers again over the last decade. These have looked at fathers' engagement, feelings, involvement and other aspects during pregnancy and childbirth. This study of fathers being present at natural birth adds to that evidence. It suggests that for fathers in this study, information needs were important rather than just focusing on birth experience or their involvement. Some father's needs for information will be greater than others. It appears that information/discussion that occurs with fathers needs to be individualised. Midwives are the main providers of maternity care though there are other practitioners involved in maternity care or providing information about maternity care. We all need to ensure that the father's needs are fulfilled appropriately. The study provides an opportunity to reflect on a number of areas: 1) how do we fulfill the needs of those fathers who are unable to be present at the time of appointments or when formulating a birthplan? 2) Is there time in early labour to inform them of relevant information to fulfill their needs? 3) How do we know that their needs were fulfilled? 4) What about the fathers who are present at births that have required intervention? 5) In birthplans do we document just the mother's needs or do we document the mother's needs and those of significant others? 6) What is the midwifery responsibility in relation to such documentation? Fathers and significant others will continue to be part of a woman's childbirth experience. It is important that their experience is positive.

Reference: *Women Birth* 2017;30(4):e188-e197

[Abstract](#)

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Remote rural women's choice of birthplace and transfer experiences in rural Otago and Southland New Zealand

Authors: Patterson J et al.

Summary: This study examined the birth place decisions and the labour and birth experiences of women living in remote rural areas of the lower South Island of NZ. 13 women who lived in a remote rural area and had given birth in the previous 18 months were interviewed. All of the women had been well during their pregnancies and, at the onset of labour, had anticipated a spontaneous vaginal birth. 5 women planned to birth in a regional hospital and 8 chose their nearest rural primary maternity unit. All of the women were aware of the possibility of transfer and had made their decision about their birth place based on their perception of their personal safety and in consideration of their distance from specialist care.

Comment: This study highlights the challenges of sustaining services for women living in rural and remote low-density areas in the South Island of NZ. Irrespective of where women reside they need to have confidence in the place they choose to birth, in the maternity system as well as in the midwives involved in their care. Confidence is fragile and a lack of a cooperative and collaborative relationship between all involved in provision of maternity care affects confidence. This has the potential to impact on the decision the woman makes in the future regarding the place of birth. As articulated by the women, the transfer to a base hospital can be stressful, uncomfortable and impacts on their partner and significant others. The findings provide an opportunity to reflect on 1) how we sustain our practice when working rurally or remotely, 2) how we organise our services so the women are able to meet the back-up midwife and those that may be involved in their care, 3) the conversations we have regarding transfer, especially where transfer time is long, and 4) how we ensure that partners' and significant others' voices are heard as we hand over care to our colleagues at the base hospital. Strategies suggested by the authors that may help increase women's confidence to begin labour in their local area need discussion and implementation so rural and remote maternity services can be sustained.

Reference: *Midwifery* 2017;52:49-56

[Abstract](#)

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Midwifery continuity: the use of social media

Authors: McCarthy R et al.

Summary: This paper examined the experiences of women accessing known midwives through a social media platform and their experiences with continuity of care. Two private Facebook groups comprising 31 mothers and 4 midwife moderators were created. The women had 8 online and face-to-face focus groups, conducted at approximately 10-week intervals, and 28 individual one-to-one online interviews within 6 weeks of giving birth. Analysis of the data showed that relational continuity was able to be achieved using social media and was positive for both mothers and midwives. Regular online contact achieved a high level of relational satisfaction, and the lack of face-to-face interaction did not negatively affect the relationship between midwives and mothers.

Comment: This paper examined the experiences of women in the UK accessing known midwives through a social media platform and their experiences and perception of continuity of care. The women found that the busy nature of hospitals and midwives involved in their care was a barrier for continuity of care and affected their ability to get relevant and trustworthy information. Having two midwives who connected with them on a secure platform that could not be identified by other Facebook users enabled women and midwives to develop relational and information continuity. The interaction occurred with a group of women facilitated by two midwives. The women were able to converse with the midwives individually on any sensitive issues they preferred not to share in a group. Women didn't mind that the responses from the midwives were not instant, as they knew that the two midwives would respond and the information or suggestions would be trustworthy. There appeared to be a feeling of a possible disconnect with the midwives that were actually involved in the women's care, as they developed relationships with midwives on the social platform. How did this affect the midwives within the organisation? The legal issues that could arise from such interaction need to be addressed by organisations/practitioners prior to use of social media platforms. It was unclear what consideration had been given to risk of hacking, spy-ware and bugs amongst others so that confidential information was not leaked outside the group, though the security was at its highest level on the platform. In order to use such platforms successfully, trust is a prerequisite. Not having that trust as part of the organisational culture and between women and midwives can present a risk when it comes to social media. There was a specific timeframe given to the midwives that they could spend on the social media platform however there is a potential that it can become addictive. Is such a platform useful where continuity of care is already a cornerstone of maternity care? Anecdotally there are midwives using messenger as a platform to communicate with groups of women – does this affect their face-to-face interactions during the childbirth continuum and if so in what way?

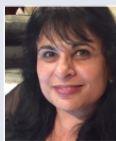
Reference: *Midwifery* 2017;52:34-41

[Abstract](#)

Independent commentary by Nimisha Waller

RGON, RM, ADM, Dip. Ed, MM, DHSd Candidate

Nimisha Waller is a Senior Lecturer in the Dept of Midwifery, Faculty of Health and Environmental Science at AUT University. She has practised midwifery in tertiary units and as an LMC. She has been a supervisor and a member of the competency review panel for MCNZ, reviewer for NZCOM Midwifery Standards Review and an NZCOM educator for the Midwifery First Year Practice (MYFP). She is an expert advisor and an Academic member/Deputy Chair on the MOH Compliance panel that monitors the Code in New Zealand (Breastfeeding). Nimisha has a particular interest in maternal wellbeing, diabetes and obesity, newborn, postnatal distress, traumatic birth and PTSD. Her doctoral study is on post-birth conversation between midwives and women and the impact it has on them.



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Research Review publications are intended for New Zealand health professionals.

Family members' infant feeding preferences, maternal breastfeeding exposures and exclusive breastfeeding intentions

Authors: Lok K et al.

Summary: This study examined the association between family members' infant feeding preferences, breastfeeding exposures, and women's exclusive breastfeeding intentions. 1277 breastfeeding mother-infant pairs were recruited from 4 public hospitals in Hong Kong. 78.1% of mothers reported an intention to exclusively breastfeed, and the median intended duration of exclusive breastfeeding was 26 weeks. The husband's preference for breastfeeding, previous breastfeeding experience, and attendance at an antenatal breastfeeding class were all strongly associated with higher maternal intention to exclusively breastfeed. For every additional family member who preferred breastfeeding, the likelihood of intending to exclusively breastfeed increased by 32%.

Comment: The findings of the study will not be a surprise to many practitioners nor that in NZ exclusive breastfeeding is recommended for the first 6 months following the birth of the baby. Various studies have reported the influence that fathers and significant others have on the mother's decision to breastfeed. Antenatal classes do accommodate couples, so fathers would hopefully be included in breastfeeding education and provide appropriate support to the woman. However there are a number of areas that could be reflected on to see if we need to improve education for fathers and significant others so that exclusive breastfeeding is maintained. How do we inform/support women/couples who may decide not to attend antenatal classes? How are significant others included in the discussion/education that is available at present? Do we discuss with women their exposure to breastfeeding and their partner/significant other's views on exclusive breastfeeding? Do we make/have time to discuss the experience of breastfeeding of significant others who will be supporting the woman? Does the education/information we provide prepare them for the challenges of breastfeeding? What resources and support in the community are accessible for women/whanau to maintain the duration of exclusive breastfeeding in the first 6 months of baby's life. Feeding can take a lot of mother's time when fathers/significant others can feel isolated and of no value. We should encourage them to sit with the woman while she is breastfeeding and troubleshoot things that could occur when breastfeeding so they have strategies to manage and be supportive.

Reference: *Midwifery* 2017;53:49-54

[Abstract](#)

Maternal singing of lullabies during pregnancy and after birth: effects on mother-infant bonding and on newborns' behavior

Authors: Persico G et al.

Summary: This study investigated the effects of maternal singing of lullabies on bonding, newborns' behaviour and maternal stress. 83 (singing cohort) and 85 (control cohort) women were recruited at antenatal classes at 24 weeks' gestation and followed up for 3 months after birth. Maternal singing of lullabies had no significant influence on prenatal attachment, but was associated with greater postnatal bonding. Singing lullabies also decreased the incidence of neonatal crying episodes, infantile colic, neonatal nightly waking and perceived maternal stress.

Comment: My interest in this study stemmed from hearing women in my family and extended family singing lullabies to newborn babies. Elders in our family often suggested how singing to babies settled them. I am sure many of you may have experienced this in your own family. My first thought was do we need scientific research in this topic area and how do mothers feel if they have a perception that they can't sing or have been told they can't sing (my singing is terrible!). While thinking about this I came across an article by [Elena Skoko](#) (2017) who spoke with the lead researcher of the study – her review encapsulates all the things that were swirling about in my mind about the usefulness of this study. It is enlightening!

Reference: *Women Birth* 2017;30(4):e214-e220

[Abstract](#)