Midwifery RESEARCH REVIEW™

Making Education Easy

Issue 24 – 2021

In this issue:

Abbreviations used in this issue

COVID-19 = coronavirus disease 2019
ICM = International Confederation of Midwives
NICU = neonatal intensive care unit
SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2

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Welcome to the latest issue of Midwifery Research Review.

In this issue, a Swedish cohort study finds no link between caesarean delivery and neurodevelopmental and psychiatric disorders in children, a meta-analysis reports adverse pregnancy outcomes associated with COVID-19, and a NZ survey of maternal satisfaction with care is a must read. Also in this issue, systematic reviews evaluate the favourable effects of telemedicine interventions on maternal postpartum depression, the maternity care experiences of women with physical disabilities (we can do better!), and the significance of an asymptomatic heart murmur at the newborn physical examination.

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

Kind regards,

Nimisha Waller
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Assessment of cesarean delivery and neurodevelopmental and psychiatric disorders in the children of a population-based Swedish birth cohort

Authors: Zhang T et al.

Summary: This Swedish register-based cohort study examined the association between caesarean delivery and neurodevelopmental and psychiatric disorders in children. 1,179,341 term-birth singletons born in 1990–2003 were followed up through 2013. 1,048,838 of them were delivered vaginally, 59,514 were delivered via planned caesarean delivery, and 70,989 were delivered via intrapartum caesarean delivery. Mean age of offspring at follow-up was 17.7 years after vaginal delivery, 16.6 years after planned caesarean delivery, and 16.8 years after intrapartum caesarean delivery. After adjustment for measured confounding factors (parental and neonatal characteristics, maternal comorbidities, and pregnancy complications), caesarean delivery was associated with a higher risk in offspring of neurodevelopmental disorders, attention deficit hyperactivity disorder (ADHD), and intellectual disability compared with vaginal delivery. However, these associations became nonsignificant after consideration of familial genetic and environmental factors.

Comment: As suggested by the authors, the incidence of caesarean section is increasing worldwide and the global prevalence nearly doubled from 12.1% of all births in 2000 to 21.1% in 2015. In this study in nearly 1.2 million deliveries, babies born by planned or intrapartum caesarean section had 10–30% increased risk of being diagnosed with any neurodevelopmental disorder, ADHD, and intellectual disability compared with children born via vaginal delivery. However, the association they observed reduced to a null after adjusting for familial (environmental and genetic) factors. The findings in this study therefore do not suggest a causal association between caesarean delivery and neurodevelopmental and psychiatric disorders. The adverse outcome is therefore not related to caesarean delivery. However, as suggested by the authors it is not known to what extent genetic and familial environmental factors play a role in these adverse outcomes in women and babies.

Reference: JAMA Netw Open 2021;4(3):e210837

Abstract

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The impact of COVID-19 on pregnancy outcomes

Authors: Wei SQ et al.

Summary: This systematic review and meta-analysis evaluated the association between SARS-CoV-2 infection during pregnancy and adverse pregnancy outcomes. A search of MEDLINE, Embase, ClinicalTrials.gov, medRxiv and Cochrane databases identified 42 observational studies (n=438,548) that reported data on SARS-CoV-2 infection and COVID-19 severity during pregnancy. Meta-analysis of the data showed that, compared with no SARS-CoV-2 infection in pregnancy, COVID-19 was associated with preeclampsia (odds ratio [OR] 1.33, 95% CI 1.03–1.73), preterm birth (OR 1.82, 95% CI 1.38–2.39) and stillbirth (OR 2.11, 95% CI 1.14–3.90). Compared with mild COVID-19, severe COVID-19 was strongly associated with preeclampsia, preterm birth, gestational diabetes and low birth weight.

Comment: In the last issue of *Midwifery Research Review* (issue 23; 2021) the risk of preterm birth due to COVID-19 was based on 2 studies. There was also insufficient research comparing pregnancy outcomes for those with and without COVID-19. As you will be aware, pregnant women and their babies will be particularly at risk as physiological changes involve the cardiorespiratory and immune systems, resulting in altered response to COVID-19 infection in pregnancy. Baby may be exposed to COVID-19 during critical periods of foetal development. This systematic review and meta-analysis aimed to determine the association between COVID-19 infection and adverse pregnancy outcomes. COVID-19 in pregnancy is associated with an increased risk of caesarean section and preterm birth compared with asymptomatic COVID-19. Compared with mild COVID-19, severe COVID-19 is strongly associated with preeclampsia, gestational diabetes, preterm birth, low birth weight, and admission to NICU, and can lead to maternal and neonatal morbidity. This meta-analysis provides clear evidence in comparison to previous living systematic reviews. As stated by the authors, the mechanisms underlying the association between COVID-19 and preeclampsia are unclear, but investigators have shown that COVID-19 infection may lead to renin-angiotensin system dysfunction and vasoconstriction by binding to angiotensin-converting enzyme 2 receptors. Though we have nil to low COVID-19 cases in NZ it is clear that severe COVID-19 infection in pregnancy can lead to maternal and neonatal morbidity.

Reference: CMAJ 2021;193(16):540-8
Abstract

Do maternity services in New Zealand's public healthcare system deliver on equity?

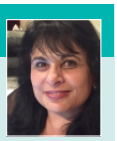
Authors: Dawson P et al.

Summary: This study used structural equation modelling (SEM) of national maternal satisfaction survey data to evaluate the equity of maternity services in NZ's public healthcare system. SEM showed that maternal satisfaction with care was not equitably distributed. Younger women, those from areas of high socioeconomic deprivation, and women living in remote rural areas were most likely to report dissatisfaction associated with physical access, cultural care and information provided. Financial burden of additional costs was also unevenly distributed.

Comment: A secondary analysis of survey data was undertaken using SEM to highlight whether there was discernible inequity in reported maternal satisfaction of care during pregnancy, birth and postpartum period in NZ. While the original survey indicated that 77% of women were satisfied or very satisfied with care, the secondary analysis shows that these responses were not equitably distributed. According to the authors, younger, highly deprived, and remote rural women were most likely to be affected by dissatisfaction associated with equity aspects of their maternity care and/or barriers to equity associated with additional costs. These findings are congruent with other research into satisfaction of maternity care where social determinants were noted. The article is a must read, to understand the inequity in physical access, cultural care, and appropriate information to improve the maternity experience of groups identified, particularly young women and those in remote rural areas. The postal survey is not a culturally appropriate method for Māori and Pasifika women/whānau and hence consider use of patient-reported outcome and experience measures available nationally. Great explanation of what SEM is and its use in secondary analysis of complex survey data. Work needs to continue to ameliorate inequities.

Reference: Midwifery 2021;95:102936
Abstract

Independent commentary by Nimisha Waller RGON, RM, ADM, Dip. Ed, MM, DHSc



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The effectiveness of telemedicine interventions, delivered exclusively during the postnatal period, on postpartum depression in mothers without history or existing mental disorders

Authors: Hanach N et al.

Summary: This systematic review and meta-analysis examined the effectiveness of telemedicine interventions on postpartum depression in women with no history of mental disorders. A search of PubMed, Web of Science, Cochrane Library, and ProQuest Dissertations & Theses databases identified 10 randomised controlled trials (n=2366) that were suitable for inclusion. Meta-analysis of the data showed that women who received technology-based interventions during the postnatal period, regardless of whether it was web-based or telephone-based, had a significant improvement in postpartum depression ($p<0.0001$). The completion rate was higher in the intervention groups compared with the control groups (80% vs 76%).

Comment: Telemedicine has been used to track activity, diet, general wellbeing as well as glucose monitoring in the presence of diabetes. This review aimed to systematically evaluate the efficacy of telemedicine interventions delivered exclusively during the postnatal period for improving maternal postpartum depression in women who had no previous history of mental health disorders. Findings of the meta-analysis highlighted the significantly favourable effects of telemedicine interventions on maternal postpartum depression. Overall, compliance rates and participants' satisfaction appeared to be promising and positive across studies. In a subgroup analysis, no significant difference was found between the telephone-based and web-based groups for improving postpartum depression symptoms. Furthermore, with the ability to initiate a voice call or text message to the clinician, new mothers feel supported by knowing they can easily get in touch with someone with any questions or concerns that come up. The individualised support that is facilitated by a telehealth programme can extend the reach of providers, prevent the worsening of symptoms or concerns, and provide peace of mind to mothers in a challenging yet exciting time of their lives. The potential for multiple care team members to connect via telemedicine allows for a holistic and team-based approach to care. According to the authors, high-quality research is still required to establish an evidence-based telemedicine approach and whether long-term use improves postnatal depression.

Reference: Midwifery 2021;94:102906
Abstract

Maternity care experiences of women with physical disabilities

Authors: Heideveld-Gerritsen M et al.

Summary: This systematic review evaluated the maternity care experiences of women with physical disabilities. A search of PubMed, Embase and CINAHL identified 10 studies that were suitable for inclusion. Analysis of the results indicated that women with physical disabilities experience barriers related to accessibility of facilities, adapted equipment, lack of knowledge, and healthcare providers' attitudes (dismissal of their concerns and unwillingness to assist). Support has a positive influence on their maternity care experiences.

Comment: According to the Office for Disability Issues, 1 in 4 New Zealanders are limited by a physical, sensory, learning, mental health or other impairment. Women with disabilities experience problems during pregnancy and childbirth due to physical barriers and barriers to information, problems with communication and the attitude of providers. A recent World Health Organization statement calls for more action, dialogue, research and advocacy on disrespectful treatment during childbirth. The aim of this systematic review was to identify and provide an overview of reported maternity care experiences of women with physical disabilities, including sensory disabilities. Women with sensorial disability feel that communication is difficult unless supported by a partner. Supportive attitudes, sensitive and respectful care and advocacy help women feel human, and maintain their mana. What knowledge do we have about the relationship between physical disability and pregnancy? Where do we get the knowledge from while completing the midwifery programme and as a registered midwife? How does our lack of knowledge affect women with disabilities? Do we dismiss their concerns and only focus on pregnancy and childbirth? Do we recognise their needs? What strategies do we use to ensure women do not feel afraid and vulnerable – are these strategies different if women have disabilities? Are maternity hospitals and primary units designed to care for women with disabilities? The Ministry of Health Consumer satisfaction survey (2014) suggests that 66% of women with disabilities were overall satisfied with maternity care however they did not find antenatal classes that were right for them! Must read!

Reference: Midwifery 2021;96:102938
Abstract

The breastfeeding and early motherhood experiences of older first-time mothers

Authors: Edwards R et al.

Summary: This qualitative study in Canada investigated the breastfeeding and early motherhood experiences of first-time mothers aged >35 years. 23 first-time mothers aged >35 years were asked about the factors that affected their decisions about breastfeeding, and how these factors affected their transition to motherhood in the first 6 months postpartum. Some mothers initially believed that breastfeeding defined motherhood, and this belief had a negative effect on both early breastfeeding and their transition to motherhood. As this belief waned, the mothers became more active in the decision-making related to infant feeding and mothering.

Comment: Approximately 20–25% of NZ women who had their first baby in 2017 were aged 35 or older. This study presented pertinent information about the breastfeeding experiences and practices of first-time mothers aged >35 years. The women were well established in their careers, had a certain way of life and any reduction of time in their life due to breastfeeding was deeply felt by them. The lack of realistic information was a shock for them. For example, a woman's understanding was that 'they will take the baby, plug the baby in and the baby is going to suck'. Realising it was not a 'plug and play thing' was a shock. Lack of knowledge about normal newborn behaviour and development, control, pain, sleeplessness and technical aspects of breastfeeding heightened the women's sense of not meeting their own expectations as mothers. Once they decided to 'drop the book' and 'watch the baby' their experience, skills, knowledge and trust in their own ability increased. Breastfeeding being a central issue to mothering changed to breastfeeding being a piece of mothering. From my perspective, the key recommendations are applicable for all breastfeeding mothers, not just for women over 35. It is worth reading the article to enhance breastfeeding support for women over 35 as well as for other breastfeeding mothers. BFI crib cards can be downloaded to view information provided to ensure consistency.

Reference: Midwifery 2021;96:102945
Abstract

What is the significance of hearing a heart murmur during the newborn physical examination?

Authors: Seignior HL

Summary: This literature review investigated the significance of hearing an asymptomatic heart murmur at the newborn physical examination. Analysis of available evidence showed that 0.6–10.7% of newborns had a heart murmur. 13–67% of these newborns had some form of congenital heart disease (although many had clinically insignificant lesions), and 2–9% had a form of critical congenital heart disease. Pulse oximetry increased the sensitivity of screening for critical congenital heart disease.

Comment: According to Heart Kidz NZ, 12 babies per week (624 babies a year) are born with a congenital heart disease (CHD), and over 550 major heart surgeries are carried out on children each year. The screening currently used in NZ to detect CHD includes antenatal ultrasound ('anatomy scan') and physical examination of the newborn. Both these investigations have only modest sensitivity. Nearly 20% of infants born in NZ with a critical heart defect are diagnosed after initial discharge from hospital. Pulse oximetry screening will detect hypoxaemic infants and has been shown to improve the early diagnosis of CHD in newborn infants, however it should not replace newborn clinical assessment for CHD. Auscultating for murmurs, detection of clinically visible cyanosis and palpation of pulses (femoral pulses in particular) remain an important part of the newborn, first-week and 6-week examinations. Clinical concerns warrant an immediate referral to the neonatal/paediatric team. It is important to note that screening before 2h of age is associated with higher false-positive rates. The midwife is competent at the time of registration to undertake a full newborn assessment and this is included in the pre-registration midwifery curriculum in NZ. Nearly 4% of babies in NZ are born at home. Midwives usually stay with the mum and baby for 2–3h following a home birth and will return for a follow-up visit within the next 24h. Consideration for pulse oximetry screening should be given ideally prior to the midwife's departure, but may be deferred until the return visit if a pulse oximeter is not available at the time of the birth. Please refer to Ministry of Health (2012) Referral Guidelines regarding consultation or transfer of care in the presence of or suspicion of heart murmur or CHD.

Reference: Br J Midwifery 2021; published online Mar 2
Abstract

Prevalence, related factors, and levels of burnout among midwives

Authors: Albendín-García L et al.

Summary: This systematic review investigated factors associated with burnout in midwives. A search of CINAHL, LILACS, MEDLINE, ProQuest, PsycINFO, SciELO, and Scopus identified 27 studies that assessed burnout in a total of 5612 midwives. The main factors related to burnout were working conditions such as work overload, lack of autonomy, and professional recognition. Midwives with <10 years' experience were more vulnerable to burnout than those with >10 years' experience. Good leadership and the use of continuity models of care were the most significant protective factors against burnout.

Comment: There have been numerous publications about emotional wellbeing and burnout among midwives over the last decade. Burnout is multifactorial in nature. This systematic review analysed the prevalence of low, medium, and high levels of burnout in midwives who work in diverse healthcare settings as well as the related factors that influence the development of the syndrome. It found evidence that midwives primarily experience 2 facets of burnout: emotional exhaustion and low personal accomplishment. Separate studies regarding emotional exhaustion undertaken in Canada and the UK using different instruments reported similar results to those found in this review. Midwives' perceptions of what relates to moderate emotional exhaustion, depersonalisation, low personal accomplishment, impact on them/whānau, key protective factors and how healthcare systems can be modified (continuity of care to case load of midwives) is worth a read. Though the findings of younger midwives being vulnerable is from a UK study it is an opportunity to consider how proactive are we in supporting younger midwives in the profession to help them sustain their emotional wellbeing?

Reference: J Midwifery Womens Health 2021;66;24-44
Abstract

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Effect of health literacy interventions on pregnancy outcomes

Authors: Zibellini J et al.

Summary: This systematic review of randomised controlled trials assessed the effectiveness of health literacy interventions on pregnancy outcomes. 13 studies that assessed health literacy interventions designed to improve pregnancy outcomes were included. 3 of them evaluated decision-aid interventions, 6 evaluated face-to-face interventions, and 4 evaluated written interventions (e.g. computer-based interventions and information leaflets). The primary outcome was knowledge in 10/13 studies, and health literacy in 2/13 studies (1 study did not report either primary outcome). Knowledge improved significantly across the 10 studies, but health literacy was only assessed at a single time-point so improvements could not be determined.

Comment: The prevalence of low health literacy in pregnant women ranges between 15% and 44%. Information and education can play a significant role in promoting the health of pregnant women and their babies. Health literacy includes skills such as reading, listening, analysing, decision-making, and using these skills in health situations irrespective of the educational level or general reading ability. Inadequate health literacy is considered a global issue. Insufficient understanding of healthcare by a woman makes informative decision-making difficult or impossible, leading to undesired health outcomes for herself and her baby. This is the first systematic review to explore the impact of health literacy interventions on health outcomes in pregnant women. Few randomised controlled trials of health literacy interventions for pregnant women currently exist. This means that only tentative observations about how health literacy interventions affect pregnancy outcomes can be made. There is some evidence from this review that health literacy interventions may improve knowledge and pregnancy-related outcomes such as food selection ability, informed choice, and anxiety. However, the findings from this systematic review identify important research gaps, and directions for future maternal health literacy research. What aids have you used to explain prenatal testing or assessment to ensure women understand the information well enough to provide informed consent? Let's PLAN for Better Care Resources can be useful if not seen or used before.

Reference: Women Birth 2021;34(2):180-6
Abstract

Exploring the medicalisation of childbirth through women's preferences for and use of pain relief

Authors: Westergren A et al.

Summary: This cross-sectional study in Sweden explored the medicalisation of childbirth through women's preferences for and use of pain relief. 129 women with a birth plan and 110 without a birth plan were included, all of whom gave birth in 1 hospital in Sweden between March and June 2016. Parity rather than birth plan was a greater determinant for use of pain relief; primiparas used more pain relief, had more interventions, and were less satisfied with their birth experiences than multiparas. Epidural analgesia was associated with a 2- to 3-fold increase in interventions. However, most (79.5%) women had some form of intervention during birth, regardless of whether they had an epidural or not.

Comment: In Sweden, 99.9% of births take place in hospitals; home births are rare, and there are no birth centres or midwife-led clinics therefore it is a different model of care from NZ. Hence, a high percentage of all women (79.5%) and primiparas (94.6%) having some form of intervention during labour and birth regardless of having an epidural or not will not be a surprise. Neither should parity being a greater determinant for use of pain relief, frequency of interventions and level of satisfaction than a birth plan. Primiparas' lack of ability to accurately judge their capacity to cope in labour may in part explain the high intervention rates. However, it appears that the culture of medicalisation being the norm, where women's preferences may be difficult to be voiced or considered, lack of information or documentation of support provided to women in labour, including the use of non-pharmacological techniques and whether the interventions were appropriate or not may also impact on intervention rates. Only 4.2% of the women met the ICM definition of normal birth. This is an opportunity for us all to reflect on what are the attitudes and behaviours of caregivers in relation to culture within the organisation, provision of women-centred care, the woman's involvement in decision making and informed consent and the best way to get feedback from women whose preferences may be shaped by societal and cultural norms, hence thinking 'what is, must be best' (a quote used by the authors).

Reference: Women Birth 2021;34(2):118-27
Abstract