

Midwifery RESEARCH REVIEW™

Making Education Easy

Issue 23 – 2021

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Abbreviations used in this issue

COVID-19 = coronavirus disease 2019
DHB = District Health Board
GCS = gentle caesarean section
ICU = intensive care unit
MatCHAT = Maternity Case-finding Help Assessment Tool
NHS = National Health Service
WHO = World Health Organization

Welcome to the latest issue of Midwifery Research Review.

In this issue, we report the clinical manifestations and outcomes of COVID-19 in pregnancy, lessons learned from past epidemics and pandemics, the importance of robust interpretation and language to highlight the risk of complicated birth so physiological birth is not undermined, the need to discuss and plan for gentle caesarean section, methods of pushing in the second stage of labour, and the importance of correctly identifying/classifying perineal trauma. We also include articles on the role of cognitive behavioural therapy (delivered via virtual reality) in the management of pain and anxiety during labour, the importance of midwifery job autonomy in NZ, and the use of the e-screening tool MatCHAT. We finish with a report on the association between caffeinated drinks in late pregnancy and risk of stillbirth.

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

Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy

Authors: Allotey J et al.

Summary: This systematic review and meta-analysis determined the clinical manifestations and outcomes of COVID-19 in pregnancy. 77 cohort studies published between December 2019 and June 2020 were included. Overall, 10% of pregnant and recently pregnant women attending or admitted to hospital for any reason were diagnosed with COVID-19. The most common clinical manifestations were fever (40%) and cough (39%). Meta-analysis of the data showed that pregnant and recently pregnant women with COVID-19 were less likely to report symptoms of fever and myalgia than non-pregnant women of reproductive age, and were more likely to be admitted to an ICU and require invasive ventilation. Increased maternal age, high body mass index, chronic hypertension, and pre-existing diabetes were associated with severe COVID-19 in pregnancy. Pre-existing maternal comorbidity was a risk factor for admission to ICU and need for invasive ventilation. The risk of preterm birth was 3 times higher in pregnant women with COVID-19 than in those without COVID-19.

Comment: Thank you to Dr David Smith (retired GP) for sending his extensive collection of COVID-19 articles from around the world as I had not included any articles on the COVID-19 pandemic in our last issue. There has been a rapid increase in mortality and morbidity in some countries due to COVID-19 since it was first reported in 2019. The use of a 'living systematic review' is new and the recently published editorial by the *BMJ* regarding their policy for publishing living reviews can be accessed [here](#). The Cochrane community also defines and provides information and guidance about 'living systematic reviews'. This comprehensive and exhaustive review provides insights into clinical manifestations, risk factors for complications, and adverse effects for mothers and babies to guide healthcare providers caring for pregnant women with suspected or confirmed COVID-19. Three-quarters of the 7% of women who tested positive for COVID-19 during pregnancy were asymptomatic, highlighting the importance of universal screening in pregnancy. Although mortality due to COVID-19 was low among pregnant women there is an increased likelihood of admission to the ICU and hence a need for careful management of COVID-19 during pregnancy. The finding regarding the risk of preterm birth is based on only 2 studies. As the authors note, there is insufficient research comparing pregnancy outcomes for those with and without COVID-19. However, information is rapidly evolving and findings presented in this review are likely to change as better and larger studies are published. This is pertinent information for practitioners although we have low COVID-19 cases in NZ.

Reference: *BMJ* 2020;370:m3320

[Abstract](#)



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Lessons from past epidemics and pandemics and a way forward for pregnant women, midwives and nurses during COVID-19 and beyond

Authors: Shorey S & Chan V

Summary: This systematic review and meta-analysis examined the experiences and needs of pregnant women, midwives, and maternity nurses during the current COVID-19 pandemic. A search of PubMed, Scopus, PsycINFO, and Cumulative Index to Nursing and Allied Health (CINAHL) identified 8 qualitative studies of pregnant women, midwives, and/or nurses in maternity units who had experienced epidemics and/or pandemics. Meta-analysis of the data showed that they all experienced negative psychological responses during the epidemics and pandemics. Challenges included limited available information and public stigma. Coping strategies in pregnant women included actively looking for more information, and seeking solace in religion. Families were reported to be sources of both support and stress, and needed more informational, emotional, and financial support during a pandemic.

Comment: In the last 2 decades we have experienced numerous outbreaks of infections including dengue fever, yellow fever, Severe Acute Respiratory Syndrome (SARS), the Ebola virus disease, mumps, Middle East Respiratory Syndrome (MERS) and the Zika virus. One of the worst pandemics experienced was that of the H1N1/09 virus. The growing spread of COVID-19 has become one of the most significant global health problems and still continues to be with a COVID-19 second variant emerging from the UK and South Africa. This qualitative systematic review aimed to synthesise knowledge on the experiences and needs of pregnant women, midwives, and nurses of maternity units and how they were supported during past epidemics and pandemics. The negative psychological response experienced by all is not surprising, the need for technology to remain connected in relation to healthcare and developing appropriate programmes/support including mindfulness exercises and resilience workshops is essential, as well as training community lay workers if there are challenges to accessing the technology. It is pertinent to read the full article to fully understand the impact on midwives and nurses such as stigma and the importance of having informed and supportive healthcare systems so they can continue to provide high quality care despite the challenges faced.

Reference: *Midwifery* 2020;90:102821

[Abstract](#)

Risk of complicated birth at term in nulliparous and multiparous women using routinely collected maternity data in England

Authors: Jardine J et al.

Summary: This cohort study in England used routinely collected maternity data to determine the risk of complicated birth at term in nulliparous and multiparous women. 276,766 women with a singleton birth at term in 87 NHS hospitals in England between April 2015 and March 2016 were included. Complicated birth was defined as a birth with use of an instrument, caesarean delivery, anal sphincter injury, postpartum haemorrhage, or Apgar score ≤ 7 at 5 minutes. Multiparous women without a history of caesarean section had the lowest rates of complicated birth, varying from 8.8% in those without specific risk factors to 21.8% in those with ≥ 3 risk factors. The rate of complicated births was higher in nulliparous women, with corresponding rates varying from 43.4% in those without specific risk factors to 64.3% in those with ≥ 3 risk factors. Rates were highest in multiparous women with previous caesarean section (corresponding rates of 42.9% and 66.3%).

Comment: If you have not seen or read the article nor the rapid response it is a must! Rather than providing a commentary, here is a [link](#) to the collaborative rapid response provided by exceptional midwifery/obstetric leaders/professors. If you do not yet subscribe to [Midwifery Research list](#) or [Normal Birth Research list](#) but would like to, please click on the links provided. The response demonstrates the importance of working as a team swiftly, collaboratively and professionally when interpretation and language used during research findings dissemination has the potential to undermine a woman's ability to have a physiological birth. The process of how this was achieved through discussion on the list was a great learning and hence I'm sharing their work!

Reference: *BMJ* 2020;371:m3377

[Abstract](#)

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Maternal and neonatal outcomes for the gentle caesarean section in breech presentation

Authors: Brethouwer CH et al.

Summary: This retrospective study compared maternal and neonatal outcomes after a GCS for fetuses in cephalic versus breech presentation. 180 women who underwent a GCS were analysed; 120 fetuses were in cephalic position and 60 were in breech position. The frequency of Apgar 1 score was significantly lower for breech versus cephalic position ($p=0.019$), but rates of Apgar 5 and 10 did not differ significantly between positions. Neonatal temperature was slightly lower in breech position, and birthweight was significantly lower ($p=0.009$). Blood loss was significantly higher in cephalic position (441 vs 353ml; $p=0.002$).

Comment: GCS or natural caesarean section apparently enables women/whānau to have an ideal birth when the option of vaginal birth is not possible. The article needs to be read in full to understand its conclusion of there being no clinically significant difference in maternal and neonatal outcomes. What GCS is and the rationale for the differences that are present in babies presenting as a breech such as initial Apgar score, baby's birth weight, baby's temperature and maternal blood loss are discussed by the authors. However, it is essential to remember that GCS is still a surgery, and hence do we prepare women to ask the right questions when making the decision of elective caesarean section? There is also concern that GCS may further increase the rate of caesarean sections though some feel that GCS enables women to be participants in their birthing experience and hence not view the experience as a failure. There are various websites that suggest how to write a GCS birth plan as GCS should be considered as a possibility irrespective of whether caesarean section is elective or the decision occurs during labour, and the plan should include more than immediate skin-to-skin contact and early initiation of breastfeeding. Hence, disseminating further information of any significant difference in maternal and neonatal outcomes following GCS in labour is a must!

Reference: *Br J Midwifery* 2020;28(9):660-4
[Abstract](#)



Diagnosis of perineal trauma: Getting it right first time

Authors: Roper JC et al.

Summary: Digital rectal examination is recommended by many national guidelines as part of postpartum evaluation, to identify any obstetric anal sphincter injuries and isolated rectal tears. These can have serious consequences (e.g. anal incontinence) in women if not identified. This article discussed the evidence base for including a digital rectal examination in the clinical assessment of the perineum after every vaginal delivery.

Comment: Auckland DHB guidelines (2017) suggest that 30% of 3rd/4th degree tears go unrecognised at delivery. Hence, rectal examination following the birth of the baby, though invasive and painful, should be performed by healthcare professionals. In the presence of doubt it is best to use a lithotomy position and a rectal examination. The National Institute of Clinical Excellence (2017) and the Royal College of Obstetricians and Gynaecologists (2015) recommend conducting a rectal examination before and after suturing perineal tears. The vaginal and rectal examinations before repair are performed to classify the perineal trauma accurately, and after suturing are performed to check that the repair is complete and that no sutures are penetrating the anorectal mucosa. It is essential that midwives have the skill to accurately assess and classify perineal trauma, Obstetric Anal Sphincter Injury (OASI), and isolated rectal injuries. If these injuries are not correctly classified, they can lead to worse outcomes for women who may require further surgery and intervention. Although a perineal laceration is not considered a treatment injury, a failure to provide care or departures from standards of care that caused an injury can be covered by the Accident Compensation Act (2001) as a treatment injury ([ACC, 2020](#)). Due to the risk of over and under diagnosis of OASIs it is important we reflect on when the appropriate training was last attended to maintain/improve competence and whether the practice includes basics of performing a structured vaginal and rectal examination following vaginal birth where perineal trauma has been sustained.

Reference: *Br J Midwifery* 2020;28(10):710-7
[Abstract](#)

Is directed open-glottis pushing more effective than directed closed-glottis pushing during the second stage of labor?

Authors: Barasinski C et al.

Summary: The EOLE study compared the effectiveness of open-glottis and closed-glottis pushing during the second stage of labour. At 4 French hospitals between July 2015 and June 2017, 250 women in labour with a singleton foetus in cephalic presentation at term were randomised (at a cervical dilation ≥ 7 cm) to the open-glottis pushing group (prolonged exhalation contracting the abdominal muscles to help move the foetus down the birth canal) or the closed-glottis pushing group (Valsalva pushing). All of the women had previously been trained in both types of pushing. Intention-to-treat analysis showed that the mean duration of the expulsion phase was longer in the open-glottis group (24.4 vs 18.0 min; $p=0.002$), but the effectiveness of pushing did not differ significantly between groups (48.0% and 55.2% of women in the respective groups had a spontaneous birth without an episiotomy or perineal tear).

Comment: The use of epidural analgesia during childbirth in France is 80%. Closed-glottis pushing or Valsalva breathing is used the most in the second stage of labour. Closed-glottis pushing is thought to carry more risks to mother and baby, as high abdominal pressure may induce pressure on the perineum, increasing the risk of perineal lacerations. Valsalva breathing may also reduce maternal blood pressure and thereby diminish placental perfusion and foetal oxygenation. The main objective of this study was to assess the effectiveness of directed open-glottis pushing (i.e. pushing while exhaling) and directed closed-glottis pushing (i.e. Valsalva pushing). The other objectives were to compare immediate maternal morbidity, early neonatal morbidity, and uncomplicated births in the two groups. No statistically significant difference was observed between the effectiveness of directed open-glottis versus directed closed-glottis pushing. There were also no between-group differences for severe perineal lacerations, episiotomies, immediate postpartum haemorrhages, uncomplicated births, or adverse neonatal outcomes, as assessed by low umbilical cord pH or the need for neonatal special care. The results of this study are consistent with those in the literature. No randomised trials have found that any type of pushing affects the mode of birth, nor has the meta-analysis by Lemos et al. (2017). As practitioners we should support women with both types of pushing during the second stage of labour. The WHO (2018) also recommends women should follow their own urge to push.

Reference: *Midwifery* 2020;91:102843
[Abstract](#)

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The effect of cognitive behavioral techniques using virtual reality on birth pain

Authors: Gür EY & Apay SE

Summary: This randomised controlled trial investigated the effects of cognitive behavioural techniques (using virtual reality) on birth pain. 273 pregnant women at a maternity hospital in eastern Anatolia, Turkey, were randomised to receive 1 of 5 different virtual reality experiences: group A watched videos of newborn photographs with classical music; group B watched a video of a newborn photograph album; group C watched an introductory film of Turkey; group D listened to classical music; and group E received routine hospital care. All cognitive techniques applied with virtual reality reduced labour pain during the active phase of labour. Mean visual analogue scale scores for birth pain were 4.98, 4.96, 5.96, 5.60, and 6.38 in the respective groups ($p < 0.05$), and mean verbal rating scale scores for birth pain were 2.64, 2.70, 3.18, 2.80, and 3.96, respectively ($p < 0.05$).

Comment: Within the literature the use of distractions such as music and movies has been shown to be efficient in reducing childbirth pain, distress and anxiety. Virtual reality has been used to provide distractions to reduce acute and chronic pain in the general population. Being captivated by an imaginative virtual environment leads to less perception of pain at the central brain level. In this Turkish study the groups were randomised to 5 different cognitive behavioural techniques applied with virtual reality for 10 minutes in active phase of labour. Though all techniques reduced the pain during the active phase of labour, those that were randomised to view newborn photographs with classical music and newborn photograph albums had more effective pain relief. These were photographs of healthy newborn babies that were calm and not crying. Thus, cognitive behavioural techniques applied with virtual reality offer another alternative to non-pharmacological pain relief for women whose aim is to have physiological labour. The authors suggest that midwives can safely use cognitive behavioural techniques applied with virtual reality to reduce birth pain. Further studies are required that involve every phase and period of labour as well as with different sample groups. Reading the full article is a must! [Lorna Massov](#), a NZ midwife, is completing a PhD Project at Victoria University Wellington where participants wore headsets for two 10-minute intervals during early and active stages of labour. We await full findings from her PhD sometime this year.

Reference: *Midwifery* 2020;91:102856

[Abstract](#)

Midwifery job autonomy in New Zealand: I do it all the time

Authors: Clemons JH et al.

Summary: This study evaluated midwifery job autonomy in NZ. In 2019, registered midwives participated in an online survey that asked how they felt about using their professional judgement and/or initiative to make decisions autonomously. They responded that autonomy is embedded within midwifery practice in NZ, and self-employed midwives acting as Lead Maternity Carers said that they practice autonomously 'all the time'. Midwifery expertise, skills, and knowledge were intrinsic to autonomy. Collegial relationships could both support and hinder the midwives' autonomy, and a negative hospital work culture could hinder job autonomy.

Comment: It is felt within the literature that autonomy is inadequately defined in midwifery practice and is complex in nature. The findings of this study highlight what autonomous practice and job autonomy means to NZ midwives. The uniqueness of autonomy and decision-making in midwifery practice is that it is shared with the women/whānau. The woman is at the centre of midwifery care and must be appreciated as an autonomous person. When midwifery autonomy is not embraced what opportunities do we have to further discuss this with those critical of the midwifery actions? The authors suggest that being advocates for women is a motivation for midwifery autonomy. To be an advocate, knowledge and skills are required to make shared decisions with women/whānau, including a clear understanding of midwifery scope of practice and choices available to make the decisions. The midwife also needs to be confident in midwifery scope of practice and making decisions which control her practice competence. Collaborative skills are also essential to ensure robust discussion, respect and trust between colleagues. A midwife who is competent, confident, passionate and has a sense of responsibility in providing the best care to women/whānau is likely to deal with institutional and professional challenges effectively within the working environment. A must read if you have not done so already!

Reference: *Women Birth* 2020; published online Sep 19

[Abstract](#)

Gastro-oesophageal reflux disease (GORD) – How to Optimise Management

In the Gastroenterology Session at GPCME 2020 (Virtual), Gastroenterologist Alasdair Patrick discusses how to optimise GORD management and shares a practical primary care treatment algorithm.

There is also a recent Educational Series on GORD with expert commentary by Alasdair.

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Perinatal e-screening and clinical decision support: the Maternity Case-finding Help Assessment Tool (MatCHAT)

Authors: Wright T et al.

Summary: The MatCHAT is a tool designed to provide e-screening and clinical decision support for depression, anxiety, cigarette smoking, use of alcohol or illicit substances, and family violence in pre- and postpartum women under the care of midwives. This study analysed data from interviews with 5 midwives to assess the acceptability and feasibility of the MatCHAT. The midwives reported that the MatCHAT was useful and acceptable. Among the 20 mothers screened, 8 reported substance use, 1 reported depression and 5 reported anxiety.

Comment: Routine screening of perinatal mental health and family violence has been implemented in some DHBs' information technology (Maternity Care Information System; MCIS) since 2014. History about the use of alcohol, substance abuse and use of cigarettes has always been part of initial history taking when a woman registers with a maternity care provider. This study in an Auckland Hospital adapted a well-regarded screening tool (eCHAT) to a MatCHAT that included decision support and a stepped-care management plan for midwives plus access for professional advice if required so an appropriate referral pathway could be offered to women who screened positive. The qualitative findings from a small sample of midwives highlight 3 themes: MatCHAT prototype, midwifery knowledge and barriers to implementation. None of the 20 women who participated provided feedback of their experience of using MatCHAT via an online survey. Three midwives used MatCHAT for screening in pregnancy but none of them used the tool during postpartum care. A must read for midwives, practitioners involved in maternity care, researchers and policymakers to get a full understanding of what enhanced midwives' knowledge, and the multiple contextual barriers to using MatCHAT. If the plan is for all DHBs in NZ to have MCIS for improved quality of maternity care for women and their babies is there a possibility of incorporating MatCHAT or aspects of MatCHAT with MCIS? For further information see [screening tools](#) and [support services](#) available in NZ.

Reference: *J Prim Health Care* 2020;12(3):265-71

[Abstract](#)



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Associations between consumption of coffee and caffeinated soft drinks and late stillbirth

Authors: Heazell AEP et al.

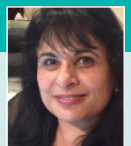
Summary: The Midland and North of England stillbirth case-control study investigated the association between caffeine intake and late stillbirth. 290 cases (women who had a singleton stillbirth at ≥ 28 weeks' gestation) and 729 controls (women with an ongoing pregnancy) were interviewed about their consumption of a variety of caffeinated drinks in the last 4 weeks of pregnancy as well as other behaviours (e.g. cigarette smoking). Multivariable analysis adjusted for confounding factors found that consumption of instant coffee, energy drinks and cola was associated with an increased risk of stillbirth. Caffeine intake was independently associated with late stillbirth (adjusted odds ratio 1.27, 95% CI 1.14–1.43 for each 100mg increment/day). 15% of cases and 8% of controls consumed more than the WHO recommendation (>300 mg of caffeine per day). The population attributable risk for stillbirth associated with >300 mg of caffeine per day was 7.4%. Most of the respondents reduced their caffeine consumption in pregnancy.

Comment: A [NZ Herald 2020 article](#) highlights the controversy over the safe level of caffeine that women can consume, when planning a pregnancy or during pregnancy, due to risk of miscarriage, stillbirth and low birth weight. Other countries (Australia and the UK) and the [NZ Nutritional Foundation](#) suggest that women should limit the amount of caffeine they consume during pregnancy to 2 cups of coffee (<200 mg of caffeine). This study aimed to clarify the mixed evidence on caffeine, especially in the last 4 weeks of pregnancy. It appears some women (1 in 20) increase their caffeine intake, showing a lack of awareness about caffeine consumption and the risks in pregnancy. No association with stillbirth was shown when women consumed filtered or decaffeinated coffee, chai, green tea and hot chocolate. Energy drinks had the highest stillbirth risk, followed by instant coffee and cola, with tea not posing a significant risk as caffeine levels are low. The authors suggest a need for further research to separate the risk of caffeine from that of sugar in cola and taurine in energy drinks. An opportunity is provided for us to reflect on 1) how proactive we are in discussing caffeine intake during antenatal appointments and in sharing credible and supportive information without generating feelings of guilt; 2) are women aware of the amount of caffeine in some of their favourite foods and drinks; and 3) do we encourage women who are unsure to check their caffeine intake during pregnancy by using a [calculator tool](#).

Reference: *Eur J Obstet Gynecol* 2021;256:471-7

[Abstract](#)

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



Dr Nimisha Waller is a Senior Lecturer in the Department 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, NZCOM educator for the Midwifery First Year Practice (MYFP), 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 titled 'How are post-birth reflective conversations experienced by those involved?'

Postponed to Friday 05 – Saturday 06 November 2021

