

Malta Midwives' Journal



Malta Midwives Association

Issue 21

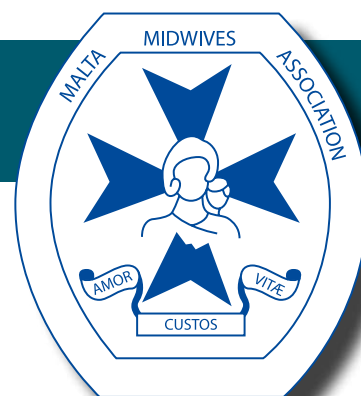
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The views expressed
in the Journal are those of individual
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of the Midwives' Association.

Cover Photo:
**MMA Conference
16th & 17th March 2023**

Editorial

Excerpts from the National Obstetric Information System (NOIS) Annual Report 2021

There were a total of 4420 deliveries reported and registered for the Maltese Islands in 2021. These resulted in a total of 4477 infant/fetal births; this is a slight decrease of 71 births when compared to 2020. The total of live births were 4464 (99.7%) and 13 (0.3%) were still births. 92% of deliveries occurred in Malta and 6.8% in Gozo. The great majority (99.7%) of deliveries occurred in a hospital setting.

Maternal factors

The most common age group at delivery remains the 30- 35 year age group with an average maternal age of 30.9 years. Older maternal age has continued to increase over the past 2 decades, with consistent decrease in the less than 30-year-olds and increase in the 30+ year olds.

The proportion of non-Maltese National mothers is also seen to continue with the increasing trend, with 31.9% of mothers being of non-Maltese Nationality in 2021.

Of all the deliveries in 2021, 50% (2210) were primigravida. There were 55 twin deliveries and no triplet deliveries. A total of 119 mothers were registered as having used some form of assisted reproductive technology including ovaluation stimulation, IVF and ICSI.

Of the total of 4420 deliveries, 53.9% were of spontaneous onset, 29.3% induced onset and 14.5% were planned elective caesarean section, the remaining 2.2% of the deliveries were carried out as an emergency section for arising pathological conditions including pre-eclampsia and antepartum haemorrhage.

Infant factors

A total of 4477 births: more males with 50.9% and 49.1% females. 61.5% of births in 2021 were born by normal vertex vaginal delivery, 4.6% were assisted vaginal deliveries (including vacuum extraction, forceps, breech) and 33.9% were by caesarean section.

The majority of infants born had a birthweight of between 2500-3999g (88.8%). In 2021, 6.6% of babies were born with low birthweight of less than 2500g.

At the time of discharge from hospital 48.2% of infants were exclusively breastfed.

In 2021, 4464 births were live births, and 13 still births. Of the livebirths, 10 suffered early neonatal death and 2 were late neonatal deaths. Total perinatal mortality over the past 20 years has shown an overall decline with 7.3/1000 births in 2000 and 4.7/1000 births in 2021.

Reference:

Gatt, M. (2022). Nois Annual Report, 2021. National Obstetric Information System, Directorate for Health Information and Research. Available at: <https://deputyprimeminister.gov.mt/en/dhir/Pages/Registries/births.aspx>

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Message from the President

Conference Opening Address

Compassion Science Empowerment in Midwifery and Perinatal Care 16th & 17th March 2023

Your Excellency, Distinguished guests, Midwives, Colleagues: Goodmorning, and a very warm welcome on behalf of the Malta Midwives Association. Thank you all for joining us here for today's conference: Compassion, Science, Empowerment in Midwifery and Perinatal Care.

We have been working on this conference for a number of months. Originally, it was planned for 2020, the Year dedicated to recognise the work of the Nurse and the Midwife. But as you all very well know, the pandemic of Covid-19 has put all activities on hold for these last two years. It was a very challenging period for everybody. The pandemic brought hardships on everyone: uncertainties, anxieties, stresses. And amidst these difficulties, babies continued to be born everyday. Midwives and healthcare professionals had to physically continue providing the necessary care. It was definitely, not a ride in the park for the midwives who had to assist labouring women for long hours, while wearing full PPEs. Midwives' together with other health care professionals' dedication, competent care and timely action, ensured that Malta, did not have any mortalities among childbearing women or among midwives. *Other countries around the world were not so lucky.* For this, we are forever grateful to all the midwives and health care providers for their outstanding dedication and commitment. My sincere congratulations to ALL.

We have learnt many lessons during the course of the pandemic. A lesson I learnt was how much we need each other. Midwives cannot work in isolation. The pandemic has shown us that when organisations, entities, and people collaborate and cooperate towards a common goal, good things will prevail. Hence, today, we can say we have hope that the future looks brighter than 2 years ago.

'Compassion, Science, Empowerment in Midwifery and Perinatal Care' is a challenging and inspiring title. It marries well with the 2023 theme of the International Confederation of Midwives' (ICM) Together again: from Evidence to Reality, which I am sure that Dr Franka Cadee will be talking about. We cannot negate that education and research provide the backbone of any profession. Education and research are the keys that help us to develop a critical consciousness, to appreciate, and to recognize that we can change the status quo – the culture of silence.

In a progressive world, midwives need to be open to new realities and adapt to change. Midwifery roles have developed and expanded considerably over the years. We are working towards ways that extend far beyond the expectations of a midwife 20 years ago. Supporting midwives to rise to new challenges need an enabling environment. Harmonising the relationship and working in parallel between education and practice will positively impact the health care services and improve outcomes.

I am aware that a number of midwives are carrying out research in a variety of areas that are either directly or

indirectly related to midwifery. A number of presentations at this conference today and tomorrow are testimony to this.

I ask, how can we improve the dissemination of local research findings and translate these to policy and practice? For research to be of value, it needs to be adapted and/or adopted, and shaped within our local practice contexts. Simply providing the findings is **Not Enough**. The dissemination of research and applying it to the local context is vital, otherwise *it will be just another book on the shelf*. This highlights the pivotal need for a midwife researcher post, to be able to carry out midwifery research, do audits, evaluate practices & outcomes, to discuss and to influence, and implement evidence-based practices.

Undoubtedly, we all aim at delivering high quality maternity care. Women, and their families nowadays, deserve and want more from childbirth than simply emerging from the process unharmed. Childbirth is expected to be a memorable and rewarding experience filled with love and fulfilment by all women. However, one would ask, what are our opportunities and challenges to give all women this experience? What do our women/families expect from maternity services? Reflections and the mothers' experiences on intrapartum care will be presented during tomorrow's workshop which was carried out by the Positive Birth Movement. We need to listen to women/mothers, and **partner** with them, if we need to improve our maternity care.

Women/mothers are key to bringing change to maternal services. However, change does not come quickly or easily. It is a gradual process, one that requires patience, understanding, and nurturing. First, it is important that as midwives we acknowledge that we can make a difference in the lives of women and their families. Secondly, that our community is aware of our role as midwives, therefore, **we** need to highlight our scope of practice, **we** need to make it clear & public. However, this is not an endeavour for a single midwife, or a couple of midwives. We need to collectively be proactive. We have an opportunity this afternoon, to discuss with a panel of leading midwives, who will be discussing their vision for midwifery in Malta in line with ICM framework. I sincerely hope, that this afternoon's forum, will help us put forward our vision for the future for maternity care & midwifery in Malta. I encourage you to raise your questions during this afternoon's forum, and let the panel that is representing different midwifery entities know about your concerns. Do not hesitate to put forward your suggestions. We need to present ideas and propose developments to discuss and debate.

Today, it is a great honor to have with us Her Excellency, President Emeritus, Dr M'Louise Coleiro Preca who gladly accepted to address this conference. Her Excellency is the Founder of the Malta Foundation for the Wellbeing of



Society, President of Eurochild, Goodwill Ambassador for United Nations to just mention a few of her long portofolio that she carries. Your Excellency, your support and presence at our conference is very appreciated.

We also have the honor to have Dr Franka Cadee, President of ICM who gladly accepted to fly to Malta. She has worked in many settings of midwifery care, with many years of experience in strategy and policy development, advocacy and leadership. We look forward to hearing her career pathway and insights from a global organisational perspective.

I would like to extend my appreciation and gratitude to all the speakers local and foreign, that will be participating in this 2 day conference. I am sure that they have a busy schedule but have found the time, to be with us to share their research and studies. I encourage many more midwives to take the challenge and present their studies in future conferences.

Finally, allow me to thank the committee for working collectively to hold this conference. And thank you all for making yourselves available to attend. Your participation empowers the committee to continue to strive for advancements in midwifery, and better maternal services for women and their families in Malta and Gozo.

Pauline Fenech

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Treasurer's Message

5th May is just round the corner. That day we celebrate Midwives' Day. So why should that particular date make a difference in our lives? The Association calls on all midwives to participate in a social event. We do this out of recognition for the dedication shown by midwives throughout the year. At times, our input is hardly recognised except perhaps by the couple whom we serve. So the Association steps in by offering a treat at its own expense. Even though pressures on the financial situation continue to rise, the MMA Committee feels that it cannot and should not forgo this annual event. So come and enjoy and have time to meet your colleagues in an informal setting.

Since a number of us will be on duty on the day, as usual, the Association will make sure of sending each and every midwife on duty in Malta and Gozo a token of appreciation.

May 5 happens to be a day when other anniversaries occur – Europe Day to cite just one example. Hence Midwives Day is not necessarily top of the agenda for the media and the general public. We therefore appeal to all our members to pass the message round. The Anniversary should serve as a reminder to all, not least other hospital management and staff, that the role of the midwife is crucial as we nurse the coming into this world of boys and girls who will shape our future generations.

At times, birth is taken as a given, with little thought of the nurture and care that is required throughout the pregnancy and at the moment of birth.

The Association does not exist in a vacuum. It only makes sense if there are members making up this organisation. Hence, as usual, I thank all those who pay their membership as this helps us balance our finances. On this Day, we should also, in particular, thank those midwives who, in some way or another, offer their services, either by being members of the Committee, or in some other tangible way.

But there are never enough colleagues to meet the challenges. In this day and age, parents crave for more information and gone are the times when one can be a generalist – we need midwives who can deliver talks and exercises on specialised aspects of pregnancy. To-date, parents have been satisfied with the MMA's courses on offer and it is evident that our best advert is the word-of-mouth approach, whereby parents pass on the message that the MMA courses offer value for money. But we cannot rest on our laurels.

So lets us mark the upcoming Midwives Day, not just by participating in the social event, but, more importantly, to offer our knowledge to parents by enrolling on the MMA's list of service providers.

Doris Grima



Infertility and Mental Health

Having children is known as an essential human desire, therefore infertility may cause a great deal of psychosocial impairment. Infertility is a life crisis affecting people from all around the world with an estimate of 8-12% of couples (Kumar & Singh, 2015), and this rises to one in four couples in some developing countries according to the World Health Organisation (WHO, 2014).

Infertility is defined as the failure to establish pregnancy after 12 months of regular, unprotected sexual intercourse or due to an impairment of a person's capacity to reproduce, either as an individual or with his/her partner (Zegers-Hochschild et al., 2017). Women who can get pregnant and have recurrent miscarriages are also considered to be infertile (Vander & Wyns, 2018).

Infertility is becoming increasingly common, which may be partly due the fact that pregnancies are delayed until later in life (Inhorn & Patrizio, 2015). The percentage of people seeking infertility treatment has risen dramatically over the years because of factors such as postponement of childbearing in women, evolvement of more advanced infertility treatment techniques and increased publicity of these available therapies (Bolvin, Bunting, Collins and Nygren, 2007).

This challenge can have a profound emotional and physiological impact on couples trying to achieve pregnancy, often exacerbated by the complex fertility treatment pathway, which can be daunting to navigate. As is well documented in the literature (Abdishahshani et al., 2020, Hasanpoor-Azghdy et al., 2014, Masoumi et al., 2019), infertility diagnosis and fertility treatments can have significant impact on the mental health of patients. Infertility is often a silent struggle, with patients reporting feelings of depression, anxiety, isolation, and loss of control. Depression levels in patients who are struggling to conceive have been compared with patients who have been diagnosed with cancer (Rooney & Domar, 2018). Despite the increasing number of infertility, a lot of infertile patients do not share their story with family and friends, thus increasing their psychological vulnerability. The inability to become pregnant naturally can cause feelings of shame, guilt, and low self-esteem. It is not just the infertility itself that can cause distress, but the hormone therapy can have a mental impact, effecting the woman's mood, causing sleep disturbance, disruptions in sex drive, hot flushes, depressed mood, and anxiety (Accort, 2022).

When a round of fertility treatments proves to be unsuccessful, women and couples can experience deep feelings of grief and loss. Some patients will get pregnant



quite easily from ART, conceiving on their first cycle, however this is the exception, as for many it may take years, or not happen at all. The cause of infertility is not always clear; it may be an underlying health condition such as polycystic ovarian syndrome (PCOS), endometriosis, or male factor infertility, or the frustrating diagnosis of unexplained infertility (Karimzadeh et al., 2017). Knowing the root cause of infertility can decrease the burden for patients as they understand why this may be happening to them; while still heart broken, they can place "blame" on something. Patients with unexplained infertility do not know why they cannot conceive, and they may become obsessed with this diagnosis. In fact, Karimzadeh et al (2017), found out that there is a prevalence in unexplained infertility for women to display behaviours of obsession. Changes

to lifestyle, such as exercise, diet, caffeine intake, and sleep may be changed to reverse the diagnosis. In one study of 200 couples who visited a fertility clinic found that half of the woman and 15% of men said that infertility was the most upsetting experience of their lives (Accort, 2022).

Studies also show that relationships with partners are reported to become less stable with increasing duration of infertility treatment courses (Tao et al., 2012; Chandra et al., 2000, Chachamovich et al., 2010, Lee et al., 2001). Continuing with treatment is reportedly a source of dispute within couples, due to the substantial psychological, emotional, physical, and financial costs involved (Daniluk, 2001). This can have serious implications for mental and social well-being, especially as the partner is seen as the most important source of support during the infertility treatment. (Tao et al., 2012). Social engagement is also thought to be impacted by stigmatization of infertility by others and feelings of inferiority in comparison to peers (Wirtberg et al., 2006).

Patients who undergo assisted reproductive treatment (ART) are at significant risk of experiencing psychiatric disorders, and therefore it is important to recognize, acknowledge, and assist these patients as they cope with their infertility diagnosis and treatment. Many research studies demonstrate that tailored support throughout the infertility journey may reduce the mental and relational impact of infertility (Boivin et al., 2022, Ying et al., 2009, Frederisen et al., 2015). Psychological and emotional support have routinely been found out to decrease feelings of anxiety and a reduction in depressive symptoms. Reductions in psychological distress through mental health support and treatment may reduce engagement in lifestyle factors (e.g., smoking, alcohol use, decreased rates of intercourse, etc.), which may

interfere with pregnancy chances (Gameirero & Boivin, 2013). Psychological stress has also been identified as the major reason for discontinuing infertility treatment, therefore it is more important to understand the patient/s experience of infertility and its treatment, to help in coping with the difficulties that may arise (Moller & Fallstrom, 1998).

Conclusion

A diagnosis of infertility can be a tremendous challenge and burden for patients, and the pain and suffering are a major concern. Incorporating psychological interventions into routine practise at ART clinics is beneficial, and this support should be available throughout the patient's journey. As outlined, infertility causes a lot of stress and recent reports provide evidence that stress could affect treatment and psychological support has the potential to decrease anxiety and depression and may lead to significantly higher pregnancy rates.

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THE MALTA MIDWIVES
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The Use of Simulation Training to Improve Skillset and Patient Care Outcomes

The use of simulators and simulation strategies is becoming increasingly sought out internationally as a method for training healthcare professionals to improve level of patient care, and in turn patient outcome. It has been shown to be superior to clinical teaching using the traditional approach and has encouraged us to change the way we teach^{1,2}.

The practical aspect of teaching has always been at the forefront of university studies such as those in the healthcare profession. However, simulation teaching goes a step further by providing realistic scenarios that allow for safe practice of skills without affecting the patient. The application of scenario-based simulation training could help bridge the gap between theory and practice as well as prepare health professionals for efficient teamwork³. Furthermore, simulation based training is often created and formulated to help improve and maintain skills of the workforce, not just at student level, but allows for practice on high risk yet low occurrence scenarios.



Simulation based training gives professionals a safe and risk-free environment in which to develop their skills and competencies as well as giving them an opportunity to work on teamwork, leadership, communication, and other non-technical skills. Having the opportunity to tackle scenarios that are very uncommon allows the candidate to gain confidence on a skill they cannot normally practice. These infrequent scenarios are very often the ones that bring about the most chaos, usually because they are serious, life-threatening scenarios, where without inner confidence and the appropriate team dynamic could lead to the detriment of the patient².

The level that can be achieved by the trainee is also greatly affected by the type of simulation training offered. With newer technology it is easier to have high fidelity simulation sessions, which leaves less to the imagination of the candidate, as the situation is portrayed relatively realistically. High fidelity increases the engagement of the candidate by making the scenario more relatable. With good quality feedback from the equipment itself, the candidate would not need to ask the assessors if certain

actions were effective or not, getting a response in real-time. High fidelity simulation-based training has been proven to show positive improvements to the quality-of-care patients receive and the skill level of professionals and its current limitations are basically resource and cost related which, if overcome, are warranted to provide the new standard for health education⁴.

Hybrid simulation training also makes use of human subjects to further improve the realism within the simulation attempting to achieve better immersion by the learners. This method also appears to be better in terms of teaching non-technical skills together with the technical skills although further investigation into this type of learning would be ideal⁵.

The development of teamwork and team dynamics improves patient safety by increasing awareness and knowledge of all members of the team. Teamwork may improve attitudes that lead to dismissal of hierarchical roles in a manner where all healthcare professionals

can identify and point out incorrect methodologies or medication doses through improved communication, situational monitoring and assessment as well as mutual support within the team structure⁶.

An integral part of simulation training, whichever method is used, is an appropriate debriefing session. Debriefing allows candidates to review the scenario they have just experienced, vocalise the thought processes at the time, identify any tasks that remained unmet and discuss and learn from any mistakes. Assessors, or facilitators, who have run the scenario, lead the debriefing to allow for reflective learning¹. Simulation training allows for healthcare professionals

to follow a concept of 'train-practice-debrief-repeat' which provides learning in all stages.

It was found that taking part in the Newborn Life Support simulation course significantly improved candidates practical skills as well as giving them increased confidence in their abilities and skills across different professional groups^{7,8}. Notwithstanding this, a few studies did show that while there appeared to be improvement in candidate performance, and feedback is positive, this was not always reflected through statistical significance, possibly due to the low level of comparison between studies, as well as the type of data collected for assessing their effectiveness. While some studies have pointed out that despite the promise that simulation training appears to provide, there may still be need for further revision and exploration of these methods to achieve desired patient safety measures, ideally having a more standardised form of evaluation for these simulation events^{9,10}.

There is also a degree of dilution on the effect achieved through these simulations over time, which has

not yet been studied enough, and forms the basis for re-certification encouraged by each awarding body after a number of years. In one study, this dilution of skillset was observed even after 12 months¹¹, which further indicates the need for revision of such skills and simulations more frequently than the minimum recertification dates to keep skills up to an adequate level.

Nonetheless, simulation training using human patient simulators has been noted to improve healthcare professionals critical thinking and problem solving skills, allowing them to attain further skill sets as well as become more efficient in their practice^{12,13}. The establishment of simulation training courses which follow a standardised teaching and evaluation procedure, where instructors have also been trained through a specific setup on what to look out for from candidates undergoing training helps to provide better outcomes.



Neonatal resuscitation is one of the first established simulation training. It is a high intensity situation which is also of high occurrence where healthcare professionals must be confident and well prepared for such situations, even when they are least expected. Despite being of higher occurrence, these situations still do not allow all staff to have adequate exposure and practice to build confidence to tackle such a situation, hence the development of various resuscitation programs throughout the years. The European Resuscitation Council nowadays recommends simulation training and has instituted their own programme¹.

It has also suggested that simulation-based training should be used to teach parents, or primary caregivers, of infants with life-long repercussions after NICU admission to be able to handle emergencies at home until professional help arrives¹⁴. In some respect, this is carried out in some format locally during basic life support training provided to the parents. There is the possibility to explore involving more simulation practice and further tasks within this teaching moment.

Simulation based training has also been used within the obstetric field, and similar to results observed in neonatal scenarios, there has been an improvement in the management of birth practices and emergencies and would benefit even more with further training scenarios^{5,11}. While the Advanced Life Support in Obstetrics course was held locally on a couple of occasions, regrettably this

was not continued. This was in fact lamented by those who attended who could vouch for the positive effect that the training had provided on their practices.

Simulation training is also used within the health sciences teaching facilities for midwifery students, and within the hospital it has also been carried out through various courses such as those organised by the Malta Resuscitation Council such as Neonatal Life Support, internally-organised simulation mornings by the Neonatal Intensive Care Unit, as well as the latest course brought from overseas organised by the Resuscitation Council UK, Advanced Resuscitation of the Newborn (ARNI).

The ARNI course was launched in the UK in 2016 successfully with the aim of providing a new assessment model that provides qualitative and quantitative feedback on various scenarios that are likely to occur within the neonatal intensive care unit. It has been proven to be successful and has achieved what it had sought out to do, essentially improve participant confidence and performance across various areas, developing situational awareness and communication methods to improve the unit practices to the benefit of the patient^{15,16}. The course was carried out locally for the first time last November with a full crew of fully qualified UK instructors to guide staff undertaking the course.

The course enabled nurses, midwives and doctors alike to get hands-on experience with certain skills such as intubation, chest drain insertion, face-mask ventilation, communicating with parents and many various scenarios of advanced resuscitation. Apart from being very informative, it allowed all candidates to develop better team dynamics and understanding of the various scenarios that allows for patient care to be carried out more fluently.

The skills learnt within the course have already been put to good use within the unit, with midwives and nurses assisting doctors on certain procedures enabling the other doctor on call to attend to other ward situations. Furthermore, it has enabled candidates to have better recognition of patient deterioration, and to show initiative in taking action for patient care, which led to improved patient safety when carrying out procedures.

Research into simulation training has shown that retention of taught skills is not always of an adequate level, and repetition of such training should be carried out more frequently, ideally less than every 2 years². This is why the NPICU as a unit has started to hold yearly simulation mornings that enable each shift together with the doctors to develop and maintain teamwork and various skills in different scenarios to improve retention of skills achieved through simulation courses.

There is a good number of staff from the Neonatal Intensive Care Unit that have achieved instructor status for different simulation courses and have received appropriate training on how to teach simulation sessions. Overall, the unit is geared towards achieving a better standard of care through improved systems, skillsets and team dynamics.

The next simulation course that some of the staff are preparing for is the Neonatal Life Support which is a one day training course which will be held in April, repeated over 2 days. All staff working in the midwifery sector and



neonatal unit are encouraged to attend in April or register their interest on the Malta Resuscitation Council for the next set of courses probably held in October.

Newborn Life Support Course




TWO
One-day courses:
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The NLS course is designed for any healthcare professional involved in the delivery and care of the newborn infant including midwives, nurses and doctors.

NLS is a full day course featuring lectures, skills training, demonstrations and simulations.

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<https://www.resus.org.mt/newborn-life-support>

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Chronic Hypertension in Pregnancy

Introduction

In 2015, the World Health Organization (WHO) illustrated 17 global goals, one of which to, 'reduce maternal mortality' and end preventable deaths of newborns, and children under 5 years of age, by the year 2030.¹ Hypertensive disorders of pregnancy (HDP) represent one of the most significant complications of pregnancy, effecting roughly 10% of pregnancies worldwide and contribute significantly to maternal and perinatal morbidity and mortality.^{2,3} In fact, researched data pointed out that HDP alone account for over a third of maternal deaths and contribute to half of all maternal deaths when in conjunction with other comorbid medical conditions, such as diabetes and obesity.^{4,5,6}

HDP cover a spectrum of conditions, which includes chronic hypertension (prior pregnancy or before 20 weeks gestation), gestational hypertension (occurring after 20 weeks gestation), and preeclampsia/eclampsia.⁷ The risk factors that are likely to contribute in the increased incidence of HDP are: nulliparity, maternal age, increased body mass index, multifetal gestation, increased body mass index, pregestational diabetes and chronic hypertension.^{8,9}



Chronic hypertension

Chronic hypertension is defined as blood pressure greater than or equal to 140/90 mmHg recorded prior to pregnancy, or before the 20th week of gestation.⁷ Based on small studies, including publications from more than 20 years ago,¹⁰ it is estimated that chronic hypertension complicates between 1% to 5% of all pregnancies, in which 20% to 30% of these women go on to develop superimposed pre-eclampsia.^{11,12,13,14,15} However, the recent demographic shift, meaning women postponing childbirth into more advancing age (30s and 40), suggest, that chronic hypertension may be an increase clinical problem.^{16,17} In addition to this, a pathological basis of infertility like polycystic ovaries and endometriosis must be considered as a cause of, or in correlation with, hypertension.¹⁸ Unfortunately, racial disparities are also shown to play a role in the incidence of chronic hypertension, due to late entry into clinical care.^{19,20} Factors that may influence the latter, are women's personal narrative of institutional racism, in both accessing and receiving prenatal care.²¹

Pregnancy is frequently the first time when chronic hypertension is diagnosed by midwives and obstetricians.²² Although, there is little evidence on treatment initiation thresholds for chronic hypertension in pregnancy, NICE guidelines (2019) based their recommendations on the values specified in the recent control of hypertension pregnancy study (CHIPS), where treatment should be offered to pregnant women with sustained systolic blood pressure of 140mmHg or higher and sustained diastolic blood pressure of 90mmHg or

higher.²³ Overtreatment may cause adverse perinatal outcomes resulting in placental hypoperfusion,^{24,25} Hence, a target blood pressure of 135/85mmHg should be aimed for.²³ The most commonly used oral agents to treat severe chronic hypertension in pregnancy are: methyldopa, labetalol and nifedipine.²⁶ Methyldopa has been used for pregnancy hypertension since the 1960s¹⁶ and has the longest track record in pregnancy for fetal safety.²⁷ However, methyldopa is not a potent blood pressure lowering agent and with its side effects of sedation and impaired sleep patterns, can limit its use. On the other hand, Labetalol (combined alpha-blocker and beta-blocker), is also a safe drug to use in pregnancy. It is prescribed twice a day, a different dosing schedule than methyldopa²⁸, particularly for severe hypertension.²⁵ Labetalol is becoming one of the favoured therapies for hypertension in pregnancy. Calcium channel blockers (CCBs), nifedipine in particular, also control BP of chronic hypertension in pregnancy and reduce the incidence of severe hypertension without an increase in adverse perinatal outcome.²⁹ The choice of treatment should be based on pre-existing treatment, women's preferences, side effect profiles and maternal/fetal risks.²³

Moreover, latest recommendations indicate that intake of low-dose aspirin daily (75-100mg) helps in preventing preeclampsia among women with chronic hypertension.^{23,30,31} However, one should keep in mind that in the general medical literature, studies have reported that adequate antiplatelet effects are not achieved in up to 40% of patients receiving aspirin, suggesting that many individuals are aspirin resistant or non-responders.³²

Furthermore, women with chronic hypertension should be monitored with serial ultrasonography for fetal growth, amniotic fluid volume assessment and umbilical artery doppler velocimetry at 28 weeks, 32 weeks and 36 weeks, with intervals dependent on the severity of hypertension, comorbidities and obstetric history.^{23,26} Testing of placental growth factor (PLGF) in singleton pregnancies between 20 weeks and up to 35 weeks is also recommended to help rule out pre-eclampsia²³ in chronic hypertension women. Ruling out pre-eclampsia, has also the potential of reducing unnecessary hospitalization. With chronic hypertension, planned early birth before 37 weeks should not be offered to mothers whose blood pressure is lower than 160/110mmHg, with or without hypertensive treatment, unless there are medical indications.²³

Severe pre-eclampsia

The presence of mild-to-moderate pre-existing hypertension (blood pressure, systolic blood pressure 140-159 or diastolic blood pressure of 90-99mmHg) increases the likelihood of pre-eclampsia. The latter, is defined as a multiorgan disease process characterized

by hypertension and the coexistence of the following new-onset conditions: proteinuria, haematological complications, neurological complications, uteroplacental dysfunction, renal insufficiency and impaired liver dysfunction.²³ A single severe feature in combination with hypertension is sufficient for the diagnosis of mild or severe pre-eclampsia.²³

Severe pre-eclampsia is characterised by severe hypertension, of blood pressure values above 160/100mmHg that does not respond to treatment, and is associated with ongoing or recurring severe headaches, visual scotomata, nausea or vomiting, epigastric pain, oliguria and severe hypertension, failure of fetal growth or abnormal doppler findings as well as progressively deterioration in laboratory tests such as rising creatinine (protein:creatinine \geq 30mg/mmol), or liver transaminases, or falling platelet count (HELLP syndrome).²³ The latter can occur in less than 1% of all pregnancies, but in 20% complicated by preeclampsia with severe features.²⁶ ²⁹ ³³ Diagnosis is challenging because symptoms can impersonate those of other illnesses. ³⁴ ³⁵ Clinicians must consider HELLP syndrome in patients who do not have classic preeclampsia symptoms because, interestingly, 12% to 18% of women with the condition are normotensive and 13% do not have proteinuria.³⁶ ³⁷

The presence of these symptoms and signs, constitutes a medical/obstetric emergency, requiring admission to hospital and a multi-disciplinary approach to management.¹⁴ Treatment goals are: lowering blood pressure, fluid management, seizure prevention to prevent maternal end-organ damage, and expediting delivery based on disease severity and gestational age.²⁶ In an acute setting, or when delivery is expected within the next 48 hours, intravenous agents, such as labetalol or hydralazine are the drugs of choice. Due to potential side effects of hydralazine, being hypotension, oliguria and foetal distress,³⁸ labetalol is increasingly viewed as safer agent for inpatient management of hypertension. However, with inadequate BP control, hydralazine remains commonly used, as most obstetricians are quite familiar with its pharmacological actions and find its side-effect profile acceptable.⁷ The NICE guidelines (2019) advise the consideration of using up to 500ml crystalloid fluid before or at the same time as the first dose of intravenous dose of hydralazine in the antenatal period.

Excessive fluid administration can result in pulmonary oedema and ascites, whereas too little fluid can exacerbate intravascular volume depletion and end organ ischemia. Hence, strict intake/output charting should be maintained.³⁹ Fluid of 80ml/hr and 30ml urine output per hour should be maintained.²³ Severe headaches, visual disturbances and hyperreflexia may signal impending eclamptic seizure. Eclampsia is the convulsion form of pre-eclampsia. The prevalence incidence of eclampsia is 0.5% of patients with mild pre-eclampsia and 2-3% with severe pre-eclampsia.⁴⁰ The most feared complication and cause of maternal death in eclampsia is stroke.⁴¹ Magnesium sulphate infusion, helps prevent eclamptic seizures.⁴² Charting vital signs are important because

magnesium toxicity can lead to respiratory paralysis, central nervous system depression, and cardiac arrest. Women with normal renal function do not require routine serum magnesium testing: however, testing should be performed every 6 hours in those with absent reflexes, elevated creatinine levels, or decreased urine output.³⁶ A course of antenatal corticosteroids and magnesium sulphate in line with the NICE guidelines on preterm labour and birth, should also be administered.²³

While treatment of hypertension may improve the risk profile of the mother and therefore delay delivery, it does not cure pre-eclampsia, nor does it delay the progression of pre-eclampsia.⁴³ The only definite therapy for pre-eclampsia may be delivery of the fetus, to prevent adverse events in pregnancy, labour and puerperium. In pre-eclampsia, induction of labour should be pursued within 24-48hrs⁷ ²³ ²¹ ⁴⁵ ⁴⁶ at greater than 36-37 weeks gestation to improve maternal outcomes. If it is not contraindicated,⁴⁷ attempted vaginal delivery is recommended in women who have preeclampsia with severe features. However, quoting NICE guidelines (2019) senior obstetricians

should 'consider operative or assisted birth in the second stage of labour for women with severe hypertension, whose hypertension has not responded to initial treatment'.

In women with severe pre-eclampsia, especially those before 32 weeks gestation, the decision regarding the timing of delivery is more complicated. Immediate delivery is not recommended because of an increased risk of neonatal respiratory syndrome.⁷ ⁴⁸ While continued surveillance may be reasonable in those with mild pre-eclampsia, many women are not candidates for expectant management and require urgent delivery.⁴⁹

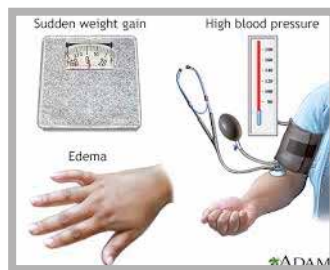
Quoting the NICE guidelines (2019) 'threshold for considering planned early birth control could include (but are not limited to) any of the following known features of severe pre-eclampsia:

- 1) Inability to control maternal blood pressure despite using 3 or more classes of antihypertensive in appropriate doses
- 2) Maternal pulse oximetry less than 90%
- 3) Progressive deterioration in liver function, haemolysis or platelet count
- 4) Ongoing neurological features, such as severe headaches
- 5) Placenta abruption
- 6) Reversed end diastolic flow in the umbilical artery doppler, non-reassuring cardiotocography or stillbirth.'

Given the complexity of such cases, including the risks to both mother and fetus, the decision must be made on an individual basis after consulting with the mother, whilst, balancing the risks of prematurity against worsening preeclampsia.⁵⁰

Long-term effects

Although the exact aetiological mechanism is not known, epidemiological evidence suggest that pre-





eclampsia is also associated with the likelihood of long-term effects on the health of the women. Compared to normotensive pregnant women, the risk of a major adverse cardiovascular event in chronic hypertension and pre-eclampsia is increased to approximately 1.7 times and 1.5-3.0 times respectively.²³ The increased incidence risk of stroke is up to approximately 2-3 times in pre-eclampsia and 1.8 times in chronic hypertension. Also, it has been found, that pre-eclampsia occurring during a first pregnancy increased the risk of future end stage renal disease.⁵¹

Notably, research shows that treatment of physical symptoms should not be the only concern in caring for women with hypertensive disorders in pregnancy.⁵² From the psychological aspect, women revealed the persistence of trauma or psychological problems after hospital discharge.^{3 54 53 55} Although the psychological condition of women recovered with time, 25% of women continued to have a poor psychological condition 1 year after giving birth.³ As a result, women expressed their preferences of not having more children.^{55 56 57} The reasons being: fear of recurrence from HDP, prolonged hospitalization and treatment.⁵⁵



Given the mentioned long-term impact on maternal mortality and morbidity, hypertensive disorder is a public health concern^{58 59 60 61} along with its associated costs.^{13 63} A follow-up system for sustaining women's lifelong health through sharing of information and continuity of care should be considered.³

Prevention

Each year, nearly half of all pregnancies throughout the world, are unplanned.⁶³ Hence, women of reproductive age with target organ damage, pre-conception therapy is of outmost importance in helping them achieve optimal timing of pregnancy in relation to the optimal control of their condition.⁶³ The goals, should be to evaluate for end organ damage to adjust medications as necessary, to discuss appropriate lifestyle modifications and to consider secondary cause of hypertension.³⁵ These will be discussed in further detail below.

Data from the national health and nutrition examination survey (1999-2008) indicates that the prevalence of hypertension in women aged 20-44 years is 7.7% and an estimated 4.9% of women use anti-hypertensive pharmacological therapy with the two most common categories of medications used are diuretics and angiotensin (ACE inhibitors), 49.9% and 44.0% respectively.⁶⁴ Given the teratogenic potential effects of ACE inhibitors during pregnancy such as intrauterine growth restriction, neonatal renal failure, oligohydramnios and death, careful counselling and contraception advice must be offered.^{14 26 65} Ideally, if hypertensive women are planning to become pregnant, this class of medication should be withdrawn.^{7 25} Similarly, NICE guidelines (2019) deemed the use of Thiazide or Thiazide like diuretics, as a controversial issue associated with potential harmful effects on both maternal and foetal outcomes, and therefore should be

stopped and alternative drugs should be discussed.

Obesity is associated with an increased risk of HDP, in particular pre-eclampsia (2-3 fold increase).^{66 67 68} Hence, encouraging a healthy lifestyle, including weight loss prior pregnancy is deemed important. This is reflected in the study conducted by Adane et al., (2017) where pre-pregnancy weight gain (not the baseline weight) was associated with an increased risk of hypertensive disorders in pregnancy, whereas pre-conceptual weight loss has the potential to reduce the risk of hypertensive disorders.⁶⁹ Similarly, research shows that, relatively small amounts of pre-conceptual weight loss, but also excessive pre-conceptual weight loss (bariatric surgery) in overweight and obese women is effective in the reduction of the risks of HDP, PIH and PE.⁷⁰ In women who had pre-eclampsia, a healthy BMI of 18.5-24.9kg/ m² is advised, for future pregnancies (NICE, 2019). Due consideration, however, needs to be given when making recommendations to maintain calorie intake and prevent injury.^{72 73 74} NICE guidelines (2019) recommend healthcare professionals to advocate the same advice on exercise, work and rest to women with chronic

hypertension or at risk of hypertensive disorders during pregnancy, as healthy pregnant women.²³

Although, further research is needed to determine whether pre-pregnancy calcium supplementation is recommended for hypertensive women,²⁵ calcium supplementation of 1.5 – 2 g daily in the second half of pregnancy is currently advocated by WHO (2013). This also dates back to 1986 in the Cochrane review conducted by Hofmeyr. The latter confirmed the benefits of calcium supplementation during the second half of pregnancy in prevention or mortality associated with pre-eclampsia. However, vitamin C should not be recommended as the sole supplement in the aim of preventing HDP during pregnancy.²³ Similarly, an increment of 25-hydroxyvitamin [25(OH)D] (OH) vitamin D concentration during pregnancy is also associated with lower odds of pre-eclampsia regardless of early pregnancy vitamin D status.⁷⁴ All pregnant women should be supplemented with 10 micrograms of vitamin D per day (NICE, 2010).

Although salt consumption in both general and hypertensive population is believed to significantly contribute to change in blood pressure, there are paradoxical studies in pregnant women and the risk of pre-eclampsia.^{75 76} Dietary intake of sodium and potassium in pregnancy remains a controversial matter for clinicians.²⁵ Salt restriction during pregnancy solely to prevent pre-eclampsia is not recommended. However, lowering amount of salt in their diet is not contraindicated.²³

Women with long term high blood pressure who seek preconception counselling, particularly in the presence of resistant hypertension, hypokalaemia (potassium levels <3.0 mEq/l), elevated serum creatinine level (>1.1 mg/dl) and family history of kidney disease should be screened for underlying secondary causes (55, 1) due to increase damage in the vasculature,⁷⁷ myocardium, kidneys⁷⁸ and other organs.⁷⁹ Healthcare professionals

should also keep in mind that risk factors for maternal hypertensive disorders extends beyond physical cause and are influenced by one's surrounding environment. Considering the increasing rates of maternal mortality,⁸⁰ this is of paramount importance. A priority should be placed on the development of interventions that are accessible to women located in both resource rich and resource poor settings during early pregnancy to address cultural values, beliefs, racial bias, socioeconomic status and discrimination in both the outpatient and clinic setting, by providers.³⁵



The majority of women with controlled chronic hypertension under appropriate management will have successful outcomes. However, unfortunately, the majority of women who become pregnant do not know their blood pressure status and do not start hypertension management before pregnancy or when planning to become pregnant. From the physiological aspect, undiagnosed hypertensive women may appear normotensive in early pregnancy because of the normal fall in blood pressure, commencing in the 1st trimester.²⁵ This may mask pre-existing hypertension and when blood pressure is recorded later in pregnancy, it may be erroneously interpreted as gestational hypertension.²⁵ Self-monitored blood pressure readings may have a role in identifying those in this high-risk group as well as those with white coat hypertension⁸³ and to identify true chronic or gestational hypertension.⁸⁴ The ACOG (2013) recommended the use of home blood pressure monitoring along with increased surveillance in the form of more frequent clinical visits to assess lab values and fetal growth for women with diagnosis of low-risk chronic and gestation hypertension. In addition to at home blood pressure cuffs, digital weight scales phone oximeters and mobile applications are additional technological solutions currently being utilized as interventions to monitor for hypertensive disorders among pregnant women. Despite current use, further evidence is required to support the use of these technologies as effective management methods for hypertensive disorders during pregnancy.⁶ Accurate blood pressure measurements in pregnancy is essential for the appropriate management and treatment of patients.⁸⁵

Conclusion

The global research consensus for women presenting with hypertensive pregnancy disorders, is that they should have a comprehensive plan of care, which includes prenatal counselling, frequent visits during pregnancy, timely delivery, appropriate intrapartum monitoring and care, and postpartum follow up.⁷ However, research indicates that hypertension in pregnancy still continues to cause substantial maternal morbidity, stillbirth and neonatal death and perinatal morbidity.²³

One should keep in mind that the important stakeholders are the women themselves.⁵³ This is highlighted in the analysis from the qualitative narrative conducted by Shree et al., (2011). This presented women's desire of more involvement in their care, needs of improvement in management/counselling and wanting

additional information. The lack of information led to inaction on their part or misattribution of symptoms.⁸⁶ This is also reflected in the scoping review of Sakurai et al., (2022), where some women felt assured and well informed by the care provided by HCP. But, at the same time, women needed more information and were occasionally disappointed with the attitudes of healthcare professionals and how they communicated. Berry et al., (2017) quoted that 'The power imbalance in the provider patient relationship may disempower patients' ability to negotiate their health, especially in high stakes situations when reliance on the provider as expert is increased and authentic shared decision making becomes almost impossible'. Hence, health care professionals have the responsibility to know the latest information, use optimal management strategies, improve their skills and acquire knowledge pertinent to the women's condition.⁵²

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Pregnancy and Breastfeeding Following Bariatric Surgery

What is bariatric surgery?

When other weight loss attempts have failed, bariatric surgery (BS) offers a successful alternative for weight loss ⁽¹⁾. More commonly known as 'weight-loss surgery', BS involves making changes to your digestive system to help you lose weight ⁽²⁾. In recent years, the two most commonly performed bariatric procedures are the sleeve gastrectomy (SG) and the Roux-en-Y gastric bypass (RYGB) ⁽³⁾. The laparoscopic adjustable gastric banding procedure has become much less common due to several intolerable adverse effects, high rates of re-operation and poor long-term efficacy ^(3,4). Surgeons originally designed these procedures to cause mechanical restriction and therefore reduce total calories consumed, however patients reported that their reduction in food consumption was due to reaching satiety faster during a meal, and feeling less hungry overall ⁽⁵⁾. Consequently, research has shown that BS also influences food intake by causing major changes in hunger and satiety hormones, changes in food preferences, and a reduction in nutrient absorption ^(5,6). Since BS operations are most commonly performed during women's reproductive years, the number of pregnant women with prior bariatric surgery is increasing ⁽¹⁾.

Pregnancy following bariatric surgery

Due to the positive effect on weight loss, women who undergo BS experience significantly improved hormone balance and improved fertility ⁽⁷⁾. It is therefore important that women of childbearing age who undergo BS are informed of this increase in fertility as it is recommended that following BS, pregnancy should be delayed by at least 12–18 months ^(7,8). This is primarily due to the rapid and major weight loss and nutritional insufficiencies post BS which may lead to adverse pregnancy outcomes ⁽⁷⁾. However, even though BS before pregnancy improves obesity-related problems for the mother, it also reduces the absorption of micronutrients that are needed for healthy foetal development ⁽⁹⁾. In fact, women who conceive within 12 months of their BS have a higher risk of inadequate gestational weight gain compared to women who conceive after 12-18 months ⁽⁷⁾. Therefore,

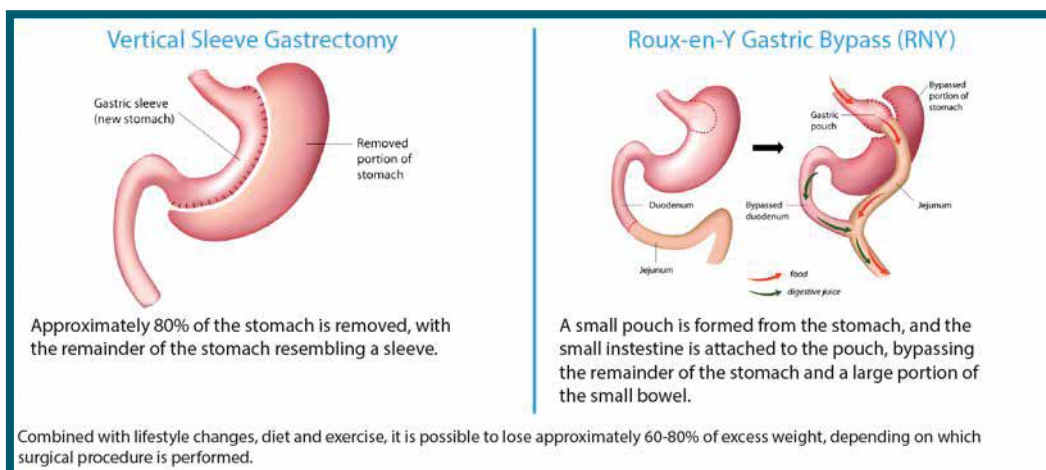
delaying pregnancy enables identification and correction of nutritional insufficiencies that may not be initially evident and allows women to achieve their full weight-loss goals prior pregnancy.

Several observational studies have found that BS prior to pregnancy was associated with increased risk of some adverse perinatal outcomes ⁽⁹⁾. Meta-analysis identified that women post BS, experienced significant increase in odds of perinatal mortality, congenital anomalies, small for gestational age babies, preterm birth, and neonatal intensive care unit admission ^(1,9,10). This was mostly seen in malabsorptive types of surgery, which suggests a link with nutrition ⁽⁹⁾. Therefore, women of reproductive age undergoing BS are considered a high-risk group and require specialised preconception and antenatal nutritional support to achieve the best outcomes for both mothers and babies ^(9,11). Research has also highlighted the importance of increased foetal and glucose monitoring for this cohort, throughout pregnancy ⁽⁹⁾.

In the pre-conception period, or at the first antenatal visit, women should have their full blood count, ferritin, iron, vitamin B12, folate, thiamine, calcium, and vitamin D checked, with repeat testing at least once per trimester and during the postnatal period if breastfeeding ⁽⁷⁾. It is also recommended that obstetrician management should be complemented with a multidisciplinary approach of bariatric dietitians, bariatric medical practitioners and bariatric surgeons ^(1,7,9).

The type and dosage of supplementation needed differs depending on what BS procedure was done, however for the SG and RYGB, it is recommended that all pre-conception/pregnant/breastfeeding women take multivitamin and mineral tablets including iron, folic acid, thiamine, selenium, zinc, copper and vitamin C, elemental calcium, vitamin B12, iodine and vitamin D ^(1,7,9). Supplementation of the fat soluble vitamins A, E and K are considered optional depending on their level ^(1,7,9).

If oral supplementation is inadequate or difficult to achieve, for example in cases of severe vomiting or decreased oral intake, then parenteral supplementation of certain micronutrients, such as thiamine and vitamin



B complexes, and iron should be considered^(12,13). However, it has been shown that compliance of long term multivitamin supplementation is suboptimal following BS, despite recommendations that all patients should have micronutrient supplementation after BS^(7,9). This further emphasises the importance of good and regular nutritional follow-ups.

Nonetheless, there is increasing evidence suggesting that bariatric surgery drastically improves overall pregnancy outcomes and that has several significant benefits on pregnancy^(1,7,9,12,13). Due to the positive effect on weight loss, women who go through BS before pregnancy experience a lower risk of macrosomia and pregnancy metabolic complications when compared with obese women who had not undergone surgery^(7,9,14). This includes a significant reduction in gestational diabetes and preeclampsia^(7,9,14).

Women who enter pregnancy at an obese weight also have an increased rate of birthing complications, the need for induction of labour, prolonged labour, caesarean sections and prolonged hospital stay post-delivery^(15–17). Therefore, since BS results in weight loss, the risk of pregnancy complications related to obesity are significantly reduced.

Breastfeeding after bariatric surgery

Limited research shows that breast milk after bariatric surgery is adequate in nutrients and no long-term effects on mothers and their babies were reported in case studies when nutrient deficiencies were corrected⁽¹⁸⁾. This suggests that issues related to breastfeeding post BS occur when nutrient deficiencies are present, which further emphasises the importance of follow-up nutrition counselling. A recent systematic review suggests that breastfeeding after bariatric surgery should be recommended along with monitoring and micronutrient supplementation. However, additional research and increased sample sizes are needed to further examine the relationship between breastfeeding and BS⁽¹⁸⁾.

Summary of important points

- After bariatric surgery, women should undergo close monitoring for nutritional insufficiencies before, during and after pregnancy, especially if breastfeeding.
- Following bariatric surgery, pregnancy should be delayed by at least 12–18 months due to adverse pregnancy outcomes associated with rapid weight loss.
- Pregnancy after bariatric surgery is associated with reduced macrosomia, pre-eclampsia and gestational diabetes risk.
- Personalized nutritional counselling care during post bariatric surgery improved nutrient intake of mothers and may reduce the risk of small for gestational age babies.
- Women should undergo in-depth dietary assessments and emphasis needs to be made on supplementation adherence, to prevent micronutrient deficiencies.
- A multi-disciplinary team should be involved in the management of these high-risk women.

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Umbilical Granuloma in Babies

An umbilical granuloma is a type of scar tissue that may form in a belly button during the first few weeks of a neonate's life after the umbilical cord is cut. This umbilical abnormality generally appears as a small pink or red lump at the umbilicus which may be covered in a clear or yellow discharge. *Only about 1 in 500 newborn babies develop an umbilical granuloma* (Haftu et al., 2020). In most cases, babies who develop a granuloma, will have no problems and do not need any treatment as it will heal by itself.

If a granuloma is noticed, it is imperative that for the first 6-8 weeks, the umbilicus is kept clean and dry. It could be cleaned with soap and water if it gets soiled with stools or urine, and exposed to the air by folding back the top of the baby's nappy. If healing fails to occur within this time, treatment will be crucial to prevent infection.

Both salt and silver nitrate have proven to be effective treatments for umbilical granulomas in neonates (Fawzi, 2021; Haftu et al., 2020; Jois & Rao, 2021). Salt treatment may be done at home. Since a granuloma is covered in clear mucus, the application of salt will draw water out of the cells, causing the granuloma to shrink (National Health Service [NHS], 2015). Initially, the centre of the umbilicus should be exposed by pressing gently on the surrounding area. Then, a small pinch of table/cooking salt should be placed onto the umbilical granuloma and held in place with a gauze swab over the belly button. After 10-30 minutes, the area should be cleaned using a *clean piece of gauze soaked in warm water*. This procedure should be repeated twice a day for 2-3 days. Following this, it may be noticeable that the granuloma has become smaller, changed colour or dried up. It is vital that a health care professional reviews the granuloma after 7 days (NHS, 2015). A systematic review (Haftu et al., 2020) indicated that salt treatment for umbilical granulomas is available, cheap, safe, effective and easy to apply by non-health care professionals (including parents). No side effects and no recurrence of granulomas were reported (Haftu et al., 2020).

If salt treatment is not effective, the health care professional may put a small amount of silver nitrate on the granuloma, burning off the tissue (Jois & Rao, 2021; Karagüzel & Aldemir, 2016). Silver nitrate is commonly available as pencil sticks. Umbilical granulomas do not

have nerve endings; hence, this procedure is not painful to the newborn. Nevertheless, it is significant that before using the silver nitrate, the outside area of the umbilicus is rubbed with petroleum jelly (vaseline) or liquid paraffin. This is because silver nitrate carries the potential risk of burns to the surrounding skin (Jois & Rao, 2021; Karagüzel & Aldemir, 2016).

If a granuloma gets infected, early treatment is a must. The neonate may need antibiotics to help prevent the infection from getting worse. It is of utmost importance that the baby is immediately taken to a paediatrician if the following signs or symptoms occur:

- A fever of more than **38 degrees Celsius**
- Redness or swelling of the surrounding skin
- A rash around the belly button
- *A foul-smelling liquid* oozing from the belly button
- *Bleeding* around the granuloma
- Pain or tenderness around the belly button

In essence, umbilical granulomas in neonates are common umbilical abnormalities which may cause suffering for the parents. Early identification of a granuloma and commencement of treatment ensure a rapid recovery. Even though there are various treatment options, there seems to be no agreement on the best option of treatment.

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Student's Testimonials



Katarina Galea Curmi
– 1st Year Midwifery Student

I am Katarina Galea Curmi and I am a first-year student midwife. Though in the first few times on the wards I felt intimidated in the company of experts in the field, the experience in the hospital has enriched me with so much knowledge in a short span of time. Even though as a first year I was not of much assistance to the midwives, they explained each step of the care they were giving, which made it easier to adjust to the environment on the wards.

My experience so far has given me a deeper understanding of the important role the midwife plays in such a vulnerable time in a mother's life. I am looking forward to more experiences on the wards and excited to see what the future holds.



Mariah Caruana
– 2nd Year Midwifery Student

I am Mariah Caruana, a second-year student midwife. I have chosen to pursue midwifery as a career since I was always interested in supporting families in their journey to parenthood and beyond. Moreover, the phenomenon of conception and childbearing as well as the physiology behind them always used to fascinate me.

Studying midwifery means understanding the importance of commitment, prioritisation, and organisation and I believe that a good midwife is one who is also empathic and caring.

My experience on the wards at first was a bit challenging until I got used to it. However, I really appreciate the fact that we, as student midwives, get the opportunity to work in the different maternity wards and see the miracle of life happening in front of our eyes. The midwives we meet in the wards are always really helpful and show their dedication to their job, while always ensuring that we, as students, are integrated into the implementation of care and thus helping us grow and mature into better midwives.

One piece of advice to those who are considering a career in midwifery is to never give up, stay determined and stay around with people who give you support, and to always trust and believe in yourself since it is the start of a very rewarding and special career



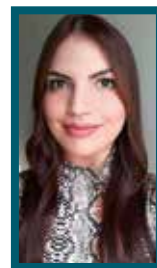
Amy Azzopardi
– 3rd Year Midwifery Student

I am Amy Azzopardi and I am a third-year student midwife. To me midwifery is not only a profession but also part of my identity. I am embarking on my third year of studies with a great sense of determination, given that this year I will start carrying out deliveries and other essential skills by myself. However, being a third year also requires more responsibility and assertiveness.

Over these past two years, various experiences on the wards and the help of the dedicated staff, helped me gain a

lot more knowledge and confidence in my work. Working in different wards provided me with the opportunity of taking care of several women, each going through their unique experiences. Most of them were positive experiences, such as observing a neonate transition from intensive neonatal care supported by the dedicated NPICU team, into domiciliary care supported by their parents. However, there were also negative experiences which made me more aware of the importance of providing holistic care, that also emphasises on the psychological and emotional aspects.

In conclusion, these experiences also shed light on what is the true meaning of being a midwife, which is "being with women".



Justine Borg
– 4th Year Midwifery Student

I am Justine Borg and I am a fourth-year student midwife. My experience on the wards has been a rewarding one, which I will keep close to my heart. I still remember my very first day there, with mixed emotions. I was very welcomed by all the staff and this made me feel at ease.

The midwives were truly amazing mentors who thought me different skills throughout the years. When I had any queries or concerns, the midwives were always there to help. I truly believe that the midwives made their utmost to give me the best possible experience and skills to nurture me into a valuable midwife. I will treasure this opportunity throughout my whole career.

I must say that not every experience I went through was a positive one. A particular experience that I still clearly remember was when I was in my third year at the Central Delivery Suite. In the morning my mentor and myself were assigned to a mother, in which everything was going very smoothly but then suddenly, during a vaginal examination the midwife felt a cord presentation. I remember how the mother was terrified and shocked about what has happened to her. She could not understand what was happening although the staff were explaining to her, but it was very overwhelming for her and her husband. From that experience I had learnt how important the role of the midwife is and how prompt and quick the midwife must act for both the mother and her baby to survive. My mentor stayed calm throughout the whole experience, although she had acted very quickly and at the end both the mother and her baby were fine. As a student midwife, I remember all the mixed feelings I had throughout this experience. At first, I was very terrified and worried at the same time, but then I felt a relief and my heart was fulfilled when I heard that little cry and that everything went well. This experience had motivated me and made me realise how our role has a great impact on both the mother and the baby's lives. Although there are bad moments, overall, the profession of a midwife is all very worth the years of study.

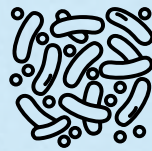
As a final year midwifery student, I am looking forward to graduate and start working as a midwife. I must say that although the final year is not a walk in the park, I am positive that my dream career would be fulfilled.

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B.Sc Dissertation Abstracts

University of Malta

Women's Experiences of Coping with Perineal Trauma Following Childbirth

Perineal trauma is any type of injury to the perineum, ranging from haematomas and lacerations to third and fourth-degree tears. This study aimed to explore women's experience of perineal trauma following childbirth. This was achieved by understanding how perineal trauma influences women's daily activities; the advice and support given to women with perineal trauma and by understanding how women cope with perineal trauma. A qualitative research design was adopted and a purposive sample of eight women recruited from health centres across Malta via an intermediary at their 6-week postpartum visit. A semi-structured interview tool was specifically designed for the study and interviews were held virtually when participants were between 7 and 10 weeks postpartum. All recruited participants took part in the interviews, yielding a 100% response rate. The interviews were audio-recorded with the participant's consent and pseudonyms were used to maintain anonymity.

The data collected was transcribed verbatim and then translated from Maltese to English for academic purposes. The data was then analysed using thematic analysis. The findings showed how participants experienced a lack of information concerning the type of trauma they sustained. Participants explained how their perineal trauma had an impact on their daily living including affecting their ability to walk, shower and

even open their bowels. Participants also described the physical symptoms experienced which included a burning sensation, swelling and even scarring. Some of these symptoms led to delayed recovery. The perineal trauma that mothers sustained also led to feelings of fear, anxiousness and frustration and the physical relationship with their partners was also impacted. The women described using analgesics, cold compresses, and saline as well as seeking reassurance from healthcare professionals as forms of coping.

This study brought forward several implications and recommendations for practice, research, and education. This study stresses the importance of offering adequate information to mothers about their perineal trauma and its recovery, encouraging continuity of care between healthcare professionals, and improving the ward environment to encourage periods of rest. Additionally, it was recommended that further education is given to mothers in the antenatal period regarding perineal trauma. This study recommends future research on the topic using a large, mixed-methods study which will enable generalisability of the findings and will further enhance our understanding of this experience in an attempt to better support women.

Keywords: *perineal trauma, postpartum period, daily activities, support, women's experiences, perineal tears*

Kayley Bondin

Midwives' Views on Pregnant Women Using Mobile Prenatal Apps

The aim of this study was to assess expectant mothers' perspectives on the use of mobile prenatal applications. In order to reach the aim of the research, the researcher investigated how expectant mothers use mobile applications concerning pregnancy, explored women's attitudes towards information provided by prenatal apps, and assessed what functions and features women value in prenatal apps. The research adopted a quantitative approach. Following a pilot study, a self-designed questionnaire was used to collect data from a convenience sample of 45 adult expectant mothers recruited from Antenatal clinic and Obstetric wards 1 and 3 at the state hospital, representing a response rate of 90%. Data was analysed manually using descriptive statistics and through content analysis. The findings are presented using bar graphs, pie charts and tables.

Most of the participating expectant mothers used mobile prenatal apps during their pregnancy, with the most commonly mentioned apps being 'Baby Centre' and 'Pregnancy +'. Prenatal apps were most often used to learn about fetal development and changes in the maternal body during pregnancy. Participants overwhelmingly indicated that they trusted the information they gained from the prenatal app/s, but only a few made lifestyle changes based on the information learned. The majority of the participants also felt that such apps should ideally be recommended, managed and monitored by healthcare professionals to ensure that the information provided was

reliable. It was suggested that more audio-visual and interactive features within the apps could enhance engagement. The study concluded that prenatal apps are widely used by women and may be a valuable resource for the prenatal educational initiatives within maternity services.

Several recommendations for practice, education, management and further research are proposed. Recommendations for practice include healthcare professionals and doctors should be involved in the development, monitoring and managing of prenatal apps for the apps to be in line with up-to-date and evidence-based since prenatal apps are becoming an increasingly important information source for pregnant women. Recommendations for education that midwives and other healthcare professionals should counsel expectant mothers about the potential of misinformation and harmful content which may be within certain prenatal apps. Further research includes a similar study to be carried out with midwives working at the local hospital to obtain their perspective about the usage of mobile prenatal apps by expectant mother. Qualitative research enquiring into expectant mothers' experiences of using prenatal apps could enhance the depth of our knowledge on the phenomenon. Attitudes towards apps and other technologically-based means of imparting prenatal education could also be investigated amongst healthcare professional providing perinatal care.

Kelsey Desira

Midwives' Views on Upright Birthing Positions

Background: Upright birthing positions (UBPs) can be adopted by women during the second stage of labour and are known to benefit both the mother and the foetus. However, a dearth of evidence exists on the midwives' views on UBPs.

Methods: The study adopted a quantitative research approach. Data were collected via a one-time semi-structured,

self-designed questionnaire including both closed and open-ended questions. Forty-four midwives working at the Central Delivery Suite in the general state hospital in Malta were included. The data were analysed using descriptive statistics and content analysis.

Findings: Most midwives promote the use of UBPs and are



knowledgeable on the effects of UBPs on maternal outcomes. However, participants need more education to increase their knowledge on the foetal and birth outcomes. This study identified that most midwives are conscious of their influence on the birth position that women adopt and claimed that they are always willing to accept maternal choice and assist them in their preferred upright position. Participants reported that clinical training on UBPs, a relationship between the midwife and the

mother and support at the workplace encourage them the most to assist women in adopting UBPs. However, midwives' lack of confidence, medicalisation of labour, and the lack of equipment available were some of the discouraging factors mentioned by participants.

Conclusion: This research identified that midwives need more education and training to increase their knowledge and confidence to support women safely whilst adopting UBPs.

Stephanie Borg

Midwives' Experiences of Promoting the Golden Hour After a Normal Vaginal Delivery

The Golden Hour (GH) is the first hour following the birth of a baby, and it is a crucial time for the wellbeing of both the mother and her baby. This study aimed to understand midwives' experiences of promoting the GH after a normal vaginal delivery (NVD). Its objectives were threefold, which included; exploring what facilitates the GH, exploring any barriers that might hinder the GH and understanding midwives' perceptions of the benefits of the GH. A qualitative approach was used to explore the experiences of eight midwives who worked at the central delivery suite (CDS) at the local general hospital, recruited by convenience sampling via an intermediary. All participants gave their informed consent to participate in this study, and this yielded a 100% response rate. The data was collected through a one-time, face-to-face interview, using a self-designed, semi-structured interview schedule. Participants' names were pseudonymised for confidentiality reasons and audio-recording was performed.

Data were transcribed verbatim and analysed using Braun and Clarke's thematic analysis (2006). The results of this study revealed that local midwives were able to accurately define the term 'GH' and were aware of the numerous benefits that this practice offers to both the mother and her infant. Furthermore, participants expressed how the GH is also beneficial for the midwife and the father, as it provides the midwife with a sense of satisfaction and it also enhances the father-infant bond. It was clear from this study that all of the participating midwives recognised the value of the practice of the GH and stated that they were doing their best to practice it. On the other hand, midwives

indicated the need for more training and feedback, to increase their knowledge of the GH and, as a result, improve their practice. Findings concluded that parents' willingness to practice the GH, as well as the midwife herself, both contribute to the promotion of the GH. However, according to the interviewed midwives, working in an obstetric-led environment, the current ongoing COVID-19 pandemic, emergency situations, parents' unwillingness to practice the GH, having a busy workload with a shortage of staff and an insufficient number of beds are all barriers to the practice of the GH. Lastly, to further enhance the practice of the GH, more midwifery education and training, effective communication and collaboration with the multidisciplinary team, and more midwifery-led care are required.

The results exhibited several recommendations for practice, management, education and further research. These include the need for revising and improving intrapartum guidelines, re-organizing the setup of labour and delivery rooms, the introduction of midwifery-led care and continuity of care and carrying out monthly reflective meetings. Additionally, it was recommended to introduce compulsory continuous professional development programs, ensuring that all student midwives are competent in practising the GH and improving local antenatal programs. Lastly, future research with a larger sample size, a mixed-method approach and varying healthcare professionals (HCPs) views is also recommended.

Keywords: *golden hour, midwives' views, facilitators of the Golden Hour, barriers to the Golden hour*

Kayce Camilleri

Midwives' Views on Management and Care in Vaginal Birth After a Previous Caesarean Section

A vaginal birth after Caesarean section refers to a vaginal delivery following a previous delivery by Caesarean section. The aim of this study was to explore midwives' perceptions of vaginal birth after Caesarean section. The objectives were; to enquire into how midwives perceive vaginal birth after a previous Caesarean section, to explore their thoughts about maternal choice in determining their preferred birth method, and to explore the physical and psychological intrapartum care provided to women attempting vaginal birth after a Caesarean section. A qualitative approach was adopted, using semi-structured, one-to-one interviews, conducted with a purposive sample of six midwives working at the Central Delivery Suite at Malta's main general hospital. A 100% response rate was achieved. The interviews were audio-recorded and then transcribed verbatim. Data was analysed using thematic analysis.

The findings revealed that midwives had a positive attitude towards vaginal birth after Caesarean section, and encouraged eligible women to opt for this alternative. However, they also believed in promoting informed decision-making and respecting women's choices. Midwives felt that women were primarily influenced by the advice of obstetricians, as well as by their own

previous experiences of birth and postpartum recovery. The opinions of other women within their close social network were also found to have an impact on maternal decisions. Participants claimed that effective communication and psychological support were needed throughout the experience, especially if women required an emergency Caesarean section, following an unsuccessful trial of labour, which often left women feeling downhearted.

The study concluded that choosing the optimal mode of birth after a previous operative delivery is often a complex decision for expectant mothers. The study suggests the need for all eligible expectant mothers to receive unbiased information about vaginal birth after Caesarean section. The main recommendations of the study entail the need for further research exploring obstetricians' attitudes towards vaginal birth after Caesarean section. This would provide a deeper insight into how these professionals may be influencing women in their decisions. This study also recommends training for all healthcare professionals providing intrapartum care, to continuously keep them informed regarding updated evidence-based guidelines on vaginal birth after Caesarean section.

Katya Livori



Midwives' Experiences of Caring for Couples Having a Stillbirth

Stillbirth is defined as foetal death from 22 weeks of gestation with a birth weight of 500 grms or more. The experience of stillbirth has its profound impact not only on the women and their families, but also on midwives while providing care to these families. The **aim** of the study was to explore the midwives' experiences when caring for parents having a stillbirth. The **objectives** were to delve into the midwives' practices when providing care to these couples, to explore the midwives' interpersonal skills when caring for these parents, and to identify the challenges that midwives experience. The study adopted a qualitative research approach, and eight midwives with a minimum of two years working experience in a local Central Delivery Suite were purposively sampled to participate in this study. Data was collected via a one-time, face-to-face, semi-structured interview using an interview schedule self-designed by the researcher. Audio-recorded data was transcribed verbatim and analysed using thematic analysis. The **findings** revealed that the participating midwives

experienced negative emotions and difficulties when caring for couples going through a stillbirth. The midwives further divulged other challenges, such as, the lack of resources and dealing with the emotions of parents. The midwives also described various care practices that they adopt to help parents deal with their loss. Having good interpersonal skills, particularly being silent and an active listener, were considered important by the participating midwives. Mixed opinions about the need for specialised training and appropriate guidelines for midwives were also voiced by the participants. In **conclusion**, the results exhibited that the overall experience portrays various struggles and emotional tolls on the midwife when providing bereavement care. The main recommendations emerging from this study were the provision of debriefing services and supportive guidelines, training opportunities using simulations, and more in-depth studies on midwives' experiences from a more holistic perspective.

Amy Farrugia

Midwives' Perspectives on Water Immersion During Labour and Birth in Malta

The National Institute for Care Excellence (NICE, 2014) claims that women with low-risk pregnancies should be offered the opportunity to labour in water, however the facilitation of water immersion (WI) remains limited in some countries, including Malta. The **aim** of this study was to explore the local midwives' perspectives on the practice of WI during labour and birth. The **objectives** were to seek midwives' knowledge, attitudes and experiences of WI, to explore the challenges in the practice of WI, and to identify the strategies necessary to address these challenges. The study adopted a quantitative **method**, using a self-administered questionnaire, where 50 midwives working at the Central Delivery Suite were recruited through convenience sampling. Forty questionnaires (n=40) were returned, yielding a response rate of 80%. Manual **analysis** of the data collected was performed and results were presented in the form of absolute numbers, percentages, bar charts, pie charts and tables. **Findings** revealed that midwives are supportive of WI in the first stage of labour but are hesitant in facilitating WI during the second and third

stages of labour, mainly due to lack of experience and available facilities and equipment. The main cited benefits of WI were that it helps women manage contractions, reduces interventions such as the need for pharmacological analgesia and creates a relaxing environment whilst providing a more positive birth experience. The main concerns expressed by midwives were the difficulty of estimating blood loss and the maintenance of a constant water temperature. Lack of equipment and facilities as well as lack of institutional and staff support were the most common identified challenges of WI. Education and training for staff as well as the acquisition of the necessary equipment were the most mentioned strategies for the facilitation of WI. In **conclusion**, the midwives' perspectives of WI are clearly affected by the training received, equipment available and the demand for WI by the expectant parents during labour and birth. Therefore, the implementation of educational and practice interventions, coupled with adequate guidelines, are being recommended based on the findings of this study.

Joanne Farrugia Imbroll

Pregnant women's Expectations for the Early Postpartum Period After their First Childbirth

The aim of this study was to explore pregnant women's expectations for the early postpartum period after their first childbirth. The objectives were to explore women's expectations for their physical and emotional state in the early postpartum period, to inquire into women's expectations for caregiving during this period, to identify sources of influence on maternal expectations, and to consider the perceived adequacy of information received about the early postpartum period. A qualitative approach was adopted, with semi-structured interviews used to generate data from a purposive sample of seven expectant mothers in the third trimester of their first pregnancy. A response rate of 100% was attained. The interviews conducted were audio-recorded and transcribed to collect the actual verbatim responses of the participants and facilitate content analysis. The data collected was then analysed using Braun and Clarke's (2006) thematic analysis.

While some women had established expectations for the early period following childbirth, the focus of others was on the pregnancy and birth, and they were unable to clearly visualise the period beyond that. The mother's physical state in the early postpartum and her ability to independently care for the neonate

was viewed as somewhat unpredictable, being that it would be heavily influenced by the mode of delivery. Most of the women reported feeling unprepared for the postpartum period, with some questioning their own mothering abilities. Expectant mothers predicted that the assistance provided by a compassionate midwife, as well as by their family, and particularly their partners, would be invaluable to their adjustment in the early postpartum period. Antenatal educational classes were not felt to offer sufficient information about the puerperium, and women were unsure whether listening to the stories of other mothers provided an accurate picture of what their own experience would be like. The study concluded that many women perceive the early postpartum as a somewhat unknown and, to a certain extent, unknowable period for which they were largely ill-equipped.

Based on the findings, a number of recommendations for practice, education, and future research are proposed, including the necessity for large-scale quantitative research to provide better insight into maternal knowledge and expectations regarding the postnatal period prior to childbirth. This would allow improvements to both prenatal education and postnatal care in accordance with women's needs.

Danica Sciberras

Midwives' Perspectives on the Use of Intermittent Fetal Auscultation and Continuous Cardiotocography During Labour

During labour the fetal heart rate (FHR) and maternal contractions may be assessed by two different monitoring methods: intermittent fetal auscultation (IA) and continuous cardiotocography (CTG). The aim of the study was to explore midwives' perspectives on the use of IA and continuous CTG during labour. The objectives of this study were to determine midwives' choice of intrapartum fetal heart rate (FHR) monitoring methods in different circumstances, and factors which influence midwives' choice, and to assess midwives' views on the advantages and disadvantages of each monitoring method, as well as to explore midwives' views on how FHR monitoring methods affect wider intrapartum care. A qualitative research approach was chosen, and one-time, face-to-face, semi-structured interviews were conducted with a purposive sample of eight midwives. The interviews were audio-recorded, transcribed verbatim and analysed using thematic analysis, as described by Nowell et al. (2017).

The findings of the study indicated that the method of fetal monitoring used by midwives depends on various factors, including risk assessment and labour stages. Participants indicated that they are more likely to use CTG monitoring during the second stage of labour. It seemed that midwives also considered maternal choice to be an essential part in the decision of the fetal monitoring method used during labour. Furthermore, external factors influenced the midwives' choice of fetal monitoring, as the participants worked in a medicalised system of care. Hospital

protocols also impacted the choice of fetal monitoring methods, especially the admission CTG as it is expected to be performed on all labouring mothers regardless of risk status. Midwives suggested various advantages and disadvantages of both IA and continuous CTG monitoring. In fact, midwives viewed both fetal monitoring methods as being easy to use, but claimed that CTG reassures them more than IA. According to participants, each method of fetal monitoring could affect intrapartum care more broadly for women and their families, with CTG restricting maternal mobility, increasing maternal anxiety, and impeding the midwife-mother relationship. Whilst IA promotes both maternal mobility and the midwife-mother relationship. Midwives also claimed that obstetric-led care and lack of discussion with obstetricians may be a barrier to the use of IA and the implication for this type of practice. From the findings of the study, several recommendations for practice, education and further research are suggested. Local intrapartum guidelines with respect to fetal monitoring methods should be compiled and made easily accessible. For education, the introduction of continuous professional development courses catered for both midwives and obstetricians should be offered, so that safe use of IA and CTG is achieved. Moreover, the need to conduct large scale quantitative research which focuses on midwives' experiences will help gain a deeper understanding and might provide more awareness on fetal monitoring methods amongst midwives.

Maria Galea



From right to left

Danica Sciberras, Katya Livori, Kayce Camilleri, Kayley Bondin, Joanne Farrugia Imbroll, Maria Galea, Amy Farrugia, Nicole Camilleri, Stephanie Borg, Kelsey Desira

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