

The role of midwives and obstetrical nurses in the promotion of healthy lifestyle during pregnancy

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Abstract: Women with maternal obesity, an unhealthy lifestyle before and during pregnancy and excess gestational weight gain have an increased risk of adverse pregnancy and birth outcomes that can also increase the risk of long-term poor health for them and their children. Pregnant women have frequent medical appointments and are highly receptive to health advice. Healthcare professionals who interact with women during pregnancy are in a privileged position to support women to make lasting healthy lifestyle changes that can improve gestational weight gain and pregnancy outcomes and halt the intergenerational nature of obesity. Midwives and obstetrical nurses are key healthcare professionals responsible for providing antenatal care in most countries. Therefore, it is crucial for them to build and enhance their ability to promote healthy lifestyles in pregnant women. Undergraduate midwifery curricula usually lack sufficient lifestyle content to provide emerging midwives and obstetrical nurses with the knowledge, skills, and confidence to effectively assess and support healthy lifestyle behaviours in pregnant women. Consequently, registered midwives and obstetrical nurses may not recognise their role in healthy lifestyle promotion specific to healthy eating and physical activity in practice. In addition, practising midwives and obstetrical nurses do not consistently have access to healthy lifestyle promotion training in the workplace. Therefore, many midwives and obstetrical nurses may not have the confidence and/or skills to support pregnant women to improve their lifestyles. This narrative review summarises the role of midwives and obstetrical nurses in the promotion of healthy lifestyles relating to healthy eating and physical activity and optimising weight in pregnancy, the barriers that they face to deliver optimal care and an overview of what we know works when supporting midwives and obstetrical nurses in their role to support women in achieving a healthy lifestyle.

Keywords: gestational weight gain, healthy lifestyle, intervention, midwifery, training

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Introduction

One in two Australian women now enter pregnancy overweight or with obesity,^{1,2} and 60% experience excess gestational weight gain (GWG);³ similar prevalence rates have been reported internationally.⁴ Excess GWG is associated with adverse maternal and child outcomes including gestational diabetes mellitus (GDM),⁴ gestational hypertensive disorders (GHDs), caesarean section, macrosomia and babies born large

for gestational age.^{3,5} Excess GWG is also associated with postpartum weight retention and long-term cardiometabolic risk factors for the mother⁶ as well as childhood and adult adiposity and cardiometabolic risk factors for the child.^{7–9} Maternal obesity at conception is independently associated with GDM, GHD, caesarean section, macrosomia, induction of labour and resuscitation at birth.^{10,11} Therefore, the National Academies (formerly the Institute of Medicine) advise

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women to gain weight during pregnancy according to their pre-pregnancy body mass index (BMI). For singleton pregnancies, the recommendations are 12.5–18 kg for a BMI < 18.5 kg/m², 11.5–16 kg for a BMI 18.5–24.99 kg/m², 7–11.5 kg for a BMI 25–29.99 kg/m² and 5–9 kg for a BMI ≥ 30 kg/m².¹² However, a systematic review of over 1.3 million women in 5,354 international studies reported that 47% gained weight in excess of the National Academies recommendations.³ How to achieve optimal weight management in pregnancy is outlined in international evidence-based guidelines.^{13,14} Dietary intake and physical activity are two key modifiable lifestyle behaviours that impact on weight outcomes in women.^{15–17} Studies have reported that individualised counselling with consistent guidance for nutrition and physical activity was promising for achieving a healthy GWG in pregnant women.¹⁸ Healthcare professionals who interact with women during pregnancy are in a privileged position to support women to make lasting healthy lifestyle changes that can improve GWG and pregnancy outcomes and halt the intergenerational nature of obesity. This narrative review focuses on the modifiable lifestyle factors of diet and physical activity. While recognising that lifestyle is a multifaceted concept including elements such as diet, physical activity, alcohol, smoking, drug use, sleep and mental health, diet and physical activity are the key factors related to achieving an appropriate energy balance to optimise GWG. The term lifestyle therefore refers to diet and physical activity in this review. This narrative review also focuses specifically on midwives and obstetrical nurses, who are key healthcare professionals during pregnancy.

Recommendations for healthy lifestyles (diet and physical activity) in pregnancy to optimise GWG

An individual patient data meta-analysis of 16,185 pregnant women reported that antenatal lifestyle interventions that focused on optimising diet and physical activity decreased GWG and improved health outcomes including decreasing the odds of GDM by 24% and GHD by 15%.¹⁹ Lower-quality diets and less healthy dietary patterns are associated with an increased risk of adverse outcomes such as GDM, GHD, preterm birth and babies born small for gestational age.²⁰ Physical activity during pregnancy can reduce the

risk of adverse outcomes such as GDM, medical intervention during labour and babies born large for gestational age.²¹ Lifestyle interventions based on diet and physical activity have also been shown to reduce postpartum weight retention.^{22–24} Therefore, pregnant women should receive targeted lifestyle advice with a focus on diet and physical activity to promote healthy GWG and to improve pregnancy outcomes.

Dietary recommendations promote the consumption of wholefoods from the core food groups including wholegrains and cereals, vegetables, fruit, meat and/or alternatives, dairy or alternatives and a limited amount of ‘discretionary’ or non-core foods.^{15,17} A nutritionally adequate diet during pregnancy is paramount for a woman’s health and the growth and development of her baby.¹⁷ Women experiencing micronutrient deficiencies in iron, folate and iodine are at increased risk of adverse pregnancy outcomes and impaired foetal growth and development, folate supplementation of 500 mcg/day from 12 weeks before conception and throughout the first trimester is recommended to prevent neural tube defects. Women with obesity are recommended to take a 5-mg dose.¹³ Iodine supplementation of 150 mcg/day is recommended to support women to meet increased requirements during pregnancy and for foetal brain growth and development.¹³ Dietary considerations during pregnancy include avoiding certain foods that increase the risks of methylmercury toxicity, listeriosis, and salmonellosis. Complications associated with these conditions include developmental delays, miscarriage, premature birth, and stillbirth.¹³ Recommendations to minimise these risks include following good food hygiene practices and appropriate food choices.^{13,17,25–29} By adhering to these recommendations, pregnant women can meet their intake of key nutrients without excess GWG including calcium, protein, iodine and long-chain omega-3 polyunsaturated fatty acids. Physical activity recommendations promote regular physical activity (at least 150 minutes of moderate-intensity aerobic activity per week and additional resistance training) in all women except in those for whom physical activity is contraindicated.^{21,30,31} Women who were physically active before pregnancy can continue these activities. Specific safety precautions should be considered over the course of pregnancy including excessive heat, physical contact, high altitudes or scuba diving.³¹

However, many pregnant women fail to achieve the nutritional recommendations^{32–34} or reach the recommended level of physical activity.³⁵ These women may lack awareness of or may be confused about appropriate food or exercise choices,^{34,36–40} have concerns about food or exercise safety,^{39,41} lack adequate advice from healthcare professionals^{42,43} and seek advice from non-professional sources, which are less likely to be evidence based.⁴⁴ Ultimately, there is an urgent need for healthcare professionals in antenatal care to provide pregnant women with evidence-based advice and support that promotes healthy lifestyle behaviours and optimal GWG.

Why midwives and obstetrical nurses are crucial for promoting healthy lifestyles and optimising weight in pregnancy

In the United Nations' Sustainable Development Goals,^{45,46} the importance of antenatal care is highlighted in *Goal Three: Ensure Healthy Lives and Promote Health and Wellbeing at all Ages*, with a focus on reducing maternal mortality, neonatal mortality and under-five mortality rates.⁴⁵ *Goal Three* also targets issues not directly related to antenatal care, such as reducing premature mortality from non-communicable diseases.⁴⁵ Midwives and obstetrical nurses are a trusted source of information during pregnancy and they can offer lifestyle advice and support.⁴⁷ In many countries, midwives and obstetrical nurses tend to have relatively high levels of contact and continuity of care (CoC) with pregnant women compared to other healthcare professionals. This places them in a privileged position to discuss sensitive topics including nutrition, physical activity and weight management.⁴⁸ Therefore, midwives and obstetrical nurses are arguably the best-placed professionals to provide women with ongoing lifestyle advice and support throughout pregnancy. This is supported by previously pregnant women who view them as the preferred health care professional to give healthy lifestyle advice.⁴⁹ The input of midwives and obstetrical nurses is likely to be integral to achieving goals for improving well-being worldwide. In keeping with this, midwives and obstetrical nurses acknowledge that they are responsible for advising and supporting women about nutrition and physical activity and optimising weight management.^{50–52} However, many pregnant women have reported that they did not consistently receive this advice

and support during their pregnancy^{47,53} or that the advice received made them feel uncomfortable and judged.⁵⁴ Furthermore, only one-third to half of all pregnant women receive lifestyle counselling to optimise GWG. This is likely to be a contributing factor to the poor adherence to GWG recommendations among pregnant women.⁵⁵ Given that pregnant women are highly receptive to health messages and positive lifestyle behaviour changes,⁵⁶ it is important that opportunities for midwives and obstetrical nurses to provide them with individualised, woman-centred lifestyle advice and support are not missed.

Midwives and obstetrical nurses' knowledge, skills and confidence in the promotion of healthy lifestyles and optimising weight during pregnancy

Undergraduate and postgraduate midwifery training varies between countries.⁵⁷ Research from Australia indicates that practising midwives received inadequate training to provide lifestyle advice⁵⁰ and that current midwifery curricula prioritises managing high-risk pregnancies over providing all women with tailored lifestyle advice and support.⁵⁸ This training gap must be addressed to enhance the provision of lifestyle advice and support to all pregnant women.⁴⁷ While healthcare systems in some countries such as United States may emphasise the primary care role of midwives and obstetrical nurses in lifestyle promotion, it is generally unclear how undergraduate or post-registration midwifery training can boost the knowledge, skills and abilities related to lifestyle and weight management antenatal care.^{59–61} For example, the nutritional topics covered in midwifery curricula are not usually clarified.⁶² In addition, the opportunities for midwives and obstetrical nurses to acquire knowledge, skills and abilities to provide women with advice about physical activity are often limited.⁶³ If provided at all, the learning process for healthy lifestyle promotion during pregnancy does not contain practical elements in undergraduate programmes and only includes basic lifestyle information, which usually lacks regular updates consistent with the most recent guidelines and stakeholders' input. For example, the time allocated for educating midwives on nutrition in Australia is commonly insufficient, and this topic is not a required competency for registration.⁵⁹ Overall, while most programmes cover issues such as the practical

management of morning sickness, prenatal supplementation and smoking,⁴⁸ many midwifery programmes do not teach emerging midwives how to effectively assess and manage weight, diet and physical activity in pregnant women. Midwives and obstetrical nurses need a comprehensive understanding both of healthy lifestyle promotion in pregnant women and their own role in antenatal care to support pregnant women in health behaviour change to achieve positive outcomes.^{48,60,61} For this purpose, lifestyle-related content could be integrated into their undergraduate theory and practice training as well as their post-registration training as continuing professional development (CPD).^{59,60} An efficient undergraduate training programme must be well-funded, have clear roles for educators and students and possess the resources to let these students gain lived experience with assessing and managing lifestyle in pregnant women.⁶⁴ Midwives and obstetrical nurses can then build on this experience later in their practice.⁶⁵

Although pre- and post-registration midwives usually report an awareness of healthy GWG guidelines and sufficient knowledge on the optimal GWG ranges, they are usually not prepared for weight, dietary and physical activity management interventions⁶² and feel they are not experienced enough to promote healthy eating and appropriate weight management.⁶⁶ Furthermore, despite the importance of refreshing the knowledge of practising midwives and obstetrical nurses on the practice of lifestyle management with evidence-based and up-to-date guidelines, most may never be offered opportunities for post-registration training on GWG management, healthy diet and physical activity.⁶¹ Therefore, they might rely on general nutritional knowledge, or on support from dietitians of which access may be limited.^{65,67} Compared to undergraduate midwives and obstetrical nurses, educating registered midwives and obstetrical nurses about lifestyle management is additionally challenging. Due to their heavy workload and the cost of training programmes, registered midwives and obstetrical nurses might not attend training sessions other than those that are related directly to their skills and explicitly beneficial to their practice.⁴⁸ To overcome this barrier, online training may be useful, although this approach also lacks a face-to-face communicative learning opportunity.⁴⁸ Compulsory free-of-charge in-service training provided by employers

is another valid option, as it gives all midwives and obstetrical nurses an equal and fair opportunity to receive post-registration training.⁶⁸ However, such training sessions need funding and resource support. It has been reported that an annual short CPD training on lifestyle content including GWG, nutrition and physical activity was effective in improving the knowledge and confidence of midwives to assess and manage GWG, diet and physical activity in pregnant women.^{63,68} An approach such as this might also make midwives and obstetrical nurses more aware of the risks associated with unhealthy weight, diet and physical activity before and during pregnancy.

In general, system-level support for the implementation and sustainability of effective training programmes is needed. A recent Australian-based study reported that despite a compulsory training programme to improve the knowledge and confidence of midwives to support women to achieve a healthy pregnancy weight gain including the use of pregnancy weight gain charts, half did not implement their new knowledge and skills during every visit with pregnant women.⁶⁹ Midwives and obstetrical nurses additionally need the time to provide advice, support and practical skills for optimising diet, physical activity and GWG to assist pregnant women in understanding, developing goals for and achieving the lifestyle changes involved in achieving a healthy GWG.¹⁸ Communication skills training is also essential to help midwives and obstetrical nurses to better address the sensitive topic of weight management with pregnant women.⁴⁸ One of the most significant barriers is midwives and obstetrical nurses' lack of confidence in their ability to raise the topic of weight and unhealthy lifestyle behaviours with women.⁵⁷

Lifestyle behaviour may be avoided by midwives and obstetrical nurses in their discussions with pregnant women potentially due to this being regarded as a sensitive topic that they are reluctant to discuss with women.⁷⁰ Even if midwives and obstetrical nurses are knowledgeable about lifestyle and weight management, it does not necessarily mean that they have the skills to deliver their knowledge in a way that resonates with pregnant women.^{57,71} Moreover, even when midwives and obstetrical nurses provide women with lifestyle advice, it is not easy for women to adhere to midwives and obstetrical nurses' advice with women facing many challenges to putting the

lifestyle advice provided into practice.⁷² This could be due to a lack of rapport between midwives and obstetrical nurses and pregnant women or mixed messages given by the midwives and obstetrical nurses.^{57,72,73} There have been deficits in communication skills training identified in Iranian practising midwives⁵⁷ and less than 5% of a given curriculum in a medical school being allocated to communication skills training in several countries including Iran, United Kingdom and Netherlands.⁷⁴ Healthcare professionals mostly learn about communication by observing the staff and their peers, who themselves lack sufficient formal communication skills training,^{75,76} or attendance at short passive courses.⁵⁷ Although these observations are the first half of the learning process, communication skills would ideally be complemented by formal interactive training.⁷⁶ This is particularly important for women with maternal overweight or obesity who are often left feeling stigmatised or judged after receiving lifestyle advice.⁷²

Barriers to midwives and obstetrical nurses promoting healthy lifestyles during pregnancy

While midwives and obstetrical nurses have a critical role in supporting women in achieving a healthy lifestyle during pregnancy, external barriers to the delivery of best practice care are well documented, with many at the system and policy level. A lack of time and resources, including human and financial, has consistently been reported by midwives and obstetrical nurses as a barrier to them delivering care that supports healthy lifestyle behaviours and weight gain.^{50,66,69,70,77,78} To address this, health decision-makers must value and prioritise lifestyle interventions. Time and resources are needed for midwives and obstetrical nurses to undertake the training that equips them with the skills to deliver individualised woman-centred care.^{77,78} Furthermore, time is also necessary to meet the needs of women when using this approach.^{50,77,79} Although effective counselling takes time, many midwives have reported that they had less time for appointments and yet were asked to address more health issues within their consultations than before.^{52,78,79} If they cannot balance these priorities, midwives and obstetrical nurses may become unable to address preventive health issues such as healthy eating, physical activity and healthy weight gain.

Healthcare organisations can facilitate or impede lifestyle promotion by midwives and obstetrical nurses. Rapport development with women^{52,79} and access to additional support services such as nutrition and dietetics^{70,80} are important to successful lifestyle promotion. Consequently, fragmented midwifery care with a lack of continuity has been reported as a barrier to care delivery,^{50,52} usually because midwives and obstetrical nurses cannot develop the trusting relationship that is often needed to facilitate behaviour change interventions.^{70,79} Continuity of midwifery care has been shown to enhance satisfaction with antenatal care⁸¹ as well as health outcomes for mothers and offspring.⁸² Midwives have also reported that CoC is an important determinant in the delivery of person-centred care, particularly in relation to lifestyle promotion during pregnancy.⁷⁹

Clinical practice guidelines are designed to support the delivery of quality health care.⁸³ The failure to deliver care optimising diet, physical activity and weight during pregnancy may be influenced by a lack of clear policies and guidelines in this area.^{66,77,70} In Australia, the Pregnancy Care Guidelines have recently been updated to recommend that all women be weighed. These include clear guidance on healthy weight gain in accordance with IOM GWG recommendations,⁸⁴ and recommend that women be provided with healthy eating and physical activity advice during each antenatal visit.⁸⁵ However, without local procedures that support clinical guideline implementation, midwives and obstetrical nurses may still be prevented from providing lifestyle interventions due to pervasive barriers.^{50,70} Therefore, system- and policy-level interventions that can remove such barriers to midwifery care must be identified.

In addition to systemic barriers, midwives and obstetrical nurses may find themselves challenged when delivering lifestyle interventions due to the characteristics of the women and their pregnancies. For example, midwives and obstetrical nurses may not focus on lifestyle issues when dealing with a complicated pregnancy or the presence of other co-morbidities.⁸⁶ While a team of specialists usually manage such pregnancies, women may benefit from basic lifestyle interventions by midwives and obstetrical nurses. It is possible that midwives and obstetrical nurses could promote healthy eating, physical activity and weight management even during difficult

situations if additional time and resources were available. As cultural traditions strongly impact health behaviours during pregnancy, midwives have also reported that counselling becomes difficult when their own recommendations conflict with a pregnant woman's personal beliefs.⁷⁸ These midwives and obstetrical nurses may benefit from a deeper understanding of and greater confidence with flexible lifestyle intervention strategies, although further research is still needed in this area.

Strategies to support midwives and obstetrical nurses in their role

Midwives and obstetrical nurses are well placed to be active listeners with well-developed verbal and non-verbal communication skills to provide women with culturally appropriate, respectful and individualised advice.^{57,73,76} Midwives and obstetrical nurses should be trained in using an interactive and engaging style with pregnant women to help them to identify potential problems, find possible solutions and plan how to achieve the best outcome with reference to their personal experiences and priorities.^{71,87} Supporting women to set their specific, measurable, achievable, realistic and timely (SMART) lifestyle goals maximises the chance of success in behaviour change. Discussing barriers and enablers to achieving the goals in follow-up visits can reinforce the change.⁸⁸ Efficient communication that emphasises the positive outcomes of lifestyle promotion reduces psychological distress and increases the chance of adherence in pregnant women.⁵⁷ Focussing on lifestyle aspects such as diet and physical activity, and factors that might hinder those such as sleep, stress, and work-life balance, rather than weight, may prevent stigmatisation.⁷²

Communication quality can be improved using effective training that addresses both skills and beliefs and builds confidence in midwives and obstetrical nurses to deliver lifestyle management advice.⁷⁶ Approaches for communication skills training range from passive (lecture-based) to highly interactive (i.e. individualised training session).⁷⁴ Interactive approaches require higher training, motivation and more time from health-care professionals. Therefore, to increase participation, training opportunities should be organised with the help of clinic administrators with a consideration for how midwives and obstetrical nurses want to learn.⁷⁴ The integration of training

programmes into routine meetings is a viable option, as it will save time and resources and increase participation rate compared to traditional communication skills training.^{68,74} When student midwives and obstetrical nurses receive pre-clinical training relevant to lifestyle promotion, such as how to have effective conversations with women about weight-related behaviour change, their confidence in and beliefs about the importance of using their learned techniques improve.⁸⁹ In addition, their intention to perform lifestyle promotion is bolstered once they enter practice.⁹⁰ When students attend interactive workshops and undergo training and assessment that incorporate methods featuring exemplary midwifery practice,⁹¹ their confidence can increase even further because they are required to model and demonstrate competencies that they can later apply in placements and professional practice.⁹²

Studies have shown that midwifery placements based in CoC and caseload models acted as valuable learning frameworks for students to practise skills and gain confidence, in addition to these models being valued by women.⁹³⁻⁹⁶ While there is a dearth of published literature about student midwives practising lifestyle promotion in their midwifery placements, CoC models were reportedly more useful for midwives to support women in lifestyle promotion and weight management than non-CoC models.⁷⁹ Correspondingly, CoC placements appear to allow students to effectively practise their skills and develop confidence while following the same women throughout their pregnancies. This may increase their confidence in lifestyle promotion more than fragmented contact with women in team- or hospital-based care models.^{79,97} Some midwives and obstetrical nurses thus gain confidence in lifestyle promotion from specialist pre-clinical knowledge and skills training,^{65,98} whereas many rely on tacit knowledge, self-directed learning^{62,99} or formal professional development to facilitate supportive discussions and lifestyle interventions with women.¹⁰⁰

As improving the confidence of midwives and obstetrical nurses is crucial to both their success and that of the women and children they care for, many training approaches have been used to teach them novel and practical skills. Education integrated into mandatory training programmes,⁶⁸ online training^{101,102} and short intensive courses⁶³ can support midwives and obstetrical nurses by

increasing their knowledge of and providing them with opportunities to practise lifestyle promotion interventions such as behaviour change counselling, goal setting and motivational interviewing^{103,104} while also learning how to incorporate them into routine practice.¹⁰⁵ Practising new techniques like using open-ended questions,¹⁰⁵ engaging in change talk without giving advice⁹⁹ and supporting women to explore and identify their own solutions may be initially challenging for midwives and obstetrical nurses, but it can ultimately be both professionally and personally rewarding.^{104,106} One study reported that midwives who practised their learned counselling skills in a trauma counselling intervention experienced a need to re-evaluate their approach to their usual practice. Despite midwives reporting that making changes compelled by the intervention was difficult and uncomfortable at first, their confidence grew as they practised and counselled more women.¹⁰⁶ Similarly, another study targeted midwives who received training in using brief, opportunistic discussions for behavioural change to improve the diets and physical activity levels of pregnant women; the results of this study reported that midwives found having these discussions and learning to incorporate them into routine care became easier after practising with different women, which built their confidence over time.¹⁰⁵ Notably, the research has indicated that practising these skills in routine care allows midwives to offer the high-quality care that they wish to deliver,¹⁰⁵ leading to their personal and professional satisfaction at having learned new methods to support women.^{104,106}

Conclusions

Midwives and obstetrical nurses play a pivotal role in healthy lifestyle promotion for optimising GWG in pregnant women, as they are key health professionals in contact with women throughout their pregnancy. Addressing midwifery barriers to the provision of best practice care that exist at the individual, system and policy levels is critical to improving health outcomes for mothers and their offspring. Strategies to overcome barriers include (a) ensuring front-line midwives and obstetrical nurses are provided with undergraduate and post-graduate training to be equipped with sufficient knowledge, skills and confidence to communicate with and support women with healthy lifestyle advice including facilitating behaviour change; (b) reforming health systems to dedicate adequate

resources to optimise opportunities for continuity of midwifery care and engaging in dedicated time for training and care provision to ensure midwives and obstetrical nurses can provide lifestyle health promotion within standard care; and (c) to modify health policies to translate evidence into practice by co-designing with consumers and midwives and obstetrical nurses resources, programmes and training to support midwives and obstetrical nurses and antenatal clinics to implement brief lifestyle interventions efficiently during pregnancy to enhance health outcomes of mothers and babies later in life.


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