Pregnant women lack accurate knowledge of their BMI and recommended weight gain during pregnancy

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In the survey by Jeffs et al in this issue of the New Zealand Medical Journal, of 644 pregnant women in the South Island of New Zealand, 66% accurately reported, 31% underestimated and 3% overestimated their body mass index (BMI)—defined as weight/height.² Of concern is that overweight and obese women in this study were more likely to underestimate their BMI, a finding that is commonly reported in the literature.¹

Participants in this study were predominantly of New Zealand European ethnicity and the majority were also highly educated. Hence, the generalisability of these findings to multi-ethnic settings in New Zealand is uncertain. Pregnant women in areas of low health literacy and high deprivation may have lower rates of correctly self-reporting their BMI. A survey we had carried out in South Auckland region of 422 multi-ethnic women in pregnancy showed that overweight and obese women tended to perceive themselves to be lighter on the figure rating scale.² It is also of concern that high BMI may be considered “normal” by some groups in New Zealand, where extreme obesity is common, and by some ethnic groups, especially Pacific. For example, it is frequently verbalised by clinicians at Middlemore Hospital in South Auckland that a woman with a BMI of 30–35kg/m² admitted in labour is considered to have a “normal” BMI, because this BMI is the average in this community.³

BMI should be calculated from a measured maternal weight (in early pregnancy, preferably in the first trimester) and measured height. BMI calculated from self-reported weight or height is often inaccurate, with women tending to underestimate weight and overestimate height resulting in a lower BMI which has implications for clinical practice.⁴

Only 31% of women surveyed in this study were able to correctly report their recommended weight gain in pregnancy. The Institute of Medicine (IOM)⁵ have recommended optimum pregnancy weight gain throughout the whole of pregnancy according to maternal BMI. Recommended weight gains are: underweight (BMI <18.5kg/m²), normal weight (BMI 18.5–24.9kg/m²), overweight (BMI 25–29.9 Kg/m²), obese (BMI≥30) were 12.5–18kg, 11.5–16kg, 7–11.5kg, and 5–9kg, respectively.

Excessive weight gain in pregnancy greater than that recommended by the IOM is associated with increased risks of adverse pregnancy outcomes, namely gestational diabetes, preeclampsia, delivering large for gestational age babies, and caesarean in labour independent of maternal BMI.⁵ New Zealand data are limited, but excessive weight gain in pregnancy was reported in approximately 70% of women in their first pregnancy participating in the Screening for Pregnancy Endpoints (SCOPE) study.⁶ In this study, overweight and obese women were more likely to gain excessive weight during pregnancy when compared to normal weight women.⁶

The low number of women surveyed by Jeffs et al who correctly estimated their optimum gestational weight gain according to their BMI, suggests that there is a general lack of knowledge in women about...
recommended weight gain during pregnancy. The authors are probably correct in extrapolating their study findings to New Zealand as a whole, and suggesting that many pregnant women in New Zealand do not know their BMI and also do not know the amount of weight they should gain during pregnancy.

Furthermore, women with excessive gestational weight gain are at risk of retaining the excess weight postnatally. They are less likely to lose weight between pregnancies, and may enter further pregnancies more overweight or obese. This further compounds the associations between maternal obesity and offspring metabolic dysfunction. The offspring of mothers with excessive gestational weight gain have increased BMI, blood pressure and abnormal metabolic profile in early adult life.7

The findings from this study support the need to strengthen health messages for pregnant women in New Zealand about the importance of optimal weight gain during pregnancy. Achieving weight gain within the IOM guidelines can improve health outcomes for both mothers and babies. A recent Cochrane review8 showed that diet, exercise, or both reduced excessive gestational weight gain by 20%. There was also a 15% reduction in risk of foetal macrosomia in obese pregnant women. Other beneficial outcomes included a reduction in maternal hypertension, caesarean births, and neonatal respiratory distress syndrome. By weighing women early in pregnancy, weight gain can be monitored by weighing at antenatal visits and plotting the weight gain on the chart developed by the New Zealand Ministry of Health “Guidance for Healthy Weight Gain in Pregnancy”.9

The implementation of gestational weight gain guidelines in practice, however, is challenging. Plotting weight may assist women to keep track of their weight and to modify their dietary intake and physical activity. A recent feasibility randomised trial has demonstrated that regular weighing, plotting weight on a chart, and providing feedback about weight gain is acceptable to pregnant women.10 There was a trend to reduced excessive weight gain in women who were randomised to regular weighing and plotting weight, and a large trial is now planned.

As obese women are more likely to gain an excessive amount of weight during pregnancy than non-obese women, there is a need for effective and reproducible interventions in these women.11 With this in mind, a group of New Zealand researchers are trialling dietary education (provided by community health workers) along with probiotics/placebo in obese pregnant women in South Auckland. The aim is to reduce excessive pregnancy weight gain and optimise weight of the baby—see the HUMBA (Healthy Mums and Babies) randomised controlled trial, www.humba.ac.nz. It is also planned to follow these women and children long-term to monitor the later health effects of the dietary education and probiotic treatments. If health benefits are demonstrated, these interventions have been designed to be applicable to clinical practice.

The lead maternity carer system in New Zealand means that the majority of pregnant women receive their antenatal care provided by a self-employed midwife. A smaller proportion receive their antenatal care provided by the hospital/District Health Board, a private obstetrician, or through sole or shared care with a general practitioner. The onus is therefore on all health care professionals providing care to women in pregnancy to have adequate knowledge about healthy nutrition and healthy weight gain in pregnancy, and to be able to counsel pregnant women in their care. The Liggins institute (Gravida) offer free courses and on-line education for health professionals on “healthy conversations”.12 These tools have been developed to assist women to set achievable goals around healthy eating, and aim to stay within recommended weight gain in pregnancy. The New Zealand National Heart Foundation also provide Certificate in Nutrition courses,13 which include healthy nutrition during pregnancy for health professionals, community health workers, or community members interested in helping their communities to eat healthy. These multipronged approaches may help to improve nutrition literacy and support New Zealand women to eat healthy and keep to recommended weight gain in pregnancy.
REFERENCES:


