



Effects of diet counseling on gestational weight gain: a retrospective chart review

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Abstract

This study was designed to evaluate the effectiveness of nutrition consultation in reducing gestational weight gain and its associated complications. A retrospective chart review included 624 obese women at Stony Brook Hospital. 208 (33.3%) were referred for nutrition consultation and 142 (22.8%) completed consultation. Women who completed a formal nutrition consult gained less weight than those who did not (8.8 kg versus 10.3 kg, $p = 0.027$), and women who were referred for but did not complete nutritional counseling gained less weight than those who were not referred (8.9 kg versus 10.5 kg, $p = 0.008$). Nutrition consultation did not significantly affect secondary outcomes. This study demonstrates that nutritional counseling is an effective method for decreasing gestational weight gain in obese patients, however additional interventions are likely required to improve obstetric outcomes.

Objectives

To determine if dietary intervention in the form of a single 45-minute nutrition consultation is effective in reducing gestational weight gain and its associated complications.

Study Design

- Retrospective chart review
- Inclusion criteria:** Obese pregnant women (based on BMI at initial prenatal visit) with a singleton gestation who delivered term neonates at Stony Brook University Hospital between January 2016 - December 2017
- Exclusion criteria:** Women less than 18 years of age, care established or transferred care after first trimester, scant prenatal care
- Primary outcome:** Gestational weight gain
- Secondary outcomes:** Complications associated with excessive gestational weight gain
- Data was analyzed using two-sided t-tests, chi-square tests, linear regression, and non-parametric statistical methods

Results

Consult Ordered?	n	Mean Gestational Weight Gain (kg) +/- SD	p value
No	416	10.5 +/- 7.0	<0.001
Yes	208	8.9 +/- 7.9	

Consult Done?	n	Mean Gestational Weight Gain (kg) +/- SD	p value
No	482	10.3 +/- 7.3	0.01
Yes	142	8.8 +/- 7.6	

Table 1. Primary outcome: Gestational weight gain based on whether a consult was ordered, and whether a consult was completed

Outcome	Not Ordered	Ordered (Not Done)	Done	p value
Mode of Delivery				
Vaginal	59.6%	59.1%	48.6%	0.068
Cesarean	40.4%	40.9%	51.4%	
3rd or 4th degree lac				
Yes	1.6%	0%	2.9%	0.53
No	98.4%	100%	97.1%	
Hyperbilirubinemia				
Yes	10.4%	9.1%	13.4%	0.537
No	89.6%	90.9%	86.6%	
Shoulder dystocia				
Yes	2.4%	0%	4.3%	0.374
No	97.6%	100%	95.7%	
Newborn weight				
Mean (g)	3473 +/- 499	3475 +/- 525	3468 +/- 466	0.008

Table 2. Secondary outcomes included mode of delivery, incidence of 3rd/4th degree lacerations, hyperbilirubinemia, shoulder dystocia, and newborn weight

Conclusion

This study highlights the importance of nutrition education which did have a statistically significant effect on gestational weight gain (10.5 kg in women who were not referred versus 8.9 kg in women who were). A similar difference was observed between patients who ultimately did not complete a consult versus those who did (10.3 kg versus 8.8 kg, respectively). In comparing the differences between patients who were referred for nutrition consult and those who completed the consult after initial referral, there was no significant difference. This suggests that the mere act of addressing the patient's obesity by discussing recommendations early in pregnancy seems to reduce gestational weight gain by approximately 1.5 kg, whether an additional dedicated consultation is obtained or not.

In this population, the studied intervention was successful in keeping patients under the 20 lbs weight gain limit recommended for obese pregnant women. However, our nutrition referral was not enough to translate into clinically significant differences in the secondary outcomes included.

Past research has revealed the best time to address obesity is before pregnancy, thus providers should make active efforts to discuss healthy weight at annual exams and pre-conception counseling. However, pregnancy offers a unique opportunity to address obesity in many otherwise healthy women. The act of discussing nutrition appears to influence gestational weight gain to a degree. Future research might look to broader social intervention which is likely necessary to decrease prevalence of obesity and improve pregnancy outcomes.

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