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Is perception of excessive weight gain in a woman's last pregnancy associated with less weight gain in her current pregnancy?

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Abstract

We explored whether a woman's perceptions of the appropriateness of her gestational weight gain (GWG) in her most recent prior pregnancy was associated with the altered weight gain in her current pregnancy. Parous pregnant women reported GWG in their most recent previous pregnancy and their perceptions of the appropriateness of this gain. GWG from the current pregnancy was abstracted from the obstetric records. On average, women (N = 57) were 29.8 (SD: 4.4) years old and 24.5 (SD: 6.5) weeks of gestation; 28% were overweight and 16% were obese before the current pregnancy. The median differences in the GWG across the pregnancies was –5 pounds (inter-quartile range [IQR]: –24,+2) for the women who thought their previous GWG was too much, +1 pounds (IQR: –10,+8) for the women who thought they gained the right amount, and +10 pounds (IQR: +5,+18) for the women who thought they gained too little. Further research is needed to understand how perceptions about previous GWG influences weight gain during subsequent pregnancies.

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Introduction

Gestational weight gain (GWG) within the ranges recommended by the Institute of Medicine (IOM) is associated with optimised maternal and child health outcomes, yet many women gain more than recommended (Institute of Medicine (IOM) and National Research Council (NRC) 2009). GWG is highly concordant across pregnancies; 57–64% of women with excessive GWG subsequently gain above the IOM-recommended ranges (Chin et al. 2010; Waring et al. 2013), but it is unknown whether their subsequent GWG, although excessive, is reduced. Adults who perceive themselves to be as overweight or obese are more likely to attempt weight loss (Lemon et al. 2009). We explored whether the perceived appropriateness of a woman's previous GWG was associated with the altered GWG in her current pregnancy.

Materials and methods

The data were derived from a prospective cohort of pregnant women. The women were recruited from the obstetric practices at the University of Massachusetts Memorial Health Care (UMMHC) and the Worcester, Massachusetts community in 2013–2014. The inclusion criteria were an age of ≥ 18 years old, a singleton gestation of 14–36 weeks, a pre-pregnancy BMI 18.5–40 kg/m², a plan to deliver at UMMHC, and being English-speaking. Medical conditions or the use of medications affecting weight, use of medications to treat an opioid dependence, a previous weight loss surgery, or the current participation in a weight loss program were exclusionary. The participants provided informed consent and completed self-report measures at an in-person visit. Following the delivery, the staff abstracted obstetric records. The University of Massachusetts Medical School's Institutional Review Board approved the study.

The current analysis included only parous women. The participants reported their pre-pregnancy weight and their GWG for their most recent previous pregnancy, and answered 'Do you think the amount of weight you gained in your most recent pregnancy was too much, about the right amount, or too little?'. Current GWG was calculated from the pre-pregnancy weight self-reported at the enrolment and, as available, the latest measured prenatal weight within 7 days of the delivery (N = 33; 58%), the admission weight recorded in the delivery records (N = 21; 37%), or the self-reported admission weight for women who did not deliver at UMMHC (N = 3; 5%). We calculated a difference in the GWG by subtracting the current GWG from the previous GWG. We categorised the current and previous pre-pregnancy BMI as the normal weight (18.5 kg/m² ≤ BMI < 25 kg/m²), overweight (25 kg/m² ≤ BMI < 30 kg/m²), and obese (30 kg/m² ≤ BMI) (Institute of Medicine (IOM) and National Research Council (NRC) 2009). Previous and current GWG were categorised as inadequate, appropriate, or excessive if below, within, or above the IOM-recommended ranges, respectively (Institute of Medicine (IOM) and National Research Council (NRC) 2009).

We described the differences in GWG by the perceived appropriateness of the previous GWG, in the full analytic sample, among the women with the same pre-pregnancy BMI category across pregnancies (i.e., same recommended GWG), and among the women whose

previous GWG was excessive. As we did not have information on whether the most recent previous pregnancy resulted in a full-term delivery, we conducted a sensitivity analysis among the women whose pregnancy histories included only full-term deliveries. The analyses were conducted in SAS 9.4 (SAS Institute, Inc., Cary, NC).

Results

Of the 125 pregnant women enrolled in the parent study, 75 were parous. We excluded women who were missing previous ($N = 17$) or current GWG ($N = 1$), resulting in an analytic sample of 57 women. On average, women were 29.8 (SD 4.4) years old and 24.5 (SD 6.5) weeks of gestation at enrolment. Pre-pregnancy, 56% of women were normal weight, 28% overweight, and 16% obese. Fifty-four percent were non-Hispanic White, 23% Hispanic/Latina, 12% Asian, and 11% non-Hispanic Black. Seventy-three percent were married/cohabitating, and 37% reported a difficulty in paying for basics.

The median differences in GWG across pregnancies was -5 pounds (inter-quartile range [IQR]: -24 , $+2$) for the women who thought that their previous GWG was too much, $+1$ pounds (IQR: -10 , $+8$) for the women who thought they had gained the right amount, and $+10$ pounds (IQR: $+5$, $+18$) for the women who thought they had gained too little (Table I). The results among the women with the same pre-pregnancy BMI category for both pregnancies ($N = 42$) were consistent (Table I). Among the women with a previous excessive GWG ($N = 30$; 53% of the sample), 57% had an excessive current GWG, yet the majority had gained less in their current pregnancy (Table I). The results among the women whose pregnancy histories included only full-term deliveries ($N = 39$) were similar to the main analysis (Table I).

Discussion

This exploratory study suggests that women who perceive their previous GWG as excessive may tend to gain less in their subsequent pregnancies. Similar to previous research (Chin et al. 2010; Waring et al. 2013), 57% of women with an excessive previous GWG exceeded the IOM recommendations in their current pregnancy, but for the majority current GWG was less than previous GWG, consistent with the viewpoint that multiple factors influence GWG (Institute of Medicine (IOM) and National Research Council (NRC) 2009; Vanstone et al. 2017).

Due to the modest sample size, findings should be considered as hypothesis-generating. We do not know if women's most recent pregnancy resulted in a full-term live birth, and thus previous GWG could represent the gain during a short pregnancy. However, the results among the women whose pregnancy histories included only full-term deliveries were consistent with the main findings. Previous pregnancy GWG was self-reported (Headen et al. 2017), and it is unknown whether the accuracy of recall differs by the perceptions of the appropriateness of gain.

This exploratory study extends the emerging literature on examining how women's attitudes about weight gain influence GWG. Further research is needed to understand how perceptions of previous GWG influences weight gain during pregnancy.

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Table I.

Difference in gestational weight gain in women's current versus most recent previous pregnancy, by women's perceptions of appropriateness of weight gain in previous pregnancy

	Perceptions of appropriateness of weight gain in most recent previous pregnancy		
	Too much	About the right amount	Too little
Full analytic sample (N=57)			
n (% of sample)	17 (30)	35 (61)	5 (9)
Difference in GWG, median (IQR)	-5 (-24, 2)	1 (-10, 8)	10 (5, 18)
Gained less in current pregnancy, n (%)	10 (59)	14 (40)	1 (20)
Women with same pre-pregnancy BMI category in both pregnancies (N=42)			
n (% of sample)	14 (33)	24 (57)	4 (10)
Difference in GWG, median (IQR)	-4 (-23, 3)	0 (-8.5, 6)	11.5 (-0.5, 21)
Gained less in current pregnancy, n (%)	8 (57)	11 (46)	1 (25)
Women with excessive GWG in most recent previous pregnancy (N=30)			
n (% of sample)	14 (47)	15 (50)	1 (3)
Difference in GWG, median (IQR)	-9 (-28, 1)	-10 (-26, 0)	18 (n/a)
Gained less in current pregnancy, n (%)	10 (71)	11 (73)	0 (0)
Women whose previous pregnancies were all delivered full-term (N=39)			
n (% of sample)	10 (26)	26 (67)	3 (8)
Difference in GWG, median (IQR)	-4 (-12, 2)	1.5 (-5, 10)	5 (-6, 24)
Gained less in current pregnancy, n (%)	6 (60)	10 (38)	1 (33)