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Prenatal Weight Gain: Who is Counseled?

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Abstract

Background: Because prenatal counseling is associated with adherence to weight gain guidelines, we sought to identify patient-level characteristics associated with the receipt of counseling on weight gain, nutrition, and exercise during prenatal care.
Methods: We performed a secondary data analysis on a cohort of women enrolled in a prenatal counseling intervention study. We controlled for study group assignment (intervention versus usual care) as well as patient characteristics in a multivariable analysis. We performed three separate multivariable analyses for predictors of provider-patient discussions about (1) weight gain, (2) nutrition, and (3) exercise.
Results: The cohort consisted of 311 predominantly low-income prenatal patients receiving care at several sites in the San Francisco Bay Area. Prepregnancy body mass index, nutrition knowledge, maternal age, parity, and type of insurance were not significantly associated with receipt of counseling about weight gain, nutrition, and exercise. In the multivariable analysis, white women were significantly less likely to be counseled about nutrition than non-white women ($p = 0.02$). Former smokers were more likely to receive counseling about nutrition and exercise than never smokers ($p < 0.05$). More advanced gestational age was associated with a higher rate of counseling on weight gain ($p = 0.01$).
Conclusions: Despite having the highest rates of excessive weight gain nationally, white women were the least likely to receive counseling about nutrition during pregnancy. Interventions that prompt clinicians and simplify counseling may improve counseling rates for all patients during prenatal care.

Introduction

Appropriate weight gain, diet, and exercise are important factors in both pregnancy outcome and the long-term health of mother and child.[1] Women who gain more than the recommended range according to Institute of Medicine guidelines have increased risks of a host of adverse pregnancy outcomes, including gestational diabetes, prolonged labor, preeclampsia, and cesarean birth.[2–5] Women with excessive gestational weight gain are more likely to retain their pregnancy weight long-term and may therefore experience the cardiometabolic risks of obesity.[6,7] Their infants have increased neonatal morbidity,[8,9] and there is increasing evidence that excessive weight gain during pregnancy is associated with childhood overweight and adverse metabolic health for the offspring.[10,11]

Women who receive appropriate pregnancy weight gain advice from their prenatal care providers are more likely to gain within the Institute of Medicine weight gain guidelines.[12] Pregnancy is an opportune time to engage women in efforts to improve health behaviors because prenatal visits provide frequent contacts with the health-care system and women may be more motivated to make changes for the sake of their baby.[13–15] In a randomized trial, basic weight gain and diet counseling by prenatal care providers during pregnancy has been shown to result in lower average weight gain among prenatal care patients.[16]

However, there is evidence that counseling about diet, exercise, and weight gain is often inadequate in prenatal and primary care settings. According to the American Congress of Obstetricians and Gynecologists (ACOG), all prenatal patients should receive counseling about weight gain, diet, and exercise,[17] but approximately one third of such patients report receiving no advice on pregnancy weight gain.[12,18] A qualitative study of prenatal care providers identified many barriers to weight gain, diet, and exercise counseling during pregnancy.[19] These factors included patient characteristics, including patient obesity (providers were apprehensive about the sensitivity of this topic) and patient race/ethnicity (providers felt that cultural factors reduced the efficacy of their

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counseling). Regarding cultural factors, cultural discordance between providers and patients (e.g., Latina patient, non-Latino provider) reduced the confidence of providers around prenatal counseling on diet, exercise, and weight gain. Providers also expressed concern that their lower-income patients might not have resources to exercise or to access healthy foods.

The objective of this study was to determine whether the patient characteristics identified in our qualitative work with providers as barriers to counseling, predict provider–patient counseling in the prenatal care setting. These factors were prepregnancy body mass index (BMI), income, education, parity, and race/ethnicity. Identification of certain groups of patients who are less likely to receive appropriate counseling would allow for interventions to target those women and their prenatal care providers. This observational study was a secondary data analysis from a randomized trial of a computerized prenatal counseling intervention, entitled Keep Fit.[20]

Materials and Methods

The analysis described in this manuscript is a secondary data analysis from a randomized controlled trial entitled Health in Pregnancy (HIP). The methods and primary outcome results from the clinical trial have been described previously.[20] Keep Fit was a secondary arm of HIP. The primary arm of HIP evaluated the effectiveness of the Video Doctor, an interactive multimedia program, for reducing substance use and intimate partner violence in pregnancy.[21–23] Women who did not report smoking, alcohol use, drug use, or intimate partner violence were not eligible for the primary arm of HIP and were offered enrollment in the Keep Fit arm. The goals of Keep Fit were to increase clinician counseling, improve women's behaviors around diet and exercise in pregnancy, and ultimately prevent excessive gestational weight gain. Keep Fit was incorporated into five prenatal care practices in the San Francisco Bay Area, including three public hospitals, two academic practices, and a community hospital. English-speaking women 18 years or older and less than 26 weeks of gestation were eligible for enrollment. Study procedures were approved by the University of California San Francisco's Committee on Human Research and the institutional review boards at each site. Prior to a routine prenatal appointment, participants used a laptop computer to complete the Video Doctor program. At the conclusion of the session, the program printed a Cueing Sheet for the clinician, which offered a summary of the patient's risk profile and readiness to change, and suggested counseling statements. The participant then proceeded to her prenatal care appointment and afterward returned to the research assistant to report whether nutrition, exercise, or weight had been discussed and to obtain a computer-generated Educational Worksheet specific to the patient's risk profile and readiness to change. A full description of the study methods and primary outcomes for Keep Fit has been previously published.[20] Video Doctor clips can be viewed at the following URL: http://chips.ucsf.edu/(new)research-prenatal-fit.htm.

Sample selection

Out of the 321 participants enrolled in the *Keep Fit* trial, we excluded 10 participants from the current analysis because they did not provide data on whether or not a discussion with their provider occurred at their just-completed prenatal visit on any of the three health topics (weight, nutrition, or exercise). Thus, the current analysis included baseline data from 311 participants. When compared with the participants included in this analysis, the excluded participants were similar except that they were more likely to be randomized into the Video Doctor intervention (90% vs. 47.9%, $p = 0.01$) and to have a normal or low BMI (90% vs. 54.7%, $p = 0.047$).

Measures

Background characteristics. As part of the computerized baseline assessment, the following demographic variables were assessed: age, race/ethnicity, marital status, educational attainment, and Medicaid enrollment. Pregnancy history and status variables included whether participants were previously pregnant and gestational weeks at baseline assessment. Tobacco use was measured by asking participants to choose from a list of seven statements to best describe their cigarette smoking: 1 = I smoke regularly now, about the same amount as before finding out I was pregnant; 2 = I smoke some now, but I've cut down since I found out I was pregnant; 3 = I smoke a cigarette every once in a while; 4 = I smoke a few puffs from a cigarette every once in a while; 5 = I stopped smoking after I found out I was pregnant and am not smoking now; 6 = I stopped smoking before I found out I was pregnant and am not smoking now; 7 = I have never smoked or have smoked fewer than 100 cigarettes in my lifetime. Participants who indicated having never smoked or having smoked fewer than 100 cigarettes comprised the "never smoker" group; the remaining participants were grouped into "former smoker" with no participants enrolled in the study reporting use of cigarettes in the past 30 days (current smokers were directed to the primary arm of the HIP study and thus were not eligible for Keep Fit). BMI was computed from self-reported prepregnancy weight and height. The 1990 Institute of Medicine BMI categories were used: underweight (< 19.8), normal (19.8–26.0), overweight (26.0–29.0), and obese (≥ 29.0).[24] Because of the small number of participants ($n = 28$, 9.0%) whose BMI was in the underweight category, they were grouped together with the participants of normal BMI for the analyses. Participants were grouped into three BMI categories: normal/underweight, overweight, and obese. Physical activity was assessed by two questions:

(1) During the past month, how often did you exercise (for example, brisk walking, bicycling, hiking, or exercise at a gym)?
(2) On average, about how many minutes did you spend exercising each time you exercised?

A new variable was computed based on the responses from the two questions to indicate whether or not participants reported exercising at least 30 minutes each day for at least 4 days per week, consistent with ACOG recommendations.[25] Treatment condition was randomly assigned by a computer program at the end of the baseline computerized assessment prior to the routine prenatal visit. All eligible participants were assigned to either the Video Doctor intervention or the usual care. Clinic types were defined into three categories according to the recruitment clinic site: (1) county hospitals, (2) community-based clinics, and (3) academic medical clinics.

Nutrition knowledge was assessed using a quiz of 17 true/false questions reflecting the nutritional education contained within the Video Doctor program.

Outcome variables. The primary outcome measures for this analysis were participants' self-report of the occurrence of counseling in each of the three health topics: weight gain, nutrition, and exercise. During the post visit interview at baseline, participants were asked the following questions:

(1) Did you talk about keeping active with your doctor today?
(2) Did you talk about healthy eating with your doctor today?
(3) Did you talk about weight gain during pregnancy with your doctor today?

An affirmative response to these questions was used to indicate that counseling on the corresponding topic took place.

Data analyses. Data were analyzed using SPSS 18.0. We examined bivariate associations of each participant characteristic with each outcome variable using Pearson's chi-square tests. Based on the sample distribution of the continuous variables (age, gestational age, and nutrition knowledge score), these variables were dichotomized based on the median of each measure of the study sample to provide optimal statistical power for the analyses and result interpretation. Age was coded into 18–24 years versus 25 years or older; gestational age was coded into 19 weeks or less versus 20 weeks or more; and nutrition knowledge was coded into low (below the median score of 11) versus high knowledge level (at the median score of 11 or higher). Multivariate logistic regression models were then conducted separately for each outcome variable. All multivariate regression models controlled for treatment condition (Video Doctor versus usual care) and clinic type. Models also included the following preselected *a priori* covariates which are relevant patient-level specific to each outcome of interest (BMI for weight discussion, nutrition knowledge score for nutrition discussion, and physical activity level for exercise discussion), and variables that attained a p value ≤ 0.25 in the bivariate associations with at least one of the three outcome variables. For each multivariate model, we computed the variance inflation factors as a multicollinearity diagnostic statistic to assess the impact of interdependencies (multicollinearity) among the covariates included in the model. The computed variance inflation factors suggested only weak dependencies and therefore no modifications were made to the variables included in the multivariate models.

Results

Sample characteristics

Table 1 shows the characteristics of the study sample ($n = 311$); 48% received the Video Doctor intervention. Two thirds were recruited from county hospitals; the mean age of the participants was 26.5 years (median age = 24 years; range = 18–44 years). The sample was ethnically diverse, consisting of 40% Hispanic, 24% African American, 13% white, and 24% of other or multiple races. At the time of their participation, half of the women (54%) were married or in a domestic partnership; 77% had education beyond high school; and 85% were enrolled in Medicaid. Half had previous pregnancies, and the average gestational age was 18.3 weeks (median = 19 weeks; range = 3–25 weeks). A majority of the participants (68%) were never smokers; among the former smokers, 56% reported stopping smoking after finding out about their current pregnancy. Nearly half (45%) of the study sample had prepregnancy BMI in the overweight or obese range. Most participants (78%) did not meet the physical activity recommendation and reported exercising less than 30 minutes on most days.

Table 1. Sample Characteristics ($N = 311$)

	n	% or mean (SD)[a]
Treatment		
Video Doctor	149	47.9%
Usual care	162	52.1%
Clinic type		
County hospitals	208	66.9%
Community	68	21.9%
Academic	35	11.3%
Age	310	26.45 (5.94)
Race		
Hispanic	125	40.2%
African American	73	23.5%
Asian/PI[b]/other	73	23.5%
White	40	12.9%
Married	167	53.7%
Education		
Less than high school	71	23.1%
High school graduate	69	22.5%
Some college	101	32.9%
College graduate	66	21.5%
Medicaid	266	85.8%
Gestational age (weeks)	306	18.29 (5.08)
Multiparous	156	50.2%
Smoking status		
Never smoker	210	67.7%
Former smoker	100	32.3%
BMI categories		
Normal or low (≤ 25)	170	54.7%
Overweight (26–28)	45	14.5%
Obese (≥ 29)	96	30.9%
Nutrition knowledge score	306	11.20 (3.65)
Exercise >30 minutes for at least 4 days/week	66	21.6%

[a]Percentages reported were computed with missing data excluded. Percentages may not add up exactly to 100% due to rounding error.
[b]PI, Pacific Islander.

Factors associated with provider–patient discussion about weight gain, nutrition, and exercise; unadjusted analyses

Based on participants' self-report at the post-visit interview assessment, the rates of discussion across the three topics ranged from 65% to 69% in the entire study sample. As shown in Table 2, at a bivariate level, only gestational age was associated with the occurrence of provider–patient discussions about weight gain. In the unadjusted analyses, clinic setting, race, and education were associated with counseling about

Table 2. Self-Report of Discussion with Provider on Weight, Nutrition, and Exercise by Participant Characteristic

	Weight		*Nutrition*		*Exercise*	
	Discussed	p *value*	*Discussed*	p *value*	*Discussed*	p *value*
Entire study sample	67.4%	—	68.6%	—	65.3%	—
Treatment						
Video Doctor	76.4%	0.001	81.2%	<0.001	76.7%	<0.001
Usual care	59.3%		56.9%		54.9%	
Clinic type						
County hospitals	68.3%	0.682	69.4%	0.041	70.0%	0.020
Community	70.6%		82.9%		63.6%	
Academic	63.2%		58.8%		51.5%	
Age (years)						
18–24	65.0%	0.428	73.4%	0.084	69.0%	0.187
≥25	69.3%		64.2%		61.8%	
Race						
Hispanic	64.0%	0.194	69.1%	0.001	65.0%	0.067
African American	77.8%		75.3%		75.0%	
Asian/PI/other	65.8%		75.3%		64.4%	
White	62.5%		42.5%		50.0%	
Marital status						
Not currently married	72.0%	0.109	71.8%	0.260	70.4%	0.078
Currently married or in domestic partnership	63.5%		65.9%		60.8%	
Education						
Less than high school	64.8%	0.342	71.4%	0.006	63.4%	0.068
High school graduate	63.5%		69.6%		71.6%	
Some college	74.3%		76.2%		71.0%	
College graduate	63.6%		50.8%		53.0%	
Medicaid						
Yes	67.5%	0.830	70.5%	0.071	68.3%	0.004
No	65.9%		56.8%		45.2%	
Gestational age (weeks)						
≤19	60.7%	0.010	66.9%	0.530	66.0%	0.780
≥20	74.6%		70.2%		64.5%	
Multiparous						
Yes	65.2%	0.396	71.0%	0.370	69.5%	0.120
No	69.7%		66.2%		61.0%	
Smoking status						
Never	65.6%	0.257	66.5%	0.201	60.9%	0.015
Former	72.0%		73.7%		75.0%	
BMI categories						
Overweight (26–28)	68.2%	0.924	68.2%	0.085	70.5%	0.022
Obese (≥29)	68.8%		77.1%		74.7%	
Normal or low (<26)	66.5%		63.9%		58.6%	
Nutrition knowledge score						
Low	65.1%	0.505	70.6%	0.424	68.0%	0.475
High (scored above median)	68.7%		66.3%		64.0%	
Physical activity level						
Low	68.2%	0.813	68.5%	0.672	63.7%	0.386
Moderate/high (exercise >30 minutes on at least 4 days/week)	66.7%		71.2%		69.7%	

Percentages based on self-report from participants. *P* values are obtained from bivariate comparison between each characteristic and each outcome using Pearson's chi-square tests.

nutrition. Discussions on nutrition were reported by 82.9% of patients at a community clinic versus 58.8% in the academic clinic ($p=0.041$). White women were least likely to report provider–patient discussions about nutrition (45.2%), while African-American and Asian women were the most likely (both 75.3%, $p=0.001$). The occurrence of discussions about exercise was associated with clinic setting, Medicaid enrollment, former smoking, and BMI. Of those enrolled in Medicaid, 68.3% reported discussion with their provider about exercise versus 45.2% of those not on Medicaid ($p=0.004$).

Table 3 shows the multivariate logistic regression models for each outcome variable. Independent of the treatment condition (Video Doctor vs. usual care), gestational age was significantly associated with weight gain counseling.

Table 3. Multivariate Models of Significant Patient-Level Factors Associated with Discussion with Prenatal Providers on Weight, Nutrition, and Exercise

Topics discussed with provider (n *included in each model)*	*Weight* (n = *294)*		*Nutrition* (n = *293)*		*Exercise* (n = *292)*	
	OR (95% CI)	p *value*	*OR (95% CI)*	p *value*	*OR (95% CI)*	p *value*
Race						
Hispanic	1.29 (0.54–3.10)	0.564	2.84 (1.12–7.23)	0.028	1.50 (0.60–3.75)	0.380
African American	2.23 (0.83–5.98)	0.111	4.31 (1.57–11.85)	0.005	2.70 (0.99–7.39)	0.055
Asian/PI/Other	1.01 (0.42–2.43)	0.975	4.85 (1.85–12.67)	0.001	1.49 (0.59–3.71)	0.398
White	Referent		Referent		Referent	
Education						
Less than high school	0.80 (0.31–2.13)	0.654	2.17 (0.78–6.07)	0.139	0.49 (0.18–1.30)	0.162
High school graduate	0.69 (0.28–1.88)	0.447	1.36 (0.50–3.72)	0.545	0.79 (0.30–2.13)	0.646
Some college	1.41 (0.62–3.19)	0.417	2.98 (1.25–7.07)	0.014	1.23 (0.55–2.77)	0.611
College graduate	Referent		Referent		Referent	
Gestational age (weeks)						
≥20	1.95 (1.14–3.34)	0.014	1.09 (0.62–1.92)	0.758	0.90 (0.52–1.54)	0.693
≤19	Referent		Referent		Referent	
Smoking status						
Former smoker	1.59 (0.88–2.86)	0.124	1.93 (1.02–3.66)	0.045	1.95 (1.06–3.57)	0.031
Never smoker	Referent		Referent		Referent	

All multivariate models were adjusted for treatment conditions (Video Doctor vs. usual care) and clinic type (county hospitals, community, or academic). An identical set of predictor variables was examined in each model. The following nonsignificant ($p > 0.05$) patient-level variables were included in the analyses, but their estimates were not presented in the table: age, marital status, Medicaid, multiparous, BMI, nutrition knowledge score, and physical activity level.

Participants who were at a more advanced gestational age, 20 weeks or beyond, were more likely to report having such counseling compared with participants who were at 19 weeks or less. Receiving prenatal care in community clinic settings, being non-white, having had some college education, and being a former smoker were independent factors associated with reporting having counseling about nutrition regardless of the intervention received. Receiving prenatal care in county hospitals and being a former smoker were significant factors associated with the occurrence of counseling about exercise, independent of receipt of the Video Doctor intervention.

As a secondary analysis, we re-ran our multivariable models stratified by treatment group (Video Doctor versus usual care) and found similar trends. Since the cell sizes were small after stratification, we do not report these results separately.

Discussion

Despite the increasing emphasis on weight gain during pregnancy and the current obesity epidemic, approximately 40% of women receiving usual care and 24% of women receiving the intervention stated they received no counseling on weight gain at the index prenatal visit. In this study we only measured counseling at one routine prenatal visit, so we do not know what counseling took place at other prenatal visits. However, ACOG recommends weighing patients at each prenatal visit and advising women based on their ongoing weight gain.[17] Other studies in the literature report even lower rates of weight gain counseling throughout pregnancy. Two older surveys of prenatal patients demonstrated that approximately one third of women received no advice during pregnancy about how much weight to gain.[12,18] Most recently, McDonald et al.[26] surveyed 310 mostly white women in Ontario, Canada, in the third trimester of pregnancy and found that only 47.2% of women reported any weight gain advice from their prenatal care provider, and only 28.2% received advice to gain within a specific range. Phelan et al.[27] studied 401 women in Providence, Rhode Island, at <16 weeks gestation and found that 41.7% reported receiving weight gain advice. Since the clinics in our study were taking part in an intervention study to increase counseling, we might expect higher counseling rates, even among women randomized to usual care. Therefore, our findings may overestimate typical counseling rates in prenatal care settings.

Contrary to our hypotheses, we did not find that the frequency of provider–patient discussion on diet, exercise, and weight gain varied by the patient's prepregnancy BMI. Phelan et al.[27] also reported no difference in counseling rates by prepregnancy BMI in a multivariable analysis. While we expected that women with overweight and obesity would be more likely to receive counseling, our qualitative work suggested that providers are sometimes wary of addressing these topics with these patients for fear of causing feelings of shame or embarrassment.[19] Providers described avoiding the topic of weight among women with obesity or waiting for the patient to bring it up. This reluctance to cause negative feelings may explain at least in part why we did not find higher rates of discussion among the women who may need it the most.

We found that rates of provider–patient discussion about nutrition, exercise, and weight gain varied significantly by patient and clinic characteristics. Maternal race/ethnicity was not associated with provider–patient discussions about weight gain or exercise, but white women in our sample were the least likely to report discussions about nutrition in the multivariate analysis. The reasons for this are unclear, though we speculate that providers may presume lower knowledge about nutrition among their non-white patients and therefore counsel accordingly. Of note, in a population-based sample of U.S. women, white women had the highest rates of weight

gain (≥45 lb. [20.4 kg]).[28] It is possible that this counseling disparity explains at least in part why white women are more likely to gain excessive weight, though further research would be needed to confirm this.

Women who were surveyed earlier in gestation (<20 weeks) were less likely to report provider–patient discussions about weight gain than women who were seen later in gestation (≥20 weeks). It is possible that women who are later in gestation are more likely to have already gained excessive weight and therefore are more likely to be counseled about weight gain. In our qualitative work, we found that many providers did not address weight gain until abnormal weight gain was identified.[19] A more proactive counseling approach early in pregnancy (<20 weeks) could prevent later excessive weight gain, especially since prenatal visits are more infrequent early in pregnancy.

Former smokers were significantly more likely to report provider–patient discussions about nutrition and exercise, but not weight gain. This finding is interesting given that former smokers are more likely to gain excessive pregnancy weight compared with never smokers, and thus may need more intensive diet and exercise counseling.[29] While we do not know whether the discussion was initiated by the patient or the provider, we hypothesize that former smokers may be more proactive in asking their providers about diet and exercise. Further research regarding interventions to prevent excess weight gain (as well as smoking relapse) among pregnant former smokers is warranted.

Some differences were observed by type of health-care setting; patients seen in academic centers were the least likely to report provider–patient discussion on nutrition and exercise. While we do not have data on type of provider (physician, resident, midwife, nurse practitioner), it is possible that physicians (including residents) did a higher percentage of the care at the academic centers and were less likely to initiate discussions with patients on these topics. In our qualitative research, nurse practitioners and midwives expressed higher confidence in their training and skills around lifestyle counseling compared with obstetricians/gynecologists. Improving the curricula of medical schools and residency programs around nutrition and exercise and prenatal counseling on these topics may be one area to target in order to improve prenatal counseling rates and quality.

Some limitations of this analysis should be noted. First, we did not collect data on individual provider characteristics, so we were only able to study patient-level predictors of counseling. It is likely that there are interactions between clinician-level and patient-level predictors of counseling. For example, in a mailed survey of pediatricians in North Carolina, self-perceived weight status was associated with physician comfort providing obesity counseling. Self-classified "thin" pediatricians had nearly six times the odds of reporting more counseling difficulty as a result of their weight than "average" weight pediatricians (OR = 5.69; 95% CI = 2.30, 14.1), and self-identified "overweight" pediatricians reported nearly four times as great counseling difficulty as "average" weight physicians (OR = 3.84; 95% CI = 1.11, 13.3).[30] Also, nurse practitioners and certified-nurse midwives in our focus group study reported more training and confidence regarding counseling on nutrition, exercise, and weight gain than did obstetricians/gynecologists,[19] and this may explain some of the differences we saw between type of clinic; we do not have data, however, linking the type of provider to the patient. Second, these data represent a cross-sectional observation of provider–patient counseling during prenatal care, and thus we did not measure what counseling took place across the course of the pregnancy. However, since weight gain, diet, and exercise are considered key topics that should be discussed at most, if not all prenatal visits, we feel that these data are still an important window into the frequency and predictors of such counseling. Third, while our study was performed among diverse clinical settings (academic hospital, county hospital, community-based clinic), it was limited to the San Francisco Bay Area and thus may not be generalizable to other regions of the United States. Fourth, we did not assess whether provider–patient discussions were initiated by the provider versus the patient, and we did not assess the detailed content of the discussion, so we do not know whether clinically useful or appropriate advice was given.

Our analysis revealed several areas where the frequency of prenatal counseling on weight gain, nutrition, and exercise could be improved. Improving training of clinicians, particularly physicians, could improve the quality and frequency of counseling across clinical settings. Beginning weight gain counseling early in pregnancy and counseling consistently across all patient groups may reduce rates of excessive gestational weight gain. By helping women gain within the Institute of Medicine guidelines, we can improve long-term health for both mothers and their children.

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Author Disclosure

No competing financial interests exist.

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