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Preventing Excessive Weight Gain in Pregnancy: How Do Prenatal Care Providers Approach Counseling?

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Abstract

Background: Excessive weight gain during pregnancy is becoming more common and is associated with many adverse maternal and infant outcomes. There is a paucity of data on how weight gain counseling is actually provided in prenatal care settings. Our objective was to study prenatal care providers and their knowledge, attitudes, and practices regarding prevention of excessive weight gain during pregnancy and, secondarily, their approach to nutrition and physical activity counseling during pregnancy.
Methods: We conducted seven focus groups of general obstetrician/gynecologists, midwives, and nurse practitioners. We analyzed data using qualitative methods.
Results: Providers agreed to participate because they were unsure of the effectiveness of their counseling efforts and wanted to learn new techniques for counseling patients about weight gain, nutrition, and physical activity. We identified several barriers to weight gain counseling, including insufficient training, concern about the sensitivity of the topic, and the perception that counseling is ineffective. Providers all agreed that weight gain was an important topic with short-term and long-term health consequences, but they described widely disparate counseling styles and approaches.
Conclusions: Prenatal care providers are deeply concerned about excessive weight gain and its sequelae in their patients but encounter barriers to effective counseling. Providers want new tools to help them address weight gain counseling during pregnancy.

Introduction

Rates of excessive weight gain during pregnancy have been increasing in the United States.[1,2] Excessive weight gain during pregnancy is associated with adverse short-term and long-term health outcomes for mother and child and may be a cause of obesity among women who begin pregnancy with a normal body mass index (BMI).[3] Of more than 4 million births annually in the United States, nearly 60% of mothers begin pregnancy either overweight or obese.[1] During pregnancy, perhaps unlike any other time in a woman's life, most women see a healthcare provider frequently to receive prenatal care. Pregnant women may be especially motivated to make lifestyle changes out of concern for the health of their offspring.[4,5] Therefore, prenatal care may be an opportune time for healthcare providers to assist women in making positive lifestyle changes affecting weight, nutrition, and physical activity.

The Institute of Medicine's (IOM) guidelines for weight gain during pregnancy are widely accepted and endorsed by the American College of Obstetricians and Gynecologists (ACOG) and other professional organizations worldwide.[6] The IOM's weight gain guidelines, which were updated in June of 2009 but are very similar to those published in 1990, recommend lower weight gain ranges for women of higher prepregnancy BMI.[7] Many epidemiological data indicate that women who gain within these guidelines have better perinatal outcomes than women who gain outside them. Outcomes associated with weight gain outside the guidelines include preterm birth, gestational diabetes, cesarean birth, low birth weight, macrosomia, neonatal morbidity, and postpartum weight retention.[8–12] Recent studies have also shown an association between higher maternal weight gain and obesity in the offspring at age 3.[13,14]

Little is known about how prenatal care providers approach weight gain counseling and what facilitates or inhibits

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the delivery of effective counseling. In a study of pregnant women receiving prenatal care in the San Francisco Bay Area, one third of surveyed subjects reported receiving no advice from providers on how much weight to gain during pregnancy.[15] A similar proportion of women in another cohort reported a lack of weight gain advice. In contrast, in a survey of 900 U.S. obstetricians, >85% reported that they counsel women about pregnancy weight gain.[16] In the recent IOM report on pregnancy weight gain, the authors note that "there is a discrepancy between what physicians say they are doing and what women say they are receiving" regarding weight gain counseling.[7]

The objective of this project was to study prenatal care providers and their knowledge, attitudes, and practices regarding weight gain, nutrition, and physical activity counseling during pregnancy. We also sought to identify and characterize barriers to weight gain counseling and describe our subjects' counseling techniques and strategies.

Materials and Methods

Study participants

We conducted seven focus groups of prenatal care providers between July 2007 and February 2008. A convenience sample of focus group participants was drawn from a variety of practice settings in the San Francisco Bay Area, including private practice, academic health centers, county hospitals, and a large Health Maintenance Organization (HMO). A professional survey research organization recruited obstetrician/gynecologist physicians for the first two groups, using telephone and e-mail invitations and snowball referrals[17]; the researchers themselves continued recruitment for the next five groups using similar techniques. One of the investigators (N.E.S.) is a practicing obstetrician/gynecologist in San Francisco and used publicly available lists of local prenatal care providers as well as personal contacts, asking recipients to forward the message to colleagues.

Potential participants were screened by telephone and were eligible if they currently saw pregnant patients in their practice. Obstetrician/gynecologists (OB/GYNs) were eligible only if they were generalists and did not have subspecialty training. Participating providers included OB/GYNs, nurse practitioners (NPs), and certified nurse midwives (CNMs). Recruitment ceased when we obtained enough providers for seven focus groups with a target of 6–10 participants each, allowing for rich, varied data but with noticeable "theoretical saturation."[18,19] Theoretical saturation is achieved when similar themes appear over and over again, with limited new concepts emerging in subsequent focus groups. Each focus group was homogeneous according to provider type, consisting of OB/GYNs only, NPs only, or CNMs only. We believed this would increase participants' comfort and lead to more detailed discussions of the topics. Each group consisted of providers from more than one practice type. Participants were paid $200 for their participation in the focus group.

Data collection

Groups were facilitated by the same moderator (B.G.) using a focus group guide with open-ended questions (Table 1). Use of a single moderator ensured both consistency across groups and an intimate, small group atmosphere within groups. Sessions lasted 90 minutes and were held in professional focus group settings. Additional investigators observed the focus groups and took field notes. Sessions were audiotaped and transcribed by a professional transcription service. Transcripts were reviewed for accuracy by several investigators. Each participant provided written informed consent and completed a written survey to collect demographic and practice information. Study procedures were approved by the University of California, San Francisco's Committee on Human Research.

Table 1. Focus Group Core Questions

1. What motivated you to participate in this focus group?
2. What is your approach to nutrition during pregnancy?
3. What is your approach to physical activity during pregnancy?
4. What is your approach to weight gain in pregnancy?
5. Are there specific strategies that you have found to be effective to help your patients improve their nutrition/physical activity/weight gain?
6. Where did you learn to do nutrition/physical activity/weight gain screening and counseling?
7. (*At the end of the session*) Please tell us what your take-home message is.

Data analysis

Using principles of thematic analysis[20] and a subjective, interpretive editing style,[21] we explored providers' knowledge, attitudes, and behaviors regarding weight gain, nutrition, and physical activity during pregnancy. Several investigators (B.G., P.G., A.B.) independently read the transcripts to identify prominent ideas in the data and to draft preliminary coding categories. Two additional investigators (N.E.S., C.C.H.) checked these initial findings, confirming coding categories and clarifying or adding themes. All investigators then engaged in an inductive process of reading and manually coding transcripts, eventually reorganizing coded data into themes. Team members reviewed results in frequent meetings and discussions, using memos to identify emerging themes and describe relationships among coding categories.[22] The final coding scheme and analysis of the findings were reviewed, and disagreements were discussed by the team until consensus was reached. To further enhance the credibility of the findings, a qualitative technique called peer audit was used, in which results were reviewed for face validity by other prenatal care providers (who were not co-investigators or study participants).[23]

Results

Participant characteristics

The seven focus groups had a total of 52 participants. Three groups were general OB/GYNs, two were CNMs, and two were NPs (Table 2). Providers were drawn from a wide range of care settings, including 26% working exclusively with indigent populations, 40% for health management organizations, and 6% in private practice. Approximately 75% of our sample was obtained through our lists of local providers, with the other 25% obtained through snowball sampling. Although we do not have quantitative data describing the patients

Table 2. Participant Characteristics, $n = 52$

Characteristic	n *(%)*
Age	
Mean (SD)	47.8 (10.3)
Range	29–69
Gender	
Female	49 (94)
Male	3 (6)
Race/ethnicity	
Hispanic	6 (12)
Asian	7 (13)
African American	1 (2)
White	38 (73)
Type of provider	
Physician	16 (31)
Nurse practitioner	16 (31)
Midwife	20 (38)
Practice setting	
Private teaching hospital	3 (6)
Public hospital	7 (13)
Community Clinic	7 (13)
HMO	21 (40)
Private practice	3 (6)
Other/multiple sites	11 (21)
Years in practice	
<5	4 (8)
5–10 years	20 (38)
>10 years	28 (54)

served by our participants, the San Francisco Bay Area is a racially and ethnically diverse locale with high percentages of Latina and Asian immigrants.

Overview

Almost universally, providers noted that weight gain, nutrition, and physical activity were important topics with great potential impact on the health of the woman and her offspring. Although participants were simply asked to respond to broad questions about weight gain counseling (Table 1), virtually all of them focused immediately on obesity and excessive weight. Providers rarely mentioned inadequate weight gain as a concern. Pregnancy was seen as an opportune time to address behavior changes because women have the additional motivation of the child's health and avoiding complications during birth. Providers expressed escalating frustration with the increasing rates of obesity and excessive prenatal weight gain among their patient populations coupled with deepening concerns about finding effective interventions to lower rates of weight-related perinatal complications, especially cesarean birth and postpartum weight retention. We identified several barriers to the optimal provision of weight gain counseling (Table 3). The following sections describe major themes around prenatal weight gain counseling and assessment in the categories of providers' knowledge, attitudes, and practices.

Providers' knowledge

In all three of the OB/GYN focus groups, physicians reported they believed their medical school and residency training in prenatal nutrition, weight gain, and physical activity counseling was inadequate. Participants used personal experiences and lay press materials to inform themselves and their patients.

> I didn't learn any of this in medical school, nor did I learn any of it in residency. So many of us, we've learned it by doing it, by being confronted with these very, very high-risk patients. (OB/GYN)
>
> I would say—I hate to admit this—but a lot of the practical tips that I've learned have actually been through *Reader's Digest.* And also through my own struggles with . . . trying to keep my weight what it should be and live a healthy lifestyle, and trying to keep my children at healthy weights. (OB/GYN)

In contrast, in both of the NP groups, participants described nutrition coursework as well as clinical training that they drew upon when counseling prenatal patients.

> I was happy with the courses that I took. We took a general nutrition course and a therapeutic nutrition course. (NP)
>
> When I first went into nursing, I worked on a medical floor with diabetics. And even to this day, I really encourage a diabetic diet, to stay away from . . . all the white foods. (NP)

Providers' attitudes

Motivations for participation. As an opening question, participants were asked why they decided to participate in the focus group. In every focus group, participants reported that they were caring for many overweight and obese prenatal patients and, therefore, believed that weight gain and nutrition topics were very important. Providers in all three disciplines mentioned that they were attending the focus group "to find out what other people are doing." Participants were trying various counseling techniques but were curious how their approach compared with that of their colleagues.

> The reason I came today is because this topic is very dear to me because . . . 99% of my patients are Hispanic and they tend to gain a lot of weight in pregnancy. And I've been trying all my creative ideas to prevent this, and some work, some don't. And I thought I could hear from other people what they are trying with their own patients. (OB/GYN)

Perception of effectiveness of counseling. Providers in three focus groups expressed uncertainty about the effectiveness and impact of their own counseling and of any weight gain/nutrition counseling in general. Some providers believed that as much of gestational weight gain was beyond a woman's control, counseling about it would only lead to a sense of failure when goals were not achieved. Others thought that influences from friends, family, and culture that encouraged higher weight gain would drown out any advice from the prenatal care provider and render such advice useless.

> If I give them numbers [a target weight gain range] and then they exceed those numbers, then they get stressed. It's not something they have that much control over . . . so I don't want them to be more anxious. (OB/GYN)
>
> But I feel like for some women you're talking . . . against just all of these cultural habits that they've had over the years. I just don't know how much of what I say really makes any difference, I guess. (CNM)

Family and cultural influences were often perceived by providers as barriers to effective counseling and behavior change. Providers reported that family influences often undermined the advice they gave to patients by encouraging

Table 3. Barriers to Weight Gain Counseling Among Prenatal Care Providers

Category	*Theme*	*Representative quote*	*Potential intervention or future research*
Knowledge	Lack of formal training (especially OB/GYNs)[a]	"I wish we had better education . . . in medical school. I don't feel like I'm very prepared to give great nutrition counseling." (OB/GYN)	Continuing medical education (CME); use of technology (e.g., computer or web-based counseling tools)
Attitudes	Uncertainty, doubt about counseling effectiveness	"It's not something they have that much control over, is what I really believe, so . . . I don't want them to be more anxious." (OB/GYN)	Research on effectiveness of interventions to optimize gestational weight gain; encouraging goal setting with follow-up so providers can observe results
	Sensitivity of topic	"And having weight issues my whole life . . . I'm really aware . . . about being respectful of patients and not shaming them around weight gain." (NP)	Counseling strategies that are sensitive yet still address nutrition and weight gain; research to study patient attitudes toward weight gain counseling and culturally competent methods for providing education and counseling
Behaviors	Reactive approach; lack of baseline assessment	"If I identify someone who's gaining . . . too much weight . . . I usually ask them to do a 24-hour diet recall and try to do some really targeted counseling."(CNM)	Development of a brief, focused assessment tool; emphasis on anticipatory guidance and education on weight management throughout pregnancy
	Use personal experiences in counseling	"Being overweight myself is a great icebreaker for women who are struggling with it. . . . I can relate my own struggles to it." (CNM)	Research to study patient response to provider personal stories

[a]OB/GYNs, obstetrician/gynecologists; CNMs, certified nurse midwives; NPs, nurse practitioners.

patients to "eat for two" and to be sedentary. Providers expressed doubt that their counseling would be able to override conflicting advice patients receive from respected family members.

> So a lot of times they've gotten advice from their mothers or their grandmothers or whoever that, "Oh, my God, you need to lie down, you shouldn't be walking, you shouldn't be running, you shouldn't be doing physical things." (CNM)
>
> So we can tell . . . [the patient] what we want but the family, their cousins, their neighbors, may say, "You're not gaining enough weight." And so I find I really have to take that into consideration because that may be more powerful than anything I say. (OB/GYN)

Providers' perceptions of the topic's sensitivity. In every focus group, providers expressed the belief that weight and weight gain were sensitive and emotional topics for both patients and providers and feared that patients might be offended, angered, saddened, or embarrassed if these topics were broached. Providers sensed the importance of approaching patients with a positive and compassionate attitude, to maximize the effect of their recommendations. There was also concern that patients might seek care elsewhere if they were offended by the suggestion that they should limit weight gain.

> One thing I try to be aware of is just, as with a lot of the counseling that we do, it's very easy for it to seem kind of critical and punitive, particularly with issues around diet when there are multiple cultures involved. (CNM)
>
> . . . there's such a self-image issue I see in my patients, that you're trying to be delicate and not be that blunt physician saying, "You're huge and you've got this issue, this issue, and this issue," because you still want to continue seeing the patient. And I [have] definitely heard . . . "I didn't see this physician because she told me I was fat." (OB/GYN)
>
> And having weight issues my whole life, I didn't need anyone to shame me because I did a good job of shaming myself about weight issues. And I'm really aware . . . about being respectful of patients and not shaming them around weight gain or failure of weight gain. (NP)

Several participants mentioned that discordance between the weight of the provider and the patient made weight counseling more awkward. Some providers reported concerns that overweight and obese patients might feel judged and stigmatized if a thin provider addressed weight issues. They also worried that the patient would feel that the thin provider could not understand the experiences of an overweight person.

> But I also find in my practice it's very hard as a smaller person to try to motivate a bigger person to change because in their

perspective I can't relate. . . . I do find that there are some barriers to different people talking about size and weight, because I will never understand what it's like to be three hundred pounds. (NP)

[I]f you look at us [the focus group participants], we're all pretty much normal weight people, and I find that patients look at us like we're taking magic pills. (CNM)

On the other hand, providers frequently made reference to their own experiences and struggles with food and weight during pregnancy and otherwise in order to normalize the discussion. Those who had struggled with excess weight themselves often used that experience to bond with patients and gain their trust.

. . . actually being overweight myself is a great icebreaker for women who are struggling with it because . . . I don't have to talk about the magic with them, I can relate my own struggles to it like "Yes, I know it's really hard not to do the such-and-such or the this-and-that. (CNM)

So I think that one of the things that I try to kind of tell them is that it's not magic. I actually don't have good genes. I have a family history of diabetes and being overweight . . . and it takes work. I admit fallibility. My goal is to exercise four times a week; I never exercise four times a week. (CNM)

Providers' practices

Initial clinical assessment of weight/nutrition/physical activity. As noted, providers perceived that weight was a sensitive and emotional topic for patients. In six of seven focus groups, providers described a process we called "meeting the patient where she is." These providers tried to assess the patient's emotional baggage, sometimes requesting the patient's self-assessment of weight and food issues, prior to undertaking further assessment.

. . . it's helpful for me to know what the woman thinks about her weight . . . so that when I think about what kind of guidance I can give, do I have somebody who thinks her weight's fine even though her body mass index is high, so it's going to be a different way of introducing the topic. (CNM)

A common approach to weight gain counseling was to wait for a cue, typically a question from the patient or the observation of excessive or inadequate weight gain, to broach the topic. Instead of doing routine assessment and counseling, some providers only addressed weight gain, nutrition, and physical activity if the patient asked about these topics or if they perceived the patient to be at higher risk in some way (e.g., prepregnancy obesity).

I usually bring it up either if somebody is gaining a lot of weight and I want to know what they're eating or if somebody brings it up to me. Those are usually the two ways that it comes up, and then that's when I start talking to them about what they're eating. (CNM)

Providing a target weight gain range. We did not explicitly ask participants what weight gain range they routinely advised for their patients. When the topic arose in the focus groups, participants varied widely in what weight gain range they recommended. Four NPs said they did not tell patients a range of weight to gain unless the patients asked. These participants expressed concern that giving a numerical range of pounds to gain would cause stress for the patient and could foster harmful behaviors. One of these providers intentionally advised weight gain above the guidelines so as not to cause anxiety over high weight gain.

. . . if somebody asks me what's the target, I usually throw out 40 pounds . . . because if you say 25 or 35, which is in most textbooks, I feel like then you'll get that first-time mom, and I don't know if all of you find this, but I feel like it's the nulliparous women, first pregnancy, I don't know if they're excited and they're eating bonbons at home, but they tend to gain more. So, if you say 25 to 35 and they hit 36, they feel like a failure, or their partner puts pressure on them. Then I am afraid they're going to try to diet in their third trimester when they shouldn't be. (NP)

In contrast, another provider thought the IOM guidelines were too high and provided her own recommendations.

In the first visit, I tell patients that I will be looking at their weight throughout pregnancy, that I don't want them to gain any more than 20 pounds. I explain to them that the baby will hopefully be around 7 pounds and then add 7 pounds here and there is 14 and then another 6 from here and there, but all the rest I don't want all that weight. (OB/GYN)

Weighing patients. One provider avoided weighing the patient if she perceived that the patient was anxious about weight or weight gain.

There are times when I do not address it with a patient purposely because she's been so anxious, I assume that she's been gaining weight. I say, "Things look great," and she doesn't want to go there either. Or I come into a room and I notice that a patient hasn't weighed herself or hasn't allowed the medical assistant to weigh her, then I just don't go there as long as I see that she's doing okay. (CNM)

In contrast, other providers used the scale as a teaching tool and a prompt to address weight gain and nutrition with their pregnant patients. One provider in particular was very aggressive about weighing her patients and counseling them to avoid excessive gain.

We weigh the patient on a scale and we write it down. The chart is kind of a flow sheet chart, so I put one[weight] under the other to show the patient, Look, this the weight you had in the first weeks and here you are halfway through the pregnancy, you already gained 10 pounds so you only have 10 pounds that I'd let you gain. (OB/GYN)

Counseling approaches and techniques. Despite the general uncertainty about the effectiveness of counseling, providers from all focus groups shared counseling techniques that anecdotally appeared to be successful. A common technique was to ask patients to make small dietary changes, especially eliminating juice and sweetened drinks from the diet. Two providers described how the elimination of juice from a patient's diet caused a cessation of rapid weight gain. One NP described how she would put patients who had gestational diabetes in an earlier pregnancy back on their diabetic diets immediately when they conceived again and reported that none had recurrent gestational diabetes.

Informing patients of health risks related to weight and weight gain. Although providers generally agreed that there were serious short-term and long-term health risks related to weight and weight gain during pregnancy, there was

disagreement as to how much to tell patients about these risks. Four providers reported concerns that scare tactics describing possible adverse heath outcomes were counterproductive and might cause patients too much anxiety or distress. These providers were afraid that the clinician-patient rapport would be adversely affected if they emphasized the risks of weight gain in their counseling.

> We're not harping on your weight because I care how much you weigh; it's because we want a very easy delivery. . . . We don't want the head to come out and the shoulders to get stuck. So, when I've had to talk to them more than two times, I do get into a little bit more detailed discussion about what some of the adverse outcomes can be. And then they kind of tear up and then I feel bad, like okay, did I go too far? (OB/GYN)
>
> I don't want to hurt my patient's feelings, but I want to be realistic about the risks. I want them to come back to me; I want them to be honest with me about what they're eating. (NP)

Two providers felt more comfortable bringing up risks with patients and described how they took a more direct approach to describing risks of obesity and weight gain.

> You know, to talk to some of those patients when I see them immediately, I mean, we're talking 1 or 2 days postpartum, if I notice that they're really obese, they've had a C-section. I mean, those are the patients when I say, "You've got to lose weight. You know, you've had a C-section. Your next pregnancy we know is going to be higher risk because of that." (OB/GYN)
>
> I find that patients are so thankful that I address it [weight gain] as a problem. "Yes, let's make a plan about this and let's do something." I haven't had a single person say, "Oh, I'm not talking about this" or being angry with me for bringing it up. (CNM)

One OB/GYN excitedly described a patient whom he had counseled after a complicated delivery. He explained to her that her complications were related to her obesity and that her weight was threatening her life expectancy. He was delighted when she came to his office many months later after losing considerable weight.

> I remember this one patient who was really obese; she was approaching 400 pounds. She just delivered her baby, she had a horrible wound infection, had a C-section, and was a very young woman, Mexican. I told her how big a problem this was and how this was going to really impact her life. I spent a good 10, 15 minutes, and this patient, one day she comes and says hi to me. For no other reason she comes to the clinic to thank me. She's lost about 200 pounds, and she's healthy. (OB/GYN)

Setting achievable behavior change goals.

One theme that emerged in all focus groups was to have the patient set small goals for behavior change. There was a perception that asking the patient to make extensive lifestyle changes was not going to be effective and that taking baby steps toward healthier behaviors was more acceptable to patients. Examples of small changes included cutting out juices, sodas, and sweetened drinks, cutting out "white foods," such as rice and white bread, reducing portion sizes, switching to nonfat milk, and taking walks.

> I have to be at a really basic level of just saying, "Don't eat out; don't drink soda." Sometimes, I'll encourage them to really pick one thing that they know they're eating that's not good - . . . if they're going to Kentucky Fried Chicken or whatever, just [cut out] the soda. . . . I know it's my own personal experience that trying to change a diet so completely like that, it just seems to me like it's impossible. (CNM)

Focusing on the baby's health.

A motivational technique providers used was to focus on the developing fetus, believing that women were more likely to make behavior change "for the sake of the baby" than for their own health. One midwife counseled patients to visualize how what they ate was also consumed by their fetus, pointing out that many women would never feed their infant some of the things they themselves ate during their pregnancy (e.g., candy, soda).

> I think sometimes you really need to focus it on the baby. People won't do things for themselves, but they'll do things for the baby. And to point out that eating well is one of the very few things that she can do directly that's going to influence the health of the baby. (CNM)
>
> For me, I wanted to eat doughnuts so much when I was pregnant. I mean literally I had to go around a different street to avoid going by the doughnut shop because I wanted to go in and get four doughnuts [chuckle] and just shove them down my throat. [chuckle] . . . So I share that with people and I talk about how . . . I would also envision my baby eating a doughnut. [chuckle] . . . when you think about a little newborn . . . munching on a doughnut, it's kind of gross. (CNM)

Discussion

The ACOG *Guidelines for Perinatal Care* advises clinicians to provide nutritional counseling and weight gain recommendations (according to IOM guidelines) to all pregnant women.[24] Our data suggest that providers face many barriers in meeting this standard of care. The clinicians we studied hold strong beliefs that weight gain, nutrition, and physical activity are important factors in a healthy pregnancy and birth. They note great concern over the impact of excessive weight gain on their patients, and many are making great efforts at helping patients make weight-related behavior changes. Yet they are confused about what counseling approach to take and disagree about how to be effective without offending, stigmatizing, or discouraging patients.

Providers, especially the physicians, reported that they lacked knowledge and training about nutrition and weight management issues. A study of internists, pediatricians, and psychiatrists found that many lacked competency in weight-related counseling knowledge and skills, including taking a diet history and setting weight loss and physical activity goals with patients.[25] A survey of U.S. OB/GYNs found that 84% reported counseling patients about pregnancy weight gain, with only 64% modifying that advice based on prepregnancy BMI.[16] Our findings suggest that OB/GYNs, CNMs, and obstetrical NPs also need additional training to provide evidence-based counseling.

The providers in our study often wait for cues from the patient to address weight gain issues, a phenomenon we call a "reactive" rather than a "proactive" approach to assessment and counseling. Some providers avoided or delayed weight gain counseling for fear of shaming, stigmatizing, or causing anxiety in the patient. Unfortunately, once excessive (or inadequate) weight gain has been identified, detrimental effects on health may already have begun. Fetal growth and development may be affected, and maternal metabolism may be disordered, increasing the risk of gestational diabetes and

hypertension. Certainly, identification of excessive weight gain should be a cue to more intensive intervention; however, prevention of excessive gain is preferable. Also, women with poor diets or who are sedentary may still gain weight according to guidelines, so waiting for abnormal gain to address behavioral health risks will mean that many women will not be counseled to make timely health-promoting lifestyle changes. The reactive approach to counseling seems to arise, in part, from the perception that weight is a sensitive topic for patients and providers alike. The reactive approach was also seen in a study of 633 primary care visits, in which weight counseling was provided in only 11% of visits with overweight patients, usually prompted by patient requests.[26] A mail survey of pediatricians found that those who self-classified as either "thin" or "obese" reported more difficulty counseling patients about weight compared with those self-classifying as "average" weight.[27] Similarly, we found that providers' perception of their own weight influenced their approach to counseling. In a study among overweight and obese primary care (nonpregnant) patients, most patients wanted weight-related counseling from their doctor, yet less than half of the obese subjects and only 24% of the overweight subjects had discussed weight issues at their primary care visit.[28] Studies of prenatal care patients are needed to assess women's preferences for style and content of weight gain counseling in pregnancy.

Providers reported a wide range of behaviors regarding weight gain assessment and counseling in pregnancy. We observed a diversity of beliefs and practices among participants regarding charting prepregnancy BMI, providing a target weight gain range, and reviewing the weight gain flowchart or graph with patients. This variability in approach stems in part from provider doubts about the effectiveness of weight gain counseling. Although more research is necessary to refine our approach to weight gain counseling in pregnancy, evidence from recent clinical trials suggests that weight gain can be modified by prenatal counseling.[29,30] In a survey of 2237 predominantly white, middle-class pregnant women, those who reported receiving correct advice about weight gain guidelines were more likely to gain within the guidelines.[31] There may also be lessons to be learned from the literature about weight management in nonpregnant people. For example, studies of successful long-term weight loss in formerly obese subjects show that frequent self-weighing is associated with maintenance of weight loss.[32] Weighing patients is routine during prenatal care in the United States, but advising pregnant patients to weigh themselves at home is not. Outside of the United States, some health authorities do not endorse routine serial weighing during pregnancy.[14]

Because this was a qualitative study, we do not know if our results are representative of the entire population of prenatal care providers. In particular, our sampling method is likely to have selected participants who are more interested in weight and nutrition counseling compared with their colleagues: most of our subjects told us that their interest in the topic was why they chose to participate. It is likely that the providers who declined our invitation do less counseling than those we studied. However, even among this group of highly motivated and interested clinicians, we identified substantial barriers to the provision of effective weight and nutrition counseling.

A brief assessment tool, such as those used for smoking and alcohol counseling,[4] might improve counseling behaviors among clinicians and improve patient outcomes. In a survey of pediatricians, only 12% reported high self-efficacy in obesity management, and 96% of respondents chose better counseling tools as the most helpful clinical resource for obesity management.[33] Until such tools are developed and tested for use in prenatal care, we recommend that prenatal providers attempt to meet the existing ACOG guidelines for nutrition and weight gain counseling. The IOM's clinical implementation guide, available free online, has a model for nutritional care, assessment tools, and counseling strategies.[34] Early in prenatal care, providers should calculate the patient's prepregnancy BMI and record it on the chart. The target weight gain range, based on the BMI, should be discussed with the patient. Assessment and counseling about weight, nutrition, and physical activity should be ongoing throughout the pregnancy, as weight gain is repeatedly measured, recorded, and discussed with the patient. Ideally, the initial prenatal assessment should include the patient's knowledge, attitudes, and behaviors about weight and food, incorporating family and cultural influences, past experiences, and willingness to change behavior.

In our study, providers agreed that prenatal care provides a unique opportunity (frequent visits, motivated patients) to impact health for a woman, her offspring, and her entire family. For women of normal prepregnancy BMI, excessive gestational weight gain puts them at risk for future obesity and consequent morbidity. For those already overweight or obese, pregnancy can be an opportunity to initiate lasting lifestyle changes that can benefit long-term health. The providers in our focus groups described creative efforts to develop and implement their own tools and strategies to prevent excessive prenatal weight gain. Some of their strategies, such as reinstituting a diabetic diet early in pregnancy to prevent recurrence of gestational diabetes, could be tested in clinical trials. Providers have more power than they are aware of helping patients make long-term changes, although they may not see an immediate result. In a study of survivors of domestic violence, women who left an abusive partner reported that education and encouragement they received from a provider many years before was critical for their eventual escape from abuse.[35] Similarly, prenatal weight gain counseling, provided in a nonjudgmental, individualized manner, has the potential to improve the health and lives of women, their offspring, and their community.

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Disclosure Statement

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