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"What My Doctor Didn't Tell Me": Examining Health Care Provider Advice to Overweight and Obese Pregnant Women on Gestational Weight Gain and Physical Activity

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A B S T R A C T

Background: Appropriate gestational weight gain (GWG) is vital, as excessive GWG is strongly associated with postpartum weight retention and long-term obesity. How health care providers counsel overweight and obese pregnant women on appropriate GWG and physical activity remains largely unexplored.
Methods: We conducted semistructured interviews with overweight and obese women after the birth of their first child to ascertain their experiences with GWG. A grounded theory approach was used to identify themes on provider advice received about GWG and physical activity during pregnancy.
Results: Twenty-four women were included in the analysis. Three themes emerged in discussions regarding provider advice on GWG: 1) Women were advised to gain too much weight or given no recommendation for GWG at all, 2) providers were perceived as being unconcerned about excessive GWG, and 3) women desire and value GWG advice from their providers. On the topic of provider advice on exercise in pregnancy, three themes were identified: 1) Women received limited or no advice on appropriate physical activity during pregnancy, 2) women were advised to be cautious and limit exercise during pregnancy, and 3) women perceived that provider knowledge on appropriate exercise intensity and frequency in pregnancy was limited.
Conclusions: This study suggests that provider advice on GWG and exercise is insufficient and often inappropriate, and thus unlikely to positively influence how overweight and obese women shape goals and expectations in regard to GWG and exercise behaviors. Interventions to help pregnant women attain healthy GWG and adequate physical activity are needed.

Introduction

The Institute of Medicine (IOM) and National Research Council's (NRC) 2009 report titled "Weight Gain During Pregnancy" has set the current standard for recommended weight gain during pregnancy. Excessive gestational weight gain (GWG) is associated with postpartum weight retention and is a positive predictor of overweight and obesity after pregnancy (Olson & Blackwell, 2011; Siega-Riz et al., 2009). Unfortunately, rates of excessive GWG have been increasing over time, with more than 40% of normal-weight women and 60% of overweight women exceeding GWG recommendations (Chu, Callaghan, Bish, &

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D'Angelo, 2009; Martin et al., 2007). Excessive GWG is particularly concerning for overweight and obese women given their already increased risk for pregnancy complications (Chu et al., 2009; IOM & NRC, 2009).

The current IOM/NRC guidelines recommend that women with normal prepregnancy weight gain 25 to 35 pounds during pregnancy, whereas overweight and obese women are advised to gain 15 to 25 pounds and 11 to 20 pounds, respectively (IOM & NRC, 2009). Although the rationale for these GWG guidelines are well-delineated in the IOM/NRC report, how health care providers advise pregnant women about GWG goals, and whether this advice is effective in helping women to gain an appropriate amount of weight, remains underexplored. Studies have estimated that between one third and one half of women received no advice from practitioners on appropriate GWG (Phelan, Phipps, Abrams, Darroch, Schaffner, & Wing, 2011a; Stotland et al., 2005). Stotland and colleagues' qualitative study revealed that prenatal care providers perceive GWG counseling to be useless, and generally only approach the topic of GWG when asked owing to fear of offending or causing stress to the patient (Stotland et al., 2010). Whether these concerns represent true barriers or just perceived barriers to GWG counseling is unknown.

Pregnancy may present an ideal opportunity to discuss healthful lifestyle changes given women's desire to improve their health for the benefit of their baby (Phelan, 2010). Physical activity during pregnancy can limit excessive GWG and prevent postpartum weight retention (Phelan, 2010), and thus represents a behavioral target for providers to counsel pregnant women. Federal guidelines recommend that pregnant women who are not already highly active or doing vigorous intensity activity get at least 150 minutes of moderate intensity aerobic activity a week during pregnancy. Despite the known safety of physical activity for most pregnant women and the apparent health benefits for both mother and fetus (Physical Activity Guidelines Advisory Committee, 2008), it is unclear whether pregnant women are advised by their providers on healthy goals for physical activity during pregnancy.

Excessive GWG is an important contributor to postpartum weight retention and long-term obesity in women. The GWG guidelines set forth by the IOM/NRC in 2009 offer prenatal care providers optimal GWG ranges to counsel their patients about. However, whether pregnant women are receiving appropriate advice regarding GWG and physical activity during pregnancy is unclear. The aim of this qualitative study was to describe the health care provider advice received during pregnancy on GWG and exercise in overweight and obese women, and how the women viewed that advice. Better understanding these issues will aid in shaping how prenatal care providers should be advising women on healthy GWG.

Materials and Methods

In summer 2011, we conducted qualitative interviews with women after the birth of their first child to ascertain their experiences with GWG. We recruited a convenience sample of women who were active participants of the Penn State First Baby Study (PI, Kristen Kjerulff). The First Baby Study is an on-going, longitudinal cohort study of 3,006 nulliparous women aged 18 to 35 recruited during pregnancy and are being followed for 3 years postpartum. Participants of the First Baby Study were invited to participate in the current qualitative study on GWG. Interested women were screened by telephone or e-mail to determine if they met the eligibility criteria of being overweight (body mass index [BMI] 25.0–29.9 kg/m^2) or obese (BMI $\geq$ 30.0 kg/m^2) before pregnancy, had a singleton pregnancy, and English speaking. Women were not eligible if their GWG was less than 5 pounds. Telephone interviews were conducted by one of two investigators (MS, SWH), and took approximately 30 minutes to complete. Verbal consent was obtained at the start of the telephone interview, which included permission to link their responses with their First Baby Study data. Each participant received a $20 gift card for participating in the study. Women were continuously enrolled until thematic saturation was reached, with representation of participants who both exceeded and did not exceed GWG recommendations. This study was approved by the Institutional Review Board at the Penn State College of Medicine.

The interview guide consisted of open-ended questions inquiring about the woman's experiences with GWG during her pregnancy. This manuscript reports the results of questions focused on provider advice received on GWG and physical activity during pregnancy (Table 1). All interviews were audiotaped and transcribed by a professional transcription service. We linked participants with their First Baby Study data in order to ascertain sociodemographic data, prepregnancy height and weight, and GWG.

Frequencies for participant characteristics are presented. Three members of the research team (MS, CHC, JLK) independently analyzed each transcript, using a grounded theory approach to identify themes related to the topics of health care practitioner advice received about GWG and physical activity during pregnancy (Corbin & Strauss, 1990). Grounded theory is a systematic approach to qualitative analysis emphasizing concept and theory formation that are grounded in empirical observations in the data. The investigators then jointly decided on the major themes, for which there was full agreement. Illustrative examples of the themes were selected and presented.

Results

Participant Characteristics

Twenty-four women were included in the analysis. The sample included 12 overweight women and 12 obese women, with a median BMI of 29.8 kg/m^2 (range, 25.1–39.2). Eight of the 12 overweight women exceeded recommended GWG (median GWG for overweight women was 38 lbs; range 16–60) and 9 of

Table 1
Interview Questions: Provider Advice on GWG and Exercise during Pregnancy

Provider advice on GWG
When you were pregnant, did you receive advice [from your doctor] on how much weight you should gain during your pregnancy?
Who brought up this discussion? Did you feel comfortable discussing your weight with your doctor?
Did you use other resources (friends/family, internet, books) to determine how much weight to gain?
Of the advice you received regarding weight gain, whose advice did you value most?
Did your doctor discuss the risks of gaining too much weight or too little weight during pregnancy with you? If so, what was discussed?
Provider advice on exercise during pregnancy
Did your doctor talk with you about exercise during pregnancy?
What types of exercise were discussed/recommended?
Did your doctor discuss how much exercise is recommended for pregnant women?

the 12 obese women exceeded recommended GWG (median GWG for obese women was 33 lbs; range, 7–55). Other participant characteristics are shown in Table 2.

Provider Advice on GWG

Three major themes emerged in discussions with first time mothers on GWG advice received from their providers (Table 3).

Women were advised to gain too much weight or given no recommendation for GWG at all

Out of the 24 women in the study, 9 reported that their providers did not discuss GWG at all with them. Of the remaining 15 women, 1 was given nonspecific advice "not to gain too much," 2 women (who were obese) were advised to gain an appropriate amount (<20 pounds), and the remaining 12 women were advised to gain too much weight for their prepregnancy weight category. The majority of these women were advised to gain 25 to 35 pounds, which is the recommended GWG for normal weight women. Of note, some women commented that the advice they received was appropriate because they believed themselves to be normal weight. For example, one overweight woman with excessive GWG said:

> They said 25 to 30 pounds, 'cause that's the normal weight gain, considering I was at a healthy weight level to begin with.

Although many women did not recall getting specific advice on GWG at the start of pregnancy, all women reported that their weight gain was being monitored during their prenatal visits. However, women received little, if any, feedback regarding whether their weight gain during pregnancy was healthy or not. One obese woman with excessive GWG said, "They just took my weight, and said, 'Okay, everything looks good.'" One overweight woman who gained 30 pounds during her pregnancy reported her obstetrician became concerned when she had "only" gained 10 pounds by the end of the second trimester:

> She [didn't tell me I was gaining] too much weight, because that was never a factor. She just told me that I needed to start gaining more. That was all she said, "I need you to start gaining more."

One obese woman who gained 42 pounds during her pregnancy reported that she was concerned about gaining too much weight, but her provider reassured her that she was not:

> I put on a lot of weight toward the end of my pregnancy, and whenever I went to the doctor, they said it was okay, so I believed them.… . I was concerned that I was gaining too much, but the doctor always said it was okay.

Most women received their prenatal care in obstetrical group practices, so some women in the study reported receiving conflicting advice on GWG from different providers in the same practice. One overweight woman who gained 60 pounds remarked:

> I received conflicting [advice]… . The one doctor said, "You don't wanna gain more than 30 pounds," and I certainly gained more than that. And the other doctor kept saying [about my weight gain], "We know you're fine; you're fine."

Providers were perceived as being unconcerned about excessive GWG

Because many women reported not being counseled about GWG, they developed the opinion that their health care providers were not very concerned about them gaining too much weight, or did not think that gaining a lot of weight was worrisome. For example, one overweight woman with excessive GWG recalled her doctor saying:

> [The doctor said], "Yeah, they tell you to only gain such and such weight, but as long as you feel healthy, and your baby's doing fine, that's all that matters."

Other women assumed that if they were gaining too much weight during pregnancy, their providers would have let them know if there was a problem:

> I went through a period of freaking out [about my weight gain.] "Oh my gosh, I already don't really like the weight I'm at. I don't wanna gain a bazillion pounds."… I always just relied on the fact that, if [my doctor] thought I was not gaining appropriately, she would've said something.

One obese woman with excessive GWG expressed frustration because she did not think her provider had been concerned enough about her GWG, and wanted more guidance about how to achieve appropriate GWG:

> I think just a little more time needs to be spent on [GWG]; a little more time spent talking about, "This is how you would eat to maintain your weight throughout the pregnancy, and then the ultimate weight that you're gaining is…." or "This is how to combat hunger, or morning sickness, or things like that." Whereas, I think most of that information that you

Table 2
Participant Characteristics ($n = 24$)

Characteristic	*n* (%)
Prepregnancy body mass index category	
Overweight	12 (50)
Obese	12 (50)
Gestational weight gain	
Exceeded recommended GWG	17 (71)
Did not exceed recommended GWG	7 (29)
Age, yrs, median (range)	29 (21–35)
Education	
Less than college graduate	4 (17)
College graduate or higher	20 (83)
Race	
White	23 (96)
Other	1 (4)
Married	24 (100)
Health insurance	
Private	23 (96)
Public	1 (4)

Table 3
Emergent Themes

Topic	Themes
Provider advice on GWG	Women were advised to gain too much weight or given no recommendation for GWG at all
	Providers were perceived as being unconcerned about excessive GWG
	Women desire and value GWG advice from their providers
Provider advice on exercise	Women received limited or no advice on appropriate physical activity during pregnancy
	Women were advised to be cautious and limit exercise during pregnancy
	Women perceived that provider knowledge on appropriate exercise intensity and frequency in pregnancy was limited

Source: IOM & NRC (2009).

glean is from people around you, that aren't necessarily professionals. I think they need to spend a little bit more time coaching people through it.

Women desire and value GWG advice from their providers

Women desired advice on GWG from their providers because they thought it would be the most medically informed and specifically tailored for them. One obese woman said:

> [I valued] my doctor's [advice on GWG], simply because they were the ones, I felt, that had more of a medical opinion…. I would definitely say I looked at their advice a little bit heavier than everyone else's.

An overweight woman said:

> I thought [my doctor's advice] was more specifically tailored to me, in terms of how much weight I should be putting on.

Not surprisingly, women were receiving advice about GWG from other sources, including books, the Internet, magazines, family members, and friends who were mothers. Although women generally expressed interest and desire in discussing GWG with their providers, women would look to other sources if they either were not getting advice from their practitioners or the advice was conflicting:

> I read stuff on line, [because] the doctor… never said anything [about GWG].

> I respect [my doctor] very much, but I just knew that not everything that they always say is the only way… and they all have different opinions and some of them are more lax…. So I think that's why I preferred the book.

Although it was uncommon for pregnant women to receive correct information on appropriate GWG, most women trusted that their medical care team was leading them in the right direction. One woman, who was advised to gain more than the IOM recommendations, said,

> As long as your doctor is telling you that you are healthy, I don't think it really matters what weight you have gained.

Provider Advice on Exercise

On the topic of provider advice on exercise in pregnancy, three themes were identified (Table 3).

Women received limited or no advice on appropriate physical activity during pregnancy

In the 24 interviews, only 10 women could recall having any discussion at all about exercise with their providers during pregnancy. When asked if their provider recommended certain types of exercise, the other women responded, "No." If women did receive advice on physical activity during pregnancy, it was only at the initial prenatal visit and sometimes limited to written patient education handouts. Many women stated that if there was any discussion with their provider about exercise, they initiated this interaction.

Women were advised to be cautious and limit their exercise during pregnancy

Among the 14 (out of 24) women who did discuss exercise during pregnancy with their providers, the focus of the providers' counseling was on being cautious about exercise. Only 4 of these women were advised to continue their current levels of physical activity, while the other 10 were advised to be cautious and limit their levels of physical activity. One woman stated:

> "As long as there wasn't any kind of contact, or risk of falling. About riding my bike- one doctor said- that that wasn't a good idea, because of the risk of falling, or hitting a rock, or something, and then falling off the bike and hurting yourself.

Another women said,

> [Some]one … at the doctor's office had mentioned to me that you have to be careful what type of exercise you're doing, and nothing that's high impact.

No women were advised to increase their physical activity levels, even though many of the women were sedentary (and all were overweight or obese) before pregnancy. Thus, this advice was interpreted to mean that they should not be exercising at all during pregnancy. One overweight woman stated:

> I remember asking at the beginning [of pregnancy]—I was a little worried because I wasn't where I wanted to be weight-wise.—could I start exercising more? And he had said that if you haven't exercised rigorously before, it wasn't the time to start.

No women reported being counseled on how much time they should be spending exercising, or that they should be engaging in moderate or vigorous intensity exercise, as stated in the federal guidelines. If women were advised to engage in a specific type of exercise, it was usually limited to stretching or walking. No women recalled their providers discussing the health benefits of exercise during pregnancy.

Women perceived that provider knowledge on appropriate exercise intensity and frequency in pregnancy was limited

Owing to a lack of concrete recommendations on how much and what types of exercise to engage in, women did not view their providers as knowledgeable on the topic. Most women were aware that having a prenatal exercise routine was in their best interest, yet, according to the interviews, almost no providers seemed to know what was appropriate or safe for a pregnant woman. One overweight woman recalled,

> That was one thing that I would say was sad, because no one could really answer me as to how much I should or shouldn't be doing when I was pregnant. And nobody was real good at [that]. Everyone's like, 'Walking's good. Walking's good; you should do that.' Everyone was just kind of like, 'Well, whatever.' I went by how my body felt, and I did that until the end, but I don't think there's a lot of good, knowledgeable people on what you should and shouldn't be doing while you're pregnant.

The lack of information being conveyed on exercise was concerning, even angering, to some women. An upset, obese woman who had excessive GWG voiced her concern, saying:

> My body image is so poor and I'm just mad at myself 'cause I gained this much weight, and kind of mad that people didn't warn me… I don't feel like I was warned enough… I don't think they educated me enough.

Discussion

Current guidelines recommend specific GWG targets for pregnant women based on prepregnancy weight categories

(American Academy of Pediatrics, American College of Obstetricians and Gynecologists, & March of Dimes Birth Defect Foundation, 2007). Our data suggest that overweight and obese women are either not receiving advice about how much weight they should gain or are being advised to gain too much weight during pregnancy. Further, women in our study were not receiving specific counseling on exercise during pregnancy. Instead, women looked to books, magazines, friends, family, and the Internet for guidance in navigating the challenges of pregnancy. Yet, few women valued these sources as much as they valued the opinion of their providers, suggesting that provider advice on GWG and physical activity would be well-received.

Although it was uncommon for many women in our study to report receiving specific advice on GWG, it was even more unusual for that advice to be appropriately adjusted for her prepregnancy weight. Many of the overweight and obese women in our study reported being told to gain what would be expected for normal weight women. This message is consistent with findings from a survey of U.S. obstetricians where only 64% modified their GWG advice based on a woman's prepregnancy weight (Power, Cogswell, & Schulkin, 2006). The reasons behind why providers may be giving inaccurate advice are unclear, and are likely multifactorial (Stotland et al., 2010). It may be owing to providers' lack of understanding of the risks associated with excessive weight gain in overweight and obese women during pregnancy; however, this is unlikely (Stotland et al., 2005). More likely, providers may find it awkward to acknowledge that the patient is either overweight or obese in fear of embarrassing the patient (Stotland et al., 2010). Additionally, providers may not be calculating the patient's prepregnancy BMI and identifying the patient as overweight or obese, and thus not adjusting their GWG recommendations accordingly. Providers certainly have time limitations during clinical encounters, which may restrict their ability to counsel patients on appropriate weight gain and physical activity, a barrier to counseling frequently found in primary care clinical settings (Orleans, George, Houpt, & Brodie, 1985; Yarnall, Pollak, Ostbye, Krause, & Michener, 2003). Further, providers may feel inadequately trained to appropriately address weight and physical activity counseling or believe that such counseling is ineffective (Foster et al., 2003; Stotland, et al., 2010; Sussman, Williams, Leverence, Gloyd, & Crabtree, 2008). Women may welcome pregnancy as a time that they are allowed to "eat for two," and providers may find themselves reluctant to counsel them otherwise.

Women often reported that their providers did not stress the importance of appropriate GWG and lacked concern when they seemed to be gaining a lot of weight. Stotland and colleagues' qualitative study of prenatal care providers found that some providers avoided offering GWG counseling for fear of causing anxiety in the patient (Stotland, et al., 2010). Thus, the providers employed a "reactive" approach to counseling patients on weight gain, that is, waiting for cues from the patient to address the issue (Stotland, et al., 2010). Such cues are unlikely to come from women until they have already gained too much weight, at which point detrimental effects on health may have already occurred. The women in our study seemed to describe a similar "reactive" approach, where GWG was not proactively discussed, but only discussed when the woman brought it up. Although this "reactive" approach was intended to be a more sensitive approach by the prenatal care providers in the Stotland study, it was perceived as a lack of concern by the women in our study. A lack of counseling on appropriate GWG leaves women to establish their own expectations for the course of their weight gain based on their perception of what is acceptable. Waiting for the patient to bring up the issue is also problematic when overweight women do not recognize themselves to be overweight, which was the case with several overweight women in our study.

Our findings also indicate that most women received insufficient and inappropriate advice from their providers on exercise during pregnancy. No women remembered receiving advice on exercise frequency or duration. Rather than receiving advice on specific exercise activities and how much to do, pregnant women were more often being advised what not to do. Additionally, women were advised not to exercise more intensely than before pregnancy—because most women were not exercising before pregnancy, this advice was interpreted to mean that they should not exercise at all. Unfortunately, this is in conflict with the federal physical activity guidelines that recommend 150 minutes per week of moderate intensity exercise in healthy pregnant women, even in previously sedentary women. According to the guidelines, pregnant women who were previously engaging in vigorous intensity aerobic exercise can continue to do so during pregnancy (Physical Activity Guidelines Advisory Committee, 2008). Physical activity during pregnancy has been found to be beneficial in limiting GWG (Phelan et al., 2011b). The most common forms of exercise recommended were stretching and walking—even if advice to do stretching/walking is realized, it may not be sufficiently intense to constitute "moderate intensity" physical activity as recommended by the federal guidelines.

The main strength of our study is the use of qualitative methods to explore women's experiences and their reactions to provider advice about GWG and exercise during pregnancy that could not have been obtained in a quantitative survey study. Our study also has limitations. We recruited a convenience sample of first-time mothers in Pennsylvania, so our results may not be generalizable to later order pregnancies or pregnant women's experiences in other states. The women in our sample were all married, highly educated, and nearly all White, so is not representative of women of more sociodemographically diverse backgrounds. Further qualitative and quantitative research on this topic is needed in larger, more diverse groups of women. Another potential limitation was that women were interviewed after their pregnancy, so their responses may have been susceptible to recall bias.

Implications for Practice

These findings suggest that provider advice during pregnancy is insufficient and often inappropriate, and thus unlikely to positively influence how overweight and obese women shape goals and expectations in regard to GWG and exercise behaviors. It is necessary for providers to understand women's prepregnancy BMI and physical activity levels, so that individualized and accurate advice can be delivered. Simple office-based tools, such as automated BMI calculators, may help providers to identify patients as overweight or obese and provide appropriate preconception counseling for women before pregnancy and accurate GWG targets for pregnant women. It is common for pregnant women to be seen for their first prenatal visit when they are well into the first trimester, when women may already be on an excessive weight gain trajectory. Whether women would benefit from earlier prenatal care or educational materials before the first visit could be explored. Overweight and obese women need to feel empowered to ask for advice about healthy GWG and be ensured that they will receive useful, nonjudgmental advice. Common misconceptions, such as the need to "eat

for two," need to be debunked. Interventions are needed that can inform pregnant women of the importance of healthy GWG and physical activity during pregnancy, and encourage behavioral changes that reduce the proportion of overweight and obese women with excessive GWG. Although some resource-intensive behavioral interventions for preventing excessive GWG exist (Mottola et al., 2010; Phelan et al., 2011b; Polley, Wing, & Sims, 2002), effective strategies that can be widely disseminated without significant cost and clinical burden are needed. Strategies of this type will have significant potential to not only reduce short-term pregnancy complications, but also reduce the long-term morbidity that is associated with postpartum weight retention and chronic overweight and obesity.

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