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Perceptions of low-income African-American mothers about excessive gestational weight gain

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Abstract

Objective—A rising number of low-income African-American mothers gain more weight in pregnancy than is recommended, placing them at risk for poor maternal and fetal health outcomes. Little is known about the perceptions of mothers in this population that may influence excessive gestational weight gain.

Methods—In 2010–2011, we conducted 4 focus groups with 31 low-income, pregnant African-Americans in Philadelphia. Two readers independently coded the focus group transcripts to identify recurrent themes.

Results—We identified 9 themes around perceptions that encouraged or discouraged high gestational weight gain. Mothers attributed high weight gain to eating more in pregnancy, which was the result of being hungrier and the belief that consuming more calories while pregnant was essential for babies' health. Family members, especially participants own mothers, strongly reinforced the need to “eat for two” to make a healthy baby. Mothers and their families recognized the link between poor fetal outcomes and low weight gains but not higher gains, and thus, most had a greater pre-occupation with too little food intake and weight gain rather than too much. Having physical symptoms from overeating and weight retention after previous pregnancies were factors that discouraged higher gains.

Conclusions—Low-income African American mothers had more perceptions encouraging high gestational weight gain than discouraging it. Interventions to prevent excessive weight gain need to be sensitive to these perceptions. Messages that link guideline recommended weight gain to optimal infant outcomes and mothers' physical symptoms may be most effective for weight control.

Keywords

Pregnancy; Weight gain; African-American; Obesity; Diet

Weight gain in pregnancy is critical for fetal growth; however, there may be a threshold at which higher gestational weight gain is not always better for mother and child [1]. Recent studies suggest multiple negative health outcomes associated with greater gains during pregnancy, including alterations in maternal glucose metabolism [2, 3], delivery

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complications [4], childhood obesity [5–7], and higher postpartum weight retention, which predisposes to later risk of obesity in the mother [8, 9]. In response to these data, the Institute of Medicine (IOM) revised gestational weight gain guidelines in 2009 for the first time in nearly two decades, recommending smaller gains, particularly for mothers with higher pre-pregnancy body mass indices (BMI). However, gaining in excess of the guidelines is more common than is gaining within recommended levels [10].

While low-income African-American mothers have been historically regarded as at-risk for inadequate gestational weight gains [11], the proportion of mothers gaining above IOM recommendations in this group has also increased [12, 13]. In a study of low-income African-American mothers in New York City, Lederman and colleagues found that over two-thirds of the sample gained more than recommended by the IOM, and 100% of the overweight and obese mothers experienced excessive gain [14]. African-American mothers may be at particular risk of higher gains because they are more likely to enter pregnancy obese [15], and maternal obesity increases the risk for weight gains in excess of recommended levels [16].

Despite the need for interventions promoting healthy weight gain in pregnancy among low-income African-American mothers, little is known about the perceptions of mothers in this population that may influence gestational weight gain. This information is critical for the design of weight control interventions in pregnancy that seem sensible to mothers within their social context and that are consistent with the aspirations they have for their own health and that of their baby. For example, perceptions about the seriousness of weight-related health problems for mother and child, susceptibility to those problems, and the modifiability of perceived risk may all influence mothers' motivation to engage in health behaviors in pregnancy and their willingness to participate in a weight control intervention [17, 18].

The objective of this study was to understand the perceptions of urban, low-income, pregnant African-Americans about high weight gain in pregnancy, specifically focused on factors that contribute to higher gains, sources of weight gain advice, weight-related health risks, and barriers and facilitators to gaining within recommended levels. We used qualitative research methods because they are ideally suited for understanding how an individual's frame of reference and psychosocial context influence health-related behaviors [19].

Methods

Study design and participants

From September 2010 to January 2011, we conducted 4 focus groups with a total of 31 participants. African-American mothers were recruited from a single university-affiliated outpatient prenatal care clinic in Philadelphia, PA, which predominately serves Medicaid-insured patients. In the waiting room before their prenatal care appointment, mothers were recruited by a research assistant who explained the study aims and administered a brief screening form to determine eligibility. To be eligible for participation, mothers had to be at least 18 years of age, pregnant, and self-identify as African-American. Because no other qualitative studies exploring perceptions about weight gain in pregnancy have exclusively focused on low-income African-American mothers, we intentionally used broad entry criteria to identify a variety of perspectives and experiences in each group. Of the 44 interested and eligible mothers, 31 attended one of our four 1-hour long groups (approximately 7–8 mothers per group). The remaining 13 mothers either delivered a baby prior to the session (n=3) or missed their scheduled group (n=10). Each mother provided written consent before participating in the session and was given lunch along with \$30 as

compensation for her time and travel. The Temple University Institutional Review Board approved the study protocol.

Data collection

Focus groups were moderated by one of the authors (S.J.H), a general internist with nearly 10 years of clinical experience working with low-income African-American women. The moderator was white and was not involved in providing health care to the subjects. The focus group discussion guide and prompting questions were developed by the authors whose expertise included internal medicine, pediatrics, and obstetrics. The guide was informed by prior research in this area [20–25]. Broad open-ended questions (Table 1) were designed to explore mothers' perceptions about the meaning, causes, and risks of high gestational weight gain, sources of weight gain advice, and barriers and facilitators to achieving recommended weight gain in pregnancy. Specific probing questions followed, to clarify participants' responses and to narrow the discussion. Sessions were digitally recorded and transcribed verbatim. Participants also completed a brief questionnaire to assess demographic information, parity, pre-pregnancy weight, and height.

Data analysis

Using principles of grounded theory [26], two of the authors (S.J.H. and T.Q.Z.) independently coded the data to identify recurrent themes contained within the text of all the focus group transcripts, selecting participant comments that served as examples of each theme. Atlas.ti software (v.6.1.1) was used to assist with data coding and management. These two authors met on three occasions to assess the level of concordance regarding themes and their supporting comments, discuss emerging or new themes, and check for completeness of the codes. Coding disagreements were discussed until consensus was reached, with audiotapes reviewed as necessary. Related themes were consolidated from input of two additional investigators (G.D.F. and R.C.W.) and then separated into two broad categories that emerged from patterns within the data.

Results

Participant characteristics

Of the 31 participants, the majority were in their third trimester of pregnancy (n=20, 65%) and multiparous (n=18, 58%). Mean age was 24 years (range: 18–40 years). Just over one-quarter (n=8, 26%) had not completed high school. While 28 (90%) of mothers reported they were single, almost all participants (n=29, 94%) lived with other adults or children (average number of persons in the home was 4). Nearly half (n=14, 45%) of mothers had a pre-pregnancy BMI at or above 25 kg/m². All participants were insured through Medicaid.

Themes from focus groups

We identified 9 themes in our analysis and grouped these themes into two broad categories that characterized mothers' perceptions about gestational weight gain: 1) perceptions which encourage high weight gain, and 2) perceptions which discourage high weight gain. Themes and representative quotes supporting each theme are summarized below and in Tables 2 and 3.

Perceptions which encourage high weight gain—The dominant belief was that overeating and poor diet quality caused high weight gain in pregnancy (Theme 1): “[I] was eating so much, the weight was coming so fast.” Mothers described larger portions as normative in pregnancy: “[I can eat] like a whole box of cereal at one time.” “You be eating double or more,” said another mother. Several reported feelings of persistent hunger that

drove them to overeat: “I really be feeling hungry. If I’m not sleeping, I’m eating.” Many mothers described cravings for fatty or fried foods, the consumption of which led to higher gains: “You look at your TV like, oh that burger look good.” “All I eat is sausage, egg, and cheese,” said another, describing why she was “gaining so much weight.” Sugary drinks were commonplace, and diet drinks seemed unnecessary: “[Do I drink] diet soda? I be thinking I don’t need no diet, I’m pregnant.” Only one mother mentioned physical inactivity as an important determinant of high weight gain in pregnancy.

Mothers believed excess food intake was essential for their babies’ health (Theme 2), and this belief appeared to result in a lack of dietary restraint: “You supposed to eat more...you gotta do what’s best for your baby because that’s who you’re growing for.” Many mothers felt powerless over their increased appetite and most were unable to say “no” to their babies, who controlled mothers’ eating and weight gain in pregnancy (Theme 3): “But I just can’t help it. I just keep eating and eating, and then what makes it so bad is the baby never gets full. The other night I made a hoagie on a Kaiser roll. I had lettuce, tomatoes, onions, oil, salt, pepper, and at the store had some chips. I ate the whole thing, and I still was hungry. I was like, it can’t be true. And I had to make it all over again.”

Mothers consistently reported that their families were always trying to feed them and encouraging them to eat, even when their feelings of hunger were absent: “I don’t force myself to eat, my mom be trying to do that. She be like, ‘T--- you gotta eat something’...I be like mom, it’s gonna make me sick.” These messages were grounded in the belief that eating was best for baby (Theme 2), and that baby would not be harmed if mothers ate or gained too much (Theme 4). However, too little weight gain might “starve the baby” and lead to a series of negative consequences, including prematurity and low birth weight.

Healthcare provider messages about weight gain, on the other hand, were described as “limited” and few mothers relied on or listened to their obstetric providers about IOM recommended weight gain targets (Theme 5). When questioned specifically about the amount of weight mothers were supposed to gain in pregnancy, many mothers “didn’t know” or remembered inaccurate ranges given to them by their providers, such as “no more than 13 pounds” or “they told me over 50 pounds.” The small number of mothers who did report receiving regular provider advice about limiting weight gain felt those limits were too restrictive: “When you first go to the doctors, they ask you your weight...you be 160 [pounds] when you found out you pregnant, and how can they not expect you to get to 220? I mean, you have like a whole six months left to go, when you’re gonna want to eat, you’re gonna be hungry.” The messages of healthcare providers to limit weight gain in pregnancy were in direct conflict with advice from family members and mothers’ own beliefs to “feed the baby,” and thus, providers were often ignored: “I feel like our mothers know the most...I mean the doctors, most of them ain’t never been pregnant, so they really don’t know [about eating in pregnancy] because they really ain’t gone through it.”

Several of the leaner mothers viewed high gestational weight gain as attractive and even desirable because of strong sociocultural influences for curves and a “woman’s body” (Theme 6). Most of these mothers believed they could easily lose the weight they gained in pregnancy, so they were more accepting of their new larger size and shape: “I always go right back the way I was. My body always go back.” Another shared, “As soon as they pulled the placenta out [after my last baby], I just felt skinny all over again. I was a size four or five.”

Perceptions which discourage high weight gain—A few mothers described negative maternal health outcomes related to higher gains. Examples included diabetes and preeclampsia in pregnancy (Theme 7), along with weight retention and obesity postpartum

(Theme 8). These poor health outcomes motivated some mothers to limit their food intake and weight gain in pregnancy, particularly those mothers who began pregnancy obese: “I think mentally I prepared myself not to eat a lot so I wouldn’t gain a lot of weight, cause it’s hard for me to get the weight off.” Additionally, mothers spoke about physical symptoms, especially in late pregnancy, which made it difficult to overeat and often influenced mothers’ diet quality (Theme 9): “When I put hot sauce on my greens, it was like flames all in my chest. As it gets closer to the day that the baby get out, it gets worse.” “Yeah, I can’t eat oily stuff anymore...everything has to be baked or I get sick,” shared another. Many described rapid fullness and physical discomfort at higher gains: “It’s uncomfortable...my body feels hot and heavy.”

Discussion

We found that low-income African American mothers had many more perceptions encouraging high gestational weight gain than discouraging it. Most notably, mothers in our study believed that consuming more calories while pregnant was essential for babies’ health. Mothers believed their increased hunger in pregnancy was a reflection of babies’ energy needs and caused them to overeat. Family members, especially participants’ own mothers, strongly reinforced the need to “eat for two” to make a healthy baby. Because mothers and their families recognized the link between poor fetal outcomes and low weight gains but not higher gains, most had a greater pre-occupation with too little food intake and weight gain in pregnancy rather than too much.

Data from other studies of pregnant women also suggest that mothers are primarily motivated to engage in behaviors perceived to protect the well-being of the fetus and avoid those behaviors believed to cause fetal harm [21, 23, 27]. If high weight gain is not perceived as a threat to baby, mothers are unlikely to do something to prevent excessive gain from happening (i.e., portion control). Health behavior models concur that perceptions of heightened vulnerability are essential in adoption of preventive health behaviors [17, 28, 29]. For example, widespread public health messages about smoking during pregnancy and its link to numerous poor fetal outcomes have led to spontaneous quit rates for nearly half of smokers before or during pregnancy [30–32], including many mothers from our study (data not shown). If mothers had a better understanding of the amount of weight gain necessary for the best and worst infant outcomes, it is possible that a greater proportion would attempt to improve diet quality, limit caloric intake, and thus, gain within IOM recommended ranges. Groth and colleagues generated a similar hypothesis from their data among an ethnically diverse sample of mothers in New York [23].

We hypothesize that without involving family members in discussions around optimal gestational weight gain, however, low-income African-American mothers’ food intake in pregnancy is unlikely to change. Family members were strong drivers of mothers’ eating due to their perception of what was best for baby. Mothers attempting to limit food intake might challenge cultural norms and cause conflict among extended family who are important sources of emotional and instrumental support [33, 34]. Perhaps to avoid this tension, most mothers in our study followed the advice of their family members, especially their own mothers, regarding eating rather than worry about limiting weight gain to the amounts recommended by their doctors. Hispanic mothers have similarly described pressure from family members to eat more and “feed the baby” to ensure babies’ health, messages that were often in direct conflict with nutritionist advice [20]. Data have suggested that obstetric providers recognize the influence of friends, family, and culture encouraging higher gains, but few feel confident that their messages about nutrition and weight gain will be heard [35]. Thus, counseling about gestational weight gain is often sporadic [35],

promoting patient confusion and a feeling that provider advice about eating and weight gain is irrelevant [20], a perception we found among mothers in our study.

When mothers in our study listened to their own bodies, instead of their babies or families, many were able to limit diet quantity and improve diet quality. Physical discomfort from fullness or gastroesophageal reflux prohibited mothers from overeating or consuming high fat, fried foods. However, these symptoms often weren't present until late pregnancy when many mothers were already likely to have exceeded IOM weight gain recommendations. Limiting intake at this late stage may do little to change mothers' weight gain trajectory. Several mothers experiences with overweight or high weight gain in previous pregnancies were factors that seemed to discourage higher gains at an earlier stage in pregnancy; these mothers did not want to again experience the physical symptoms or health consequences during and after pregnancy that were associated with higher gains.

While the present study had several strengths, including the use of open-ended questions that revealed insights about mothers' personal beliefs and values, which were unlikely to have been ascertained from closed-ended approaches, we acknowledge that limitations to this study exist. Qualitative research is designed to generate hypotheses for a more integrated framework of understanding about a specific group or topic, and thus, the results from our small study may not be generalizable to other populations of mothers from different socioeconomic or cultural backgrounds. However, our sample included mothers of varied ages, parity, and BMI that provided the opportunity to identify a diversity of perspectives on weight gain in pregnancy. While it is possible that including mothers with different body weights or parity in the same group may have inhibited the in-depth responses among some participants, our experienced moderator encouraged all participants to speak and often probed for further clarification. Future studies should consider stratifying groups by pre-pregnancy BMI or parity to confirm our preliminary findings. We also did not have information at recruitment about which mothers would go on to exceed IOM guidelines for weight gain in pregnancy, and thus, we did not select participants based on their actual gestational weight gains.

Despite these limitations, this qualitative study provided important insights about gestational weight gain from the perspective of urban, low-income African-American mothers, a group at elevated risk for high weight gain in pregnancy and its resultant poor health outcomes. Because the dominant belief was that overeating and higher gains would make a healthy baby, messages delivered to low-income African American mothers about weight control in pregnancy should be sensitive to the way in which these mothers (and their own mothers) perceive the consequences of restricting food intake. To promote compliance with weight gain recommendations, mothers and their family members may benefit from information about energy balance in pregnancy (i.e., how many calories the baby actually needs in each trimester of pregnancy; the importance of exercise in pregnancy for the health of mothers and their babies) and the distinction between internal and external hunger cues. Mothers who understood the physical sequelae and health outcomes resulting from higher gains were more likely to modify their diet, and thus, additional messages about physical symptoms and optimal health outcomes for mothers and their babies may enhance mothers' weight control efforts. These messages should be communicated early enough in pregnancy to impact mothers' weight gain trajectory, perhaps through the use of narratives from multiparous mothers. Findings from this study might be useful for healthcare providers or others planning interventions to promote healthy weight gain in pregnancy among low-income African-American mothers.

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Table 1

Sample questions from the moderator’s script

Do you know how much weight you are supposed to gain in pregnancy? How do you know?
What does gaining too much weight in pregnancy mean to you?
Why do some women gain too much in pregnancy?
Where do you get your information about weight gain in pregnancy? Is this a source you trust?
Are there benefits from gaining too much weight in pregnancy? For mothers? For babies? What are they?
Are there problems with gaining too much weight in pregnancy? For mothers? For babies? What are they?
Are you worried that you may hold onto the weight you gain in this pregnancy? Why or why not?
Is it possible to control the amount of weight you gain in pregnancy? Why or why not?

Table 2

Perceptions which encourage high weight gain

Themes	Representative comments from focus group participants
1. Overeating and poor diet quality promote high weight gain	<p>"I was always eating with my first baby. That's why I [was] huge."</p> <p>"I was 129 pounds... now I'm 186... yeah, it's cause I'm eating more, my cousin told me I'm eating her out of house and home."</p> <p>"I gained 50 pounds [with my first pregnancy]. I was only 106 pounds and I went up to like 150 or something. I ate a lot of salt... I drank a lot of sodas, tea."</p>
2. Overeating and higher gains are necessary to meet babies' nutritional needs	<p>"You're eating for two. It's not just yourself anymore... you have to feed another individual."</p> <p>"I don't think you should worry about [excessive gain] because it's for the baby, whatever. You need to gain weight too."</p> <p>"When you pregnant a lot of people try to feed you. Like my grandma, every time I got to her house, she be like 'you hungry?' I got good foods. You have to feed that baby.' Even if you not hungry, they try to feed you."</p>
3. Babies control hunger and food intake, not mothers	<p>"I eat like two bowls of oatmeal and then I'll sit down for like a half hour and I get up and eat two more bowls of oatmeal, and then I'll be cool for a couple of hours. I think [my baby] eats the first meal by herself."</p> <p>"Hungry feels like the baby start kicking."</p> <p>"I be in the restaurant and there be nothing I want. The baby be like, 'mom no, not this.' I go somewhere else."</p> <p>"This baby is totally different because with my other children, I had a taste for seafood, I could eat hot stuff. This baby is just like, 'I don't care what you did with my brothers and sisters, you're not doing it with me.'"</p>
4. High weight gain is not bad for babies, but too little weight gain may be harmful	<p>"[Risks of higher gains to babies?] None."</p> <p>"I gained a lot of weight with all my kids. I never had a baby over 7 pounds."</p> <p>"When you gain too little weight, you starve the baby."</p>
5. Few mothers rely on obstetric providers for weight-related information	<p>"My doctors provide general information [about weight], but nothing major"</p> <p>"Because any more than 40 pounds, [the doctors] be trying to say you gotta [diet]. They told my cousin she gotta diet. How's a pregnant girl gonna diet?"</p> <p>"Every doctor says something different about your diet, what you eat. It don't be the same every time."</p>
6. Leaner mothers believe their bodies are more attractive at higher gains	<p>"I was so skinny, I wanted to gain weight."</p> <p>"You have curves, and it's just like you don't have a teenager body anymore, you have a woman body."</p> <p>"I want some [weight]. I'm all tiny. I want big boobs like everybody else."</p>

Table 3

Perceptions which discourage high weight gain

Themes	Representative comments from focus group participants
7. High weight gain is bad for mothers' health in pregnancy	<p>"If you got sugar, you gotta watch it."</p> <p>"[When] I had my first daughter, I actually had a seizure from all the salt and stuff that I was eating and all the weight I had gained."</p> <p>"When my mom was pregnant with me and my sisters, she had gestational diabetes, she had preeclampsia...so that's the reason why I watch what I eat...I don't want all them problems."</p>
8. Heavier mothers worry about postpartum weight retention resulting from higher gains	<p>"I'm usually about 180 [pounds], now I'm like over 200. 200 is not good for me, up in there...I'm scared that once I have this baby, it's not gonna come off."</p> <p>"My first pregnancy I gained a lot of weight. But this one I'm more monitoring what I eat, what I do, because I don't want to blow up the way I did before."</p> <p>"I just want to lose my stomach...I was never skinny, so it's not a point about being small, but I'm scared I'm gonna stay this way."</p> <p>"I don't want to gain much weight. I want to fit into my prom dress again."</p>
9. Physical symptoms inhibit food intake	<p>"I gotta sit down, lay on the floor, stretch out after I eat. Now, I can't even finish the whole plate because I'm all uncomfortable."</p> <p>"Thanksgiving, I couldn't eat all my food [because] it starts to get real tight...I have to slow down because I can't eat a lot, I be full."</p> <p>"All the sodas that I drink, it brings the acid reflux. So therefore I can't drink it, so I get frustrated. So I have to drink orange juice, but that comes up. So now I'm left to drink water."</p>