Women, Infants, and Children Providers' Perceptions of Managing Obesity in Pregnancy: A Qualitative Study

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Abstract

Obesity is exceedingly common among low-income pregnant mothers, a primary target population of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). While protocols at WIC address this nutritional problem, WIC nutritionists' perceptions of the challenges of managing obesity in pregnancy are unknown. A qualitative study was conducted using data transcribed from audiotapes of focus groups among 27 Philadelphia WIC nutritionists to identify barriers and facilitators of counseling pregnant clients with obesity. Transcripts were coded for most common themes. Findings revealed 11 major themes clustered into three categories. The first category focused on barriers to counseling that WIC providers perceived were client driven. They perceived that mothers with obesity 1) were burdened by competing demands in their lives; 2) lacked interest in changing their nutrition behaviors; 3) misperceived their weight and healthfulness of diet; and 4) had difficulty prioritizing WIC input due to conflicting advice from others. The second category addressed barriers WIC providers perceived were WIC driven. They felt that 5) they were constrained by structural barriers at WIC; 6) counseling was protocol driven; and 7) they feared they would offend mothers. The last category described facilitators to creating more effective counseling sessions. Providers' strategies were to 8) meet mothers where they are; 9) set small behavioral goals; 10) frame messages around baby's development; and 11) build rapport early to establish trust. WIC nutritionists reported numerous barriers to counseling pregnant clients with obesity. Yet several potential solutions were uncovered, including: training WIC staff to use a patient-centered counseling approach; incorporating technology to overcome issues of time-management and follow-up; developing collaborations with family and other healthcare providers; and message framing around baby to help WIC clients adhere to nutrition goals.

Women, Infants, and Children Providers' Perceptions of Managing Obesity in Pregnancy: A Qualitative Study

While it is commonly understood that a woman will gain a considerable amount of weight during her pregnancy, does every woman know how much weight gain is too much? For low-income pregnant women, weight gain poses a particular challenge, as many of these women already have obesity. Communicating health information to this population is therefore extremely important to mitigate the potential health risks they face. The present study examined perceptions of Women, Infants, and Children (WIC) providers' challenges and potential solutions to managing obesity during pregnancy.

Literature Review

Obesity in the United States

Obesity is one of the focuses of many public health efforts in the United States (Ogden et al., 2014). It is estimated that 37.7% of the United States adult population has obesity [body mass index (BMI) ≥ 30 kg/m^2] (Flegal et al., 2016). Additionally, about 34% of the adult population in the United States is overweight [BMI $\geq$ 25-29.9 kg/m^2] (Ogden et al., 2014). The major determinants of obesity are complex, but can be characterized by new or altered interactions with one's environment. Some factors associated with obesity are related to food supply, eating behaviors, family-work culture, socioeconomic status and public policy (Dixon, 2009). However, the relationship between socioeconomic status and obesity is not entirely clear. It is likely that causality operates in either direction among adults (Wang, 2001).

Obesity is a condition of chronic nutrient overload and is associated with a wide variety of health issues, including some specific diseases such as type 2 diabetes and hypertension to impaired quality of life, psychosocial disturbance and limited access to quality care (Dixon,

2009). There is also a clear association between increasing BMI and many common and rare cancers, as well as cardiovascular disease (Dixon, 2009). An estimated 300,000 annual deaths in the USA are associated with being overweight or obese; 80% of these deaths are individuals with a BMI greater than 30 kg/m^2 (Dixon, 2009).

Prevalence of obesity increases with age and is generally much higher among black women than among white women (Van Itallie, 1985). Women in the United States are disproportionately overweight compared to men, particularly racial minority and socioeconomically disadvantaged women (Davis et al., 2009). African American women have the highest prevalence of obesity, with rates exceeding 50% (Flegal et al., 2016).

Pregnancy and Obesity

Pregnancy is considered to be a strong risk factor for new or persistent obesity (Herring et al., 2012). Pregnancy is a unique time in a woman's life when weight gain is inevitable. Women who begin pregnancy with obesity are more likely than non-obese women to gain in excess of current gestational weight gain guidelines, putting themselves and their babies at risk for a myriad of health complications (Herring et al., 2010). The Institute of Medicine (IOM) guidelines for weight gain during pregnancy are widely used and accepted by the American College of Obstetricians and Gynecologists (Stotland et al., 2010). According to the IOM, lower weight gain is suggested for women with a higher BMI before pregnancy. Many pregnant women with obesity are unaware of the amount of weight that is considered healthy for them to gain, often because they believe in the "eat for two" myth that all weight gain in pregnancy is positive for health outcomes (Brown & Avery, 2012). Therefore, it is important that healthcare providers educate their pregnant patients about these guidelines. Outcomes for women who gain weight outside the IOM guidelines include preterm birth, gestational diabetes, cesarean birth,

low birth weight, macrosomia, neonatal morbidity, and postpartum weight retention (Stotland et al., 2010).

During pregnancy, it is likely that a woman will see a healthcare provider more frequently than any other time in her life (Stotland et al., 2010). Women who are pregnant may be motivated to make lifestyle changes because they are no longer worrying just about their own health, but also about the health of their baby (Stotland, et al., 2010). Therefore, prenatal care may provide an opportunity for healthcare providers to assist women in making positive lifestyle changes affecting weight, nutrition, and physical activity (Stotland et al., 2010). While gestational weight gain in excess of current guidelines can be modified through changes in diet quality and physical activity, low-income mothers with obesity have been understudied.

WIC and Health Communication

The Special Supplemental Nutrition Program for Women, Infants, and Children is administered by the U.S. Department of Agriculture, Food and Nutrition Service to provide benefits and services to groups who are at substantial risk of poor nutrition. This initiative provides grants for program administration and operation to approximately 9,000 WIC community clinics nationwide, 10 of which are located in the Philadelphia area (Thorn et al., 2015). To receive WIC benefits, eligibility includes: 1) income <185% of poverty level; 2) nutritionally "at-risk" (for which overweight or obesity qualifies); and 3) pregnant, within the first 6 months postpartum, or have a child under 5 years of age (Thorn et al., 2015). WIC provides supplemental nutritious foods, nutrition education, breastfeeding promotion and support, screening and referrals to other health, welfare and social services to nearly two million pregnant women annually (Thorn et al., 2015).

As the leading public health nutrition program for pregnant women and their children in the United States, WIC is in a unique position to impact the disproportionate effect that the obesity epidemic has on the low-income, minority populations it serves. Yet no published data document WIC provider perceptions of the challenges to managing obesity in pregnancy, nor their communication strategies with clients for achieving healthy gestational weight gain. This information is critical for slowing the trajectory of weight gained in pregnancy by low-income mothers with obesity—an outcome that could significantly reduce short- and long-term morbidity for both mothers and their children.

Health communication is a core skill for healthcare providers, yet many patients have difficulty understanding what their providers say immediately upon leaving their offices. Health literacy refers to the ability of patients to obtain, process and understand basic health information and services needed to make appropriate health decisions (Nutbeam, 2006). Data suggest a strong association between low socioeconomic status and lower levels of health literacy (Kin et al., 2001). This is particularly relevant to communicating nutrition information to pregnant, low-income women at WIC, as they are of low socioeconomic status. Therefore, health literacy for nutrition and weight gain during pregnancy of low-income mothers is an important area of focus for WIC providers.

Empathy in the Patient-Provider Relationship

In addition to the knowledge the WIC providers have about nutrition, the role of empathy is important to consider when discussing the relationship between the WIC provider and the participant. In a study of participants with type 2 diabetes, patients reported needing healthcare professionals to form relationships with them and display empathy toward them. Particularly, it was significant to patients when their healthcare providers used language that suggested an

understanding of the challenges and burdens of their diagnoses (Cotugno et al., 2015). Patients reported that frequent rotation of clinical staff limited continuity of care, feeling they lacked enough time to develop a relationship with providers and ineffective communication negatively affected their care (Cotugno et al., 2015).

While there is limited research to support the link between measures of healthcare provider empathy and tangible patient outcomes (Canale et al., 2012), studies have shown that physicians' understanding of their patients' perspectives can enhance patients' perceptions of being helped and therefore increase their perception of a social support network (Canale et al., 2012). Another study of the relationship between healthcare providers and their diabetic patients showed that a physician's accurate understanding of their patient's disease experience was associated with better patient self-care (Canale et al., 2012). Thus, it is possible to imagine that empathetic interactions between WIC nutritionists and their pregnant clients with obesity would improve patient adherence to recommendations provided at routine visits.

The Present Study

The purpose of this study was to identify barriers and facilitators held by WIC providers to counseling their pregnant clients with obesity. We hypothesized that the WIC provider-patient relationship played a significant role in the efficacy of health communication to these high-risk women.

Methods

Study Area

This study of WIC providers was conducted at Temple University in Philadelphia, PA from June through August 2016. Philadelphia is the fifth-most populous city in the United States, with an estimated population of 1,585,577. As of 2010, the racial breakdown of the city's

residents were 42.2% Black, 36.9% White, 12.3% Hispanic or Latino, 6.3% Asian, and 2.3% multiracial or other. The rate of adult obesity is continuing to increase in Philadelphia; the highest rates of adult obesity are in the Black and Hispanic populations. According to the Center for Disease Control, over 70% of these populations are considered overweight or obese (2013). Philadelphia has a poverty rate of approximately 28.4%, and many people in this category are eligible for the WIC program (Mayer et al., 2014).

Study Design and Participants

We conducted five focus groups with a total of 27 WIC nutritionists. WIC providers were given information about the study through flyers and email; interested nutritionists called a research assistant who explained the study aims and administered a brief screening form to determine eligibility. To be eligible for participation, providers had to be at least 21 years of age, counsel pregnant women at WIC, and work at Philadelphia WIC as a nutritionist for at least 3 months. Of the more than 40 nutritionists employed with the Philadelphia WIC program, 27 attended one of our five 1-hour long groups (approximately 4-6 providers per group). Each nutritionist provided written consent before participating in the session and was given lunch or dinner along with $100 as compensation for 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 over 10 years of clinical experience. The focus group discussion guide and prompting questions were developed by the authors and informed by prior research in this area, including qualitative studies among obstetricians (Stotland et al., 2010; Chamberlin et al., 2002). Questions were divided into three broad categories: 1) logistics of visits to WIC; 2) topics discussed with

pregnant clients with obesity; and 3) counseling challenges and strategies. Sample logistics questions included: "How do you assess clients' earliest pregnancy weight? How many clients do you see in one day? How do you follow up with clients in between in-person visits?" Sample topic questions included: "How do you decide what to talk about with pregnant mothers? How much flexibility do you have to discuss topics that are off the WIC protocol? How do the topics discussed with obese clients differ in the first trimester compared to later in pregnancy?" Sample counseling strategies questions included: How much do you think your clients are listening to you? How do you decide which goals your pregnant clients should set? What makes counseling difficult? What makes it easy?" Specific probing questions, such as "Can you tell me more about that?" or "Can you help me understand that better?" were used to clarify participant responses and narrow the discussion. Sessions were audio-recorded and transcribed verbatim. At the time of their interview, participants were also asked to complete a brief questionnaire assessing demographics.

Data Analysis

Using an inductive approach, initial findings were discussed between two of the authors (J.E.C. and S.J.H.) at the conclusion of each focus group during a debrief session. Both authors then independently coded all five focus groups using grounded theory to identify recurrent themes contained within the text of the transcripts. The authors selected the same focus group that they would each read first. After reading through this group, each author made detailed annotations to identify potential themes. The two authors met to assess the level of concordance of their notes regarding the themes in the first focus group and their supporting participant comments and used this as a basis for how they would code the next four themes. The authors met on five separate occasions for each focus group to discuss emerging themes and check for

completeness of codes. Through systematic sorting of data and labeling ideas as they appeared and reappeared, eleven major themes were identified by the authors and were organized into three broad categories that emerged from patterns within the data. Coding disagreements were discussed until consensus was reached, with audiotapes reviewed as necessary.

Results

Participant Characteristics

Of the 27 study participants, the majority were female (n=21, 78%) and Caucasian (n=19, 70%). Mean age was 29 years (range 23-48 years). All participants (n=27, 100%) completed their bachelor's degree, with (n=3, 11%) of participants holding a Master's degree. Only 2 (7%) were registered dieticians. Nutritionists from all 10 Philadelphia WIC community clinic sites were represented.

Themes from Focus Groups

We identified 11 major themes clustered into three categories that characterized WIC providers' perceptions of the challenges and solutions to managing obesity in pregnancy: 1) perceived client-driven barriers; 2) perceived WIC-driven barriers; and 3) perceived facilitators of effective counseling sessions. Themes and representative quotes supporting each theme are summarized below and in Tables 1, 2, and 3.

Category 1: Perceived client-driven barriers to managing obesity in pregnancy

Theme 1. Mothers were burdened by the competing demands they face in their lives. The majority of WIC providers described the lives of their pregnant clients as demanding and hectic due to the many competing considerations they have in addition to living a healthy lifestyle. Because of their complex and ever-changing circumstances, pregnant clients were perceived as seldom having the time or resources to be able to prepare healthy foods for

themselves. Some of these competing factors included the immediate needs of finding employment and housing or taking care of children. As one provider described, "Their nutrition and what they're eating isn't important to them because they have so many other things going on. Some of them are, you know, don't have jobs, don't have cars, don't have help—and it's just them. So [their priority] you know, [is] just getting through."

Theme 2. Mothers lacked interest in changing their nutrition behaviors. Many providers perceived that their pregnant clients came to WIC for the sole purpose of receiving checks rather than for nutritional counseling, and thus, providers found it difficult to be able to hold the client's interest during sessions. "Some people don't even care what you say," one provider noted. "They're just there for the checks. You could tell them anything that they would want to hear." Often providers voiced that mothers' competing demands played a role in their disinterest. Children were thought to be mothers' primary priority, not their own health and nutrition. One provider noted, " [Moms will listen to you, but it] depends on what it's about. When you tell a mom that her child's iron is low, it's, like, 'up in arms.' Most of the time, they're very concerned. But, unless there's, like, an issue that they already know about, like a feeding issue, or something like that, they're—they're not usually extremely responsive."

Theme 3: Mothers misperceived their body weight and healthfulness of diet. Providers consistently reported that mothers misperceived what constitutes a healthy behavior, ranging from their dietary intake (e.g., "Gatorade is healthy") to the amount of weight gained during pregnancy. Often providers voiced that mothers were unaware of their pre-pregnancy weights, which presented a problem for WIC providers to accurately track clients' weight gain during pregnancy: "But a lot of them don't know and it's just, you know, that they self-state it and we just have to go by what they say." WIC providers were often skeptical of the mother's pre-

pregnancy weight unless they had documentation from the mother's physician. One provider explained, "I think they guess [their weight] in general. A lot of women that come don't have an accurate pre-pregnancy weight unless it's from the doctor." Most providers reported that they track a mother's weight gain based on her weight when she first is measured at WIC. However, her first visit at WIC could be when she is several months into her pregnancy; this seemed to be a point of frustration for providers, as this weight may not have been an accurate baseline weight.

Another commonly reported misconception among pregnant clients with obesity was the significance of their weight gain and how much weight they should be gaining to attain the best health outcomes for themselves and their babies. Providers reported difficulty of communicating the meaning of mothers' weight gain charts throughout their pregnancies as some mothers were most concerned about too little gain, and others about too much weight gain. Providers mostly offered reassurance and/or reframing to encourage healthy gestational weight gain.

Several providers discussed the issue of mothers having limited knowledge and/or language to understand the nutrition information they are given in pregnancy. One provider said, "Well, and I mean, I think a lot of times, especially when there's, like, a language barrier or some sort, a lot of moms come in and they don't know what peanut butter is. So you have to show them what peanut butter is." Additionally, providers reported frustration when they needed to rely on their client's partner or a language translation phone line to communicate counseling information to the client. WIC providers felt like they had less control over the counseling session when translation was involved because they didn't know if all of the information was being communicated sufficiently.

Theme 4: Mothers had difficulty prioritizing WIC nutritionist input due to conflicting advice from others (e.g., family members, physicians). A dominant theme among providers was that they often received "push-back" from mothers during counseling sessions because these same mothers were given nutrition advice elsewhere. WIC providers voiced particular frustration when their pregnant clients with obesity were told by their obstetricians that their weight gain was not an issue of concern. Recommendations from WIC staff were then perceived to fall on deaf ears. In addition, WIC providers identified mothers who had prior pregnancies to be less receptive to their advice because they assumed their behaviors during these pregnancies were healthy, since their previous babies turned out "fine." A provider recounted one of her clients saying, "Oh, [my weight gain] was normal for me during my pregnancies! This has been the case for all of my past pregnancies."

Table 1

Perceived Client-Driven Barriers to Managing Obesity in Pregnancy

Theme	WIC Provider Quotes
1. Mothers were burdened by the competing demands they face in their lives.	"They're trying to keep their children entertained [at the visit]. They're screaming, they're running around, the mom maybe wants to listen, but can't because she's so distracted with the kids. So it's not necessarily—I wouldn't say that, always, mom is not concerned about her weight, but just cannot be focused on it because she has no choice."
	"Some moms really just don't have time, they have places to go. Sometimes they have other doctor's appointments to go to. Unfortunately some people aren't good with planning; they know they have a doctor's appointment, they make their appointment closer. Sometimes, the WIC appointment takes longer than it's supposed to. So when you're talking to them, sometimes they're barely listening because they—they gotta go. They have somewhere to go."
	"If mom who has three kids at home, and then she's a single mom, she's not going to really think about "when do I have time to prepare my food," "when do I have time to sit down

	and eat"—she doesn't really think about that, she thinks about how am I gonna just even get food on the table for all these kids."
2. Mothers lacked interest in changing their nutrition behaviors.	"That's what I would do when I was new…try to bring the obese ones back. But it was pointless. Just because like, a lot moms don't change their habits anyway." "So, like [I typically ask moms about] all the high fat foods that they're eating. [Do they drink] sugary beverages or anything. But I'm never sure how much truth is actually being given to me...Are they just trying to appease me to get out of here or are they concerned?" "So then you're like, "How many vegetables a day do you eat? What are they?" You're trying to get them to come forward and like, are you really telling me the truth? You're just giving me—and they're like 'Well, I like corn.' And you're like, 'any other vegetables?' 'Potatoes.' And you like 'Okay, anything green?' And they're like 'broccoli.' Because that's the one thing that they see on the board behind you."
3. Mothers misperceived their body weight and healthfulness of diet.	"Sometimes they'll tell me they're drinking like 5 cups of juice a day. They're like 'I don't know why I'm gaining weight—I don't eat that much!' And then you find out that they're drinking a lot of juice." "I always tell them, based off of the pre-pregnancy weight, this is how much you've gained, but sometimes their pre-pregnancy weight is so distorted. Like people underreport and overreport it so it skews results." "I think, you know a lot of times a lot of moms will think that Gatorade's healthy and they'll give their kids Gatorade all day and I'll explain to them that it isn't and why it's not and they're shocked. You know and that they feel really bad, 'Oh my gosh, I feed my child this all day long and what can I do instead…' and some don't. There are definitely some that don't. But there are some that do."
4. Mothers had difficulty prioritizing WIC nutritionist input due to conflicting advice from others.	"And especially when you have the younger moms, and her mom comes to the appointment. She, like, overshadows the whole appointment because she don't even let her [the client] talk. Even when they're calling to make simple appointments, like, she is the participant. You are her mom, but now she is our participant—like, we have to talk to her. And then she

	[client's mother] gets offended." "So sometimes it can be hard when people come in and you go 'oh you're overweight' and they go 'oh my doctor's fine.' There's a wall there now because you are not their doctor so anything you say, [she says] 'oh it doesn't matter, my doctor said it.'" "Oh, or they just feel like they have had kids for so long, and they know what to do already, so your advice isn't really necessary 'cause they've been doing it for, like, 10+ years."

Category 2: Perceived WIC-driven barriers to managing obesity in pregnancy

Theme 5: Providers were constrained by structural barriers at WIC. The majority of providers reported long wait times for clients, exceedingly large panel sizes, lack of provider-participant continuity, few protocols for follow-up in-between visits, and time constraints during counseling sessions as significant WIC-driven impediments to effective management of obesity in pregnancy. Although clients are encouraged to make appointments with WIC, some do not adhere to these scheduled times; WIC will allow these mothers to "walk in" and be seen as the "next available appointment," leading to longer wait times during heightened midday office hours. One provider summarized the feelings echoed by numerous nutritionists, "And sometimes we just don't have time to discuss everything. We stick to the most important facts." According to the providers, a typical appointment will last about 15-20 minutes. Providers additionally reported that independent of how many children are enrolled in WIC in a given family, nutritionists are not allotted extra time to counsel mom too, leading to notable provider frustration for effectively managing obesity prenatally. Protocols for follow-up in-between visits were lacking, so nutritionists reported that they often tried to see high risk clients more frequently for counseling, but that presented its own series of challenges because of large panel

sizes and time constraints for in-person visits: "So you know, of course like every person you see you can't bring them back in a month, even if you want to."

Theme 6: Counseling was protocol driven, leaving little time for open ended questions and tailoring. WIC provider protocols for counseling were discussed extensively in each of the focus groups. They described the protocol as a checklist of items that should be covered in the session based on the client's most severe risks. Often, providers discussed focusing on items on the list, such as low iron intake, that do not directly correlate to obesity. Providers relied on these protocols to share nutritional information, and occasionally expressed fear of deviating from their scripts because of time constraints and scope of knowledge related to obstetric or psychological issues. Providers admitted this protocol-driven approach restricted their ability to establish rapport with clients (e.g., discuss how the client is actually feeling; what does she want to talk about in the session; etc.), as they perceived their counseling style to be very directing rather than collaborative and patient-centered."

Theme 7: Providers feared they would offend mothers when talking about weight. Although providers were asked to talk with pregnant mothers about their weight, the majority reported being uncomfortable with this, as weight gain was perceived as a very sensitive subject for many clients. One provider described having to be careful to not offend mothers while talking about weight, as she felt like she was "walking on eggs." Even when the mother's BMI was elevated and the health of herself and her baby were potentially at risk, providers described difficulty bringing up the subject of weight gain for fear of upsetting mothers: "Some moms will [talk to us about their weight during pregnancy], but if they don't want to touch on it and like I'll say what their BMI is… like I'll ask them if they're comfortable. If they're not comfortable I don't go further into it even if I find that they're overweight."

Table 2

Perceived WIC-Driven Barriers to Managing Obesity in Pregnancy

Theme	WIC Provider Quotes
5. Providers were constrained by structural barriers at WIC.	"If there's a lot of people, yeah. I had people waiting 2 and a half [hours]—I actually went on lunch break and came back and called and woman and she was like, 'I've been here for 2 and a half hours.' And I was like 'yeah, I saw you walk in because I was the only one there for a few hours.'" "You don't have the time. The typical time should be like 15 minutes for counseling, 10 minutes for documentation, but we don't have that time. If we go with 25 minutes for each person, we would go for like days." "Actually it's better being in an office than in a cubicle. [In a cubicle], I have to try and speak Spanish with people and literally can't get through a session because I'm surrounded by everyone's kids screaming. So it's very hard to get through." "If we see too many people that walk in, it throws [everything] off. If you have people come early—people come like 4 hours early to their appointment, we don't turn them away, but now they're jammed into a slot where there's more people. Or when people come 3 hours late, they're jammed into that slot. So those things also slow it up even though they all came on their appointment day."
6. Counseling was protocol driven, leaving little time for open-ended questions and tailoring.	"Yeah, and it really can throw you. Because like, you have this kind of list in your head, like things that you have to do, and sometimes when, I don't know, people start off on, we start that way, it might throw your whole spiel." "Since [the state required intake form] it's so complicated, you're not going to get all of it done, so it's like, now I have to do this with you here and there's less time to actually counsel you now because I have to do this extra paperwork now." "She [supervisor] told us all, you know, you should start with this [open-ended] question, you know, 'What would you like to talk about?' But you know, that habit, every day, you take the chart, you do it, you go over the main nutritional requisites."
7. Providers feared they would offend mothers when talking about	"It's, like, the toughest, when they have, like, six weeks left and they've gained too much weight. And you're like, 'Well I don't want to tell this mom she's gained too much weight. I don't want

weight.	her to feel awful about herself.'" "The hard part for me, I would feel, would be initiating the conversation about it. Mom comes in her BMI is 47—where do you start that conversation about her weight if she doesn't say it's a concern? Because we—there's a question on the questionnaire, like, 'How do you feel about your weight?' If she says she's fine with it, how is it my place to say, 'You shouldn't be?' I also look at it, in terms of, I don't want moms to have a negative body image, regardless of what their health status is." "I mean you never know, someone may be like offended. Not everyone is, but I do try to stay away from sensitive things as much as possible because we don't have a long period of time to talk to a person." "I never ask that question [if mom owns a scale]. I never have. I just feel like they're gonna be like, 'Why? Like what are you trying to say?' I mean you never know, someone may be like offended. Not everyone is, but I do try to stay away from sensitive things as much as possible because we don't have a long period of time to talk to a person."

Category 3: Perceived facilitators of managing obesity in pregnancy (potential solutions)

Theme 8: Meet mothers where they are. When WIC providers described acknowledging how mothers were feeling during the session or tailoring their counseling to meet mothers' specific needs, providers reported greater satisfaction among themselves and their clients. The providers perceived that clients who were calmer, more attentive, and happier to be in the counseling session significantly easier to counsel. They discussed the importance of breaking down barriers between themselves and the client in an attempt to get them to feel more comfortable and share more "Maybe they've been waiting a little long, but I do talk to them and I break them down, and they open up."

Theme 9: Set small behavioral goals. WIC providers identified setting small, achievable goals in counseling sessions as an effective strategy to manage obesity in pregnancy, particularly when these goals were endorsed by the client herself. Additionally, numerous providers mentioned the importance of setting only one or two goals with their clients at a time as an attempt to give their clients something achievable to work on before the next visit: "I do two [goals] at the maximum, and that's if that person was actually interacting with me and actually told me what they wanted to work on. But most of the time, it's one general goal that you know you can follow-up, or the next nutritionist can follow up with that person."

Theme 10: Frame messages around baby's development. As previously mentioned, providers perceived that some mothers found it challenging to understand how much weight they should be gaining and what their weight gain meant. To combat this issue, providers found it more meaningful when weight gain was framed around baby's development. One provider referred to a mother's weight gain chart or trajectory as a "growth chart," similar to how providers spoke with clients about their babies weight gain/growth after birth. This strategy also reportedly helped a number of providers eliminate fear of offending clients with obesity when bringing up the issue of weight.

Theme 11: Build rapport early to establish trust. One of the most important and dominant themes was the importance of establishing trust with clients early on in the counseling session. Providers reported building rapport with clients entailed listening reflectively, getting clients to open up about their feelings, and finding ways to connect with clients outside of nutrition topics. For example, one provider noted, "I think just listening too. Ya know, I'll always say, so how are you today? And sometimes they'll say, uh not so good. And a lot of times if you're busy, a lot of people will continue on with the sessions, but I'll say, oh no, why? Ya

know, and connect with them. And we'll talk and ya know they'll start to lower their guard." Most providers endorsed that when mothers felt they were able to open up and trust in providers early in sessions, these same mothers would be more receptive to receiving nutrition counseling, return for follow-up visits, and better adhere to their nutrition goals.

Table 3

Perceived Facilitators of Managing Obesity in Pregnancy (Potential Solutions in the WIC Program)

Theme	WIC Provider Quotes
8. Meet mothers where they are.	"If a person comes to you crying, anything that you say in that moment is really not going to stick with them. So I rather address the issue that is really bothering you. So it goes a long way to be able to talk about your issues, rather than to have no one to talk to at all. So I appreciate that, I do." "I enjoy that—just talking to [each client] as a person versus just like trying to get through." "I get very excited when someone really has a question—and I start right there with her concern." "And towards the end [of pregnancy] you might bring up breastfeeding when they're a little more ready for it and they're not so overwhelmed by being pregnant. They're more likely to listen."
9. Set small behavioral goals.	"I mean, a lot of times early in the pregnancy, they're dealing with morning sickness. So you want to look at, like, snacks. You don't want to look at meals. So, doing, like, yogurt and fruit, or, like, veggies and dip—things like that, that aren't gonna, like, overwhelm them. Especially when they have four other kids to worry about. Basically, I encourage them to do, like, kid food. I'm gonna encourage them to give their kids yogurt and fruit, I'm gonna encourage them to give their—their kids veggies and dip." "I only ever try to set—I aim for 1 to make it easy…when looking at other people's goals, like the last person who taught them, sometimes they have like a whole list. And I'm like, there's no way they're going to accomplish all of that."

	"I think I usually go over the general like, what their weight is now, their iron and stuff first, but then I'll say 'Mom, last time you were drinking 4 sodas a day. Have you cut back at all?' I had one like last week and she was like 'Oh I'm not drinking any soda anymore.' Which was a good thing that she cut that out. That doesn't usually happen. Yeah and I'll be like 'Oh good!' But she's still drinking a ton of juice, so that will be the next goal."
10. Frame messages around baby's development.	"I think that they just want to know, like, about their growth, if it's—like, if the baby's growth, if it's okay." "The number [weight] is stupid because they don't think of everything that is developing inside. It's just a number that they hear, so when you say, '12 pounds,' or '15 pounds' they're like, 'Oh my god.' Even though their weight gain is appropriate for that number of gestational weeks, sometimes hearing that number can throw a person off. Like, 'wait, that's a lot. That sounds like a lot.'" "I try to say, 'Oh you know, we're giving you this much milk because you know, your baby you know, is growing bones and you know, the baby is taking the calcium from you and that's why we're giving you so much milk.' And then they're like, 'Oh this is why I've been feeling this way.'"
11. Build rapport early to establish trust.	"If possible, I try to connect with them in the first second. 'How about those Phillies?' Real quick, one second, and ya know then I'll give them the spiel. Just something to connect with them for a second. I'm a little of a jokester and I'll crack a quick joke or something, ya know? 'How do you like my hair?' Just something silly kinda to get them to put their guard down. A lot of people come to my office and they're defensive." "I think [listening] also really gives them trust in you. So if you built that relationship, they are more likely to listen to anything that you're going to tell them. You're going to be able to sell the Eskimo ice. If you're automatically starting off with 'Why would you be eating that? What do you think?' They think the person doesn't care what you have to say, you've completely shut down that conversation. You know, you might as well just tell them to have a nice day and go because there's nothing really that you're going to get out of it."

	“As long as you are listening to your participant and you’re attentive to them, you’ll definitely like—like I’ve learned a lot from the participants, but it’s like how you ask things and how you connect with them. So that definitely like molds your counseling style.”

Discussion

The nutrition counseling that pregnant clients receive at WIC has the potential to reduce the health risks associated with obesity, but our findings suggest that many barriers currently exist between WIC providers and their clients to effectively manage obesity in pregnancy. WIC providers in our study perceived that mothers with obesity were burdened by the competing demands they face in their lives, lacked interest in changing their nutrition behaviors, misperceived their body weight and healthfulness of diet, and had difficulty prioritizing WIC nutritionist input due to conflicting advice from others—all of which impeded providers’ counseling efforts. WIC providers also felt constrained by structural barriers at WIC, believed their counseling was too protocol driven, and feared they would offend mothers. However, we additionally uncovered several potential strategies that facilitated effective counseling, consistent with our hypotheses, such as meeting mothers where they are, setting small behavioral goals, framing messages around baby’s development, and building rapport early to establish trust, results that may be useful for developing interventions to improve antenatal obesity treatment at WIC.

While our study is the first, to our knowledge, that describes WIC provider perceptions of managing obesity in pregnancy, our findings echo those of Chamberlin et al. that described WIC provider perceptions of managing childhood obesity, published more than a decade ago (2002). Despite that the Chamberlin study generated improved training around childhood obesity and a video intervention tested among Kentucky WIC staff, providers in our study perceived similar

barriers to counseling their pregnant WIC clients with obesity, such as mothers' competing demands, lack of motivation, WIC's perceived protocol driven counseling, and conflicting advice from WIC staff, physicians and family members. It is clear that overcoming the challenges that exist to counseling WIC patients and their families with obesity takes multicomponent interventions, with outcome assessments annually, to ensure provider buy-in and integration.

Although our study did not assess the perceptions of low-income mothers with obesity, previous literature has examined barriers reported by this population. How low-income women perceived their own challenges to weight management during pregnancy shared some similarities with the client-driven barriers that WIC providers perceived in our study. Pregnancy-related advice from other mothers in their social networks, including their mothers, grandmothers, female neighbors, and other female family members often conflicted with the advice they received at WIC or their obstetrician's office (Anderson et al., 2015; Herring et al. 2012). Additionally, as representative of WIC providers' perceptions in our study, Anderson et al. found that these high risk mothers discussed financial constraints as barriers to healthy eating and weight control in pregnancy, including insufficient income, the cost of healthy foods, and the fear of not being able to support a child (Anderson et al., 2015). However, low-income mothers have repeatedly voiced that they are more motivated to make changes to their health in pregnancy than any other period in their life course (Reyes et al. 2013), findings in direct conflict with WIC providers' perceptions that pregnant mothers with obesity lack interest and/or motivation to engage in behavior change. In a previous publication, we reported that a mother's desire to eat in pregnancy was strongly driven by her perception of her baby's hunger, and she did not want to deprive her baby of food (Reyes et al., 2013). Thus, WIC providers may be more

helpful to mothers by exploring how mothers understand energy imbalance in pregnancy, and may decide to frame issues with weight gain around the baby's growth to enhance maternal buy-in. Additionally, mothers attempting to limit food intake might challenge cultural norms and cause conflict among extended family and friends who are important sources of emotional and instrumental support. The WIC program may need to consider ways to increase collaboration among these important stakeholders, perhaps through the use of narratives from grandmothers.

We used qualitative methods in this study because they allow participants to respond spontaneously to open-ended questions, share information that may not emerge using a questionnaire, and for new hypotheses to be generated. Based on this qualitative study, we hypothesize that training WIC staff to use a patient-centered counseling approach would allow for tailoring around clients' individual preferences, needs, and values. Clients may be more willing to trust their providers once they establish a rapport with them, promoting honesty and participation during sessions. This approach could overcome time constraints identified by providers by focusing each session on the most pressing needs of the client, rather than what the protocol suggests. It may also enhance effectiveness of counseling, by engaging clients to set small goals together with their WIC providers, based on the client's most pressing needs. The WIC program, therefore, may need to consider ways to broaden their protocol driven approach to nutrition counseling, to make its nutritional messages more effective.

We additionally hypothesize that harnessing technology to engage pregnant clients with obesity at WIC may overcome many of the perceived barriers identified by providers. Because low-income mothers experience numerous competing demands in their lives, mobile health (mHealth) interventions may be an effective way to keep in contact with populations who may not have the time or resources to participate in a program that requires them to be physically

present with the provider (Castelnuovo et al., 2014). Text message-based interventions have proven successful in facilitating behavioral changes in low-income women, such as weight loss and smoking cessation (Cavallo et al., 2016; Curry et al., 2003). Incorporating texting and phone technologies into the WIC system could additionally reduce some of the WIC-driven barriers, such as time and space constraints, staff to client ratios, obstetrician-WIC provider communication, and lack of follow-up. Further research testing mHealth interventions at WIC are needed to determine if both patient and provider barriers are broken down using this approach.

This research is subject to several limitations. The sample is drawn from a single county, and thus, it may not be representative of all U.S. WIC providers. Demographics of WIC providers may or may not be associated with their weight-related counseling strategies; future research should target more diverse samples of providers to enhance generalizability. Specifically, the race and gender of each provider were not analyzed to assess whether these factors correlated with any of the themes that were discussed. The demographic of Philadelphia WIC clients is very diverse in race, culture, and language, so future studies should address these barriers in provider-client communication. In addition, the nature of focus groups may inhibit an individual's opinion from being heard, as members of focus groups tend to echo one another. Future research could assess obesity management in pregnancy using individual interviews with providers. Finally, our sample size was small; however, we found strong convergence of themes among all five focus groups.

Conclusions

WIC nutritionists reported numerous barriers to counseling pregnant clients with obesity. Yet several potential solutions were uncovered, including: training WIC staff to use a patient-

centered counseling approach; incorporating technology to overcome issues of time-management and follow-up; developing collaborations with family and other healthcare providers; and message framing around baby to help WIC clients better adhere to nutrition goals. Testing these solutions in future trials may be the best way address WIC providers' challenges of managing obesity in pregnancy.

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