



Reducing barriers to glucose control in patients with gestational diabetes

How to help patients overcome knowledge gaps, treatment nonadherence, and financial constraints

By Julia Bell, RN, ADN

ACCORDING TO the Centers for Disease Control and Prevention (CDC), 9.2% of pregnant women develop gestational diabetes mellitus (GDM) as a serious complication during pregnancy. A positive glucose tolerance test in the second trimester can be a shock for an expectant woman.

Poor glucose control can lead to poor outcomes for both mother and fetus. A woman carrying a large fetus is more likely to require surgical delivery and faces a longer recovery. What's more, although GDM usually goes away after delivery, it increases the woman's risk for developing type 2 diabetes later in life. For the fetus, placental glucose permeability causes extra fat storage; the "fat fetus" is at high risk for delayed lung development, premature delivery, and hypoglycemia immediately after birth. Also, the fetus stands a higher chance of suffering shoulder trauma during natural labor.

A pregnant woman needs time and effective mechanisms to cope with the diagnosis of GDM and the lifestyle changes she'll need to make. But the sooner she starts controlling her blood glucose, the lower the odds that GDM will harm her or her fetus. Nurses working with women who have GDM

can help reduce negative outcomes by using the nursing process to assess the patient for barriers to managing GDM and achieving good glycemic control. The most common barriers are:

- patient's lack of knowledge about diabetes and its long-term effects on the mother and fetus
- patient nonadherence, such as difficulty self-monitoring blood glucose because of the need for multiple blood samples and complex insulin administration
- lack of financial resources and limited access to health care, for uninsured and low-income patients.

Assessing and addressing barriers

First, assess the patient's knowledge of and attitude toward diabetes, and identify possible barriers to achieving and maintaining tight blood glucose control. Many newly diagnosed women mistakenly perceive GDM as simply an unpleasant pregnancy consequence. So the first step is to teach them about GDM complications.

Assessing and addressing barriers is especially helpful during your first few post-diagnosis interactions with the patient. Addressing common fears and concerns can promote a better outcome for

her and her fetus.

Start by asking the patient what she knows about GDM and eliciting her feelings about this diagnosis. She may express fears related to the baby's health and life, which you should address comprehensively. Also, the complexity of managing diabetes and the perceived overwhelming effort required to achieve tight glucose control can prevent positive coping and resolution.

Be sure to assess barriers and the skills needed to overcome them in all four patient domains—cognitive, psychosocial, psychomotor, and affective. For each domain, divide assessment criteria into three main areas:

- life situation (objective or perceived)
- education (level of understanding and ability to learn)
- skills (hands-on practice). (See Assessment criteria by domain.)

Barrier: Knowledge gap

The greatest barrier to proper GDM control is the patient's knowledge gap about the disease pathophysiology, ways to control GDM, and possible adverse outcomes for mother and fetus. Providing health education is the main approach to addressing this barrier. To help motivate the patient to adhere to

Assessment criteria by

This table shows how to assess patients for real or perceived barriers to treatment of gestational diabetes mellitus (GDM), as well as how to plan appropriate interventions and evaluate their effectiveness. During the planning stage of the nursing process, collaborate with the patient to set mutually agreed upon goals.

Domain	Life situation	Education	Skills
Cognitive (thinking) domain	Educational level and math skills	Knowledge gap	Language ability
	<ul style="list-style-type: none"> How well can patient process information? Can she calculate insulin doses and carbohydrate intake? 	<ul style="list-style-type: none"> How much does patient know about diabetes and its effects? 	<ul style="list-style-type: none"> Can patient read and understand teaching material?
<i>Planning, intervention, and evaluation</i>	<ul style="list-style-type: none"> Plan teaching time accordingly. If patient has poor math skills, consider recommending an oral hypoglycemic, if appropriate. 	<ul style="list-style-type: none"> Fill knowledge gaps by providing appropriate education. 	<ul style="list-style-type: none"> Provide user-friendly written material in patient's native language.
Psychosocial domain	Health insurance	Support system	Money management
	<ul style="list-style-type: none"> Can patient pay for her care and medications? 	<ul style="list-style-type: none"> Does patient have supportive friends or family members? 	<ul style="list-style-type: none"> Does patient have sufficient financial resources?
<i>Planning, intervention, and evaluation</i>	<ul style="list-style-type: none"> Refer patient without health insurance to a social worker. Inform her about the Affordable Care Act. 	<ul style="list-style-type: none"> Include patient's support system in teaching sessions. Refer her to community resources, as appropriate. 	<ul style="list-style-type: none"> Inform patient about Women, Infants, and Children (WIC) nutrition program, or refer her to a nutritionist.
Psychomotor domain	Diet	Exercise	Insulin injection and home blood-glucose monitoring
	<ul style="list-style-type: none"> How does patient's culture affect her food choices? Does her family understand the need for her to make dietary changes? 	<ul style="list-style-type: none"> Is patient's neighborhood safe for taking 30-minute daily walks? If not, what are alternatives, such as yoga at home? 	<ul style="list-style-type: none"> Is patient able to provide return demonstration of required skills?
<i>Planning, intervention, and evaluation</i>	<ul style="list-style-type: none"> Include patient's family in dietary planning. Modify dietary plan to include cultural or personal preferences. 	<ul style="list-style-type: none"> If patient's neighborhood isn't safe, recommend that she ask someone to walk with her. Refer her to local community groups, such as YMCA. 	<ul style="list-style-type: none"> If not, repeat instructions; know that patients have better recall if they perform return demonstration twice, with some time in between.
Affective domain	Fear of pain or needles	Fear for self and fetus	Coping strategies
	<ul style="list-style-type: none"> Is patient able to self-administer insulin? Is she able to test her blood-glucose level herself? 	<ul style="list-style-type: none"> Does patient understand that GDM can be life-threatening? Is she likely to comply with treatment plan? 	<ul style="list-style-type: none"> What are patient's coping mechanisms? Does she need referrals to help her cope?
<i>Planning, intervention, and evaluation</i>	<ul style="list-style-type: none"> Explore reasons for fear. If patient can't self-administer insulin, consider recommending oral hypoglycemic, if appropriate. 	<ul style="list-style-type: none"> Tell patient that with proper management, GDM complications can be minimized. Encourage patient to verbalize a management plan; evaluate it. 	<ul style="list-style-type: none"> Reassure patient that anger and denial are normal reactions. Encourage her to express feelings. Offer a referral to a psychologist, if appropriate.

treatment, make sure she understands the serious nature of GDM as a pregnancy complication. Emphasize the importance of preventing adverse outcomes of uncontrolled GDM. Inform

her that making necessary lifestyle changes and adhering to the treatment regimen can reduce or prevent complications and improve outcomes. Also tell her that after delivery, she's at high risk

for developing type 2 diabetes and should be screened regularly.

Communicate in clear, simple statements. For instance, "Walking for 30 minutes a day will help lower your

Many patients are confused and fearful about giving themselves insulin injections and testing

blood sugar” is better than “Moderate exercise is a good tool.” Based on your cognitive-domain assessment findings, meet the patient at her knowledge and educational level and language ability. To evaluate her understanding of the teaching you’ve presented, have her re-tour your explanation, or simply ask her questions.

During the teaching process, stress the importance of keeping tight glucose control during the rest of her pregnancy. Carefully evaluate for possible cognitive barriers to controlling blood glucose, and work with the patient to overcome them.

Limited time to provide education may be a major problem. Providing written material as well as verbal teaching may yield better results. During educational office visits, provide pamphlets, worksheets, books, or CDs on GDM. If possible, let the patient take them home with her.

If the patient’s literacy skills are limited, use pictures and other hands-on teaching tools, such as measuring cups and other ways to estimate serving size. During the teaching session, refer to the written material and familiarize the patient with its content.

Barrier: Nonadherence with treatment

Many patients with diabetes are confused and fearful about giving themselves insulin injections (which they may need up to five times daily) and testing their blood glucose frequently. To help them overcome this barrier, point out that GDM usually goes away after delivery.

Assess the patient’s ability to calculate her insulin dose and determine how many daily carbohydrates she can consume. Math skills can be a significant barrier for insulin adherence. Erroneous carbohydrate counting and incorrect insulin doses can lead to hypoglycemia. As necessary, refer the patient to a nutritionist, who can reinforce correct ways to count carbohydrates and estimate portion sizes.

To address the patient’s fears about needles and insulin self-administration, offer alternative ways to manage GDM

medically. As needed and appropriate, discuss with her primary healthcare provider whether she can take an oral hypoglycemic agent instead of insulin. Oral drugs don’t cross the placenta so they can be used safely by patients with GDM. For patients who can’t overcome their fear of needles, oral drugs can improve adherence with treatment. Glyburide, a sulfonylurea, is the most commonly prescribed oral hypoglycemic.

Provide information about each prescribed medication, including mechanism of action, dosage, schedule, and possible side effects. Also teach the patient about hypoglycemia, including signs and symptoms, how to treat it, and activities that might increase hypoglycemia risk.

Barrier: Financial constraints

For low-income women, limited finances are a major obstacle to both diabetes treatment adherence and regular prenatal care. Addressing the patient’s financial situation builds rapport with her and demonstrates you understand what she’s facing.

If your patient lacks health insurance, provide advice on getting coverage for the medical care she needs, such as through the Affordable Care Act (ACA). Low-income women typically can obtain health insurance from local, state, or federal health programs. (If your patient has difficulty filling out an online application, refer her to a social worker.) Although eligibility requirements vary, state or federal programs typically cover medically necessary aspects of prenatal care, labor and delivery, and up to 1 month of post-delivery care, along with required medical tests and medications. If the patient doesn’t qualify for free insurance because her income exceeds the poverty

level, she’s probably eligible for a health insurance subsidy through the ACA. Refer her to a social worker knowledgeable about the ACA.

As a nurse, your role is to clearly communicate to the patient the importance of preventing adverse outcomes of uncontrolled GDM. Identifying barriers to managing diabetes can improve pregnancy outcomes. ★

Selected references

- American Diabetes Association. Standards of medical care in diabetes—2014. *Diabetes Care*. 2014;37(suppl 1):S14-80. http://care.diabetesjournals.org/content/37/Supplement_1/S14.full.pdf+html. Accessed November 13, 2014.
- American Diabetes Association. What is gestational diabetes? (2013, June 7). Last edited June 20, 2014. www.diabetes.org/diabetes-basics/gestational/what-is-gestational-diabetes.html. Accessed November 13, 2014.
- Centers for Disease Control and Prevention. Pregnancy complications. Last reviewed August 13, 2014. www.cdc.gov/reproductivehealth/MaternalInfantHealth/PregComplications.htm. Accessed November 13, 2014.
- Hui AL, Sevenhuysen G, Harvey D, Salamon E. Stress and anxiety in women with gestational diabetes during dietary management. *Diabetes Educ*. 2014;40(5):668-77.
- Mukhopadhyay P, Bag TS, Kyal A, Saha DP, Khalid N. Oral hypoglycemic glibenclamide: can it be a substitute to insulin in the management of gestational diabetes mellitus? A comparative study. *J South Asian Fed Obstetr Gyn*. 2012;4(1):28-31.

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