

Experience of self-monitoring of blood glucose in pregnancy



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Lived Experience of Self-monitoring of Blood Glucose among Pregnant Women with Gestational Diabetes Mellitus

Abstract

This phenomenological research aimed at describing lived experience of self-monitoring of blood glucose among pregnant women with gestational diabetes mellitus. Thirty participants were approached and interviewed using a semi-structured interview guide. Qualitative data were analyzed following Colaizzi's method. The findings revealed three themes: Being worried about diabetes, trying to control it, and having patience for their child. Their experiences comprised two dimensions: 1) wondering about the impacts of diabetes on the child, and 2) concern about maternal health. Trying to control was composed of two dimensions: 1) learning to test blood glucose, and 2) being aware of what to eat. Being patient for their child was composed of two dimensions: 1) overcoming food desires, and 2) tolerating withstanding fingerprick pain. These findings can be used to guide nursing practice to encourage self-management to achieve good glycaemic control among pregnant women with gestational diabetes mellitus.

Key words: Self-monitoring of blood glucose, gestational diabetes mellitus

INTRODUCTION

Gestational diabetes mellitus (GDM) is defined as impaired glucose tolerance first identified during pregnancy. It is diagnosed using a 75g or 100 g oral glucose tolerance test according to clinical practice guidelines. The prevalence of gestational diabetes mellitus among pregnant women is increasing worldwide because of unhealthy eating and lack of exercise. Prepregnancy overweight and gestational weight gain are the strongest

predictors of GDM (Savona-Ventura *et al.*, 2013). Previous studies showed that 5.0-12.9% of pregnant women have GDM (Cho, 2013).

Pregnant women who have gestational diabetes mellitus are more likely to develop adverse pregnancy and child birth outcomes. Common maternal health complications are hypertensive disorder (3.0-50.0%), preterm labour (2.0-14%), spontaneous abortion (3.5-25.3%), polyhydramnios (5.0-28.0%), and postpartum hemorrhage (6.0-10.5%). Neonatal complications include macrosomic infant (12.0-17.0%), congenital malformations (6.5-20.0%), shoulder dystocia (9.5-23.3%), birth injury (4.5-13.3%), respiratory distress syndrome (1.5-21.4%), hypoglycemia (20.0-68.5%), hyperbilirubinemia (5.3-48.3%), and admission in neonatal care unit (15.0-20.6%) (Wang, 2013). These maternal and neonatal sequelae develop due to prolonged hyperglycemia. High levels of blood glucose can damage endothelial cells causing hypertensive disorder and its complications. Infants of pregnant women with GDM are also exposed to high maternal blood glucose levels (Webb, 2013).

It is suggested that controlling blood glucose within the recommended range (70-120 mg/dl) will decrease these complications. GDM in pregnant women can be treated by medical nutrition therapy, insulin injection, and self-monitoring of blood glucose (American Diabetes Association, 2013). Testing of capillary blood for glucose levels is recommended as a diabetes self-management strategy. Pregnant women with GDM need to be advised and taught to collect blood sample from their fingertip and use a glucometer to measure blood glucose levels. Little is known about their perception and lived experience of self-monitoring of blood glucose. Understanding their <https://assignbuster.com/experience-of-self-monitoring-of-blood-glucose-in-pregnancy/>

perception and meaning regarding diabetes management will be useful to promote self-care, improve glycaemic control, and decrease maternal and neonatal health complications.

METHODS

Objectives of the study

The objectives of this study were to describe perceptions and meaning of lived experience in self-monitoring of blood glucose and utilization of blood glucose levels for glycaemic control among pregnant women who have gestational diabetes mellitus.

Research design

This descriptive phenomenological study was designed to gain more understanding about lived experienced of pregnant women with gestational diabetes mellitus in self-monitoring of blood glucose. Specific qualitative research methods used in this study included bracketing the researcher perspectives, analyzing, intuiting, and describing perception and meaning of participants' lived experience (Creswell, 2013; Touhy *et al.* , 2013).

Study setting

This study was conducted in the antenatal care units, diabetes clinics, and obstetric wards of two government hospitals in southern Thailand which are the referral centers providing advanced management of pregnancy complicated with GDM.

Ethical consideration

The research project and data collection procedures were approved by Institutional Review Boards and ethics committees of the Faculty of Nursing and Faculty of Medicine, Prince of Songkla University, and selected hospitals in southern Thailand.

Participants

Potential participants were approached and asked for participation by staff nurses. Informed consent was obtained by the researcher teams. Thirty pregnant women diagnosed with GDM during 24-30 week gestation were recruited for the study.

Data collection

Data were collected using in-depth interviews following semi-structured interview guides. Digital audio recording was used. The participants were asked to be interviewed at the antenatal clinic, diabetes clinic, or obstetric ward. Two interviews were conducted. Each interview took 30-45 minutes. Data were collected until saturation. Interview data were transcribed to prepare for coding and analyzing.

Data analysis

Qualitative data were analyzed following Colaizzi's method and included seven steps: 1) Reading and re-reading descriptions, 2) extracting significant statements, 3) formulating the meaning of lived experiences in various contexts, 4) categorizing the meaning into clusters of themes, 5) describing

the phenomenon being studied, 6) validating the finding with participants, and 7) incorporating informants' view in the findings (Creswell, 2013).

FINDINGS

The mean age of participants was 32.5 (22-39 years). Seventeen women were Buddhists and thirteen women were Muslims. Their educational levels were high school (6/30), vocational level (14/30), and bachelor degree (10/30). Most of them were multiparous (22/30) and were employed (18/30). Eight women had previous GDM and experience of self-monitoring of blood glucose. The findings showed three emerged themes regarding perception and meaning of self-monitoring of blood glucose among pregnant women with GDM: being worried about diabetes, trying to control it, and having patience for their child.

Being worried about diabetes comprised two dimensions: wondering about the impact of diabetes on the child, and concern about maternal health. After being informed that they had GDM, having high levels of blood glucose, they first thought about how diabetes would affect their pregnancy, particularly the effect on their child. They believed that their infant would be harmed or malformed, or have diabetes. The participants' perceptions regarding GDM impact on child health were as follows.

After knowing that I had diabetes, I was concerned that my child would have diabetes so, I did not want my child have health problems. I am also afraid that my child might have some anomalies. [MT, aged 28 years, Buddhist]

Another dimension of being afraid of diabetes was concern over maternal health. Pregnant women having GDM were also concerned about complications during pregnancy such as abortion, preterm labour, and having diabetes after childbirth. They shared their understanding as these words.

I did not think about diabetes. My family had nobody complicated with diabetes. I was afraid of abortion or preterm birth. I also thought that I would have diabetes forever . [NS, 30 years, Muslim]

The second theme was “ trying to control it”. They gave two dimensions of trying to control diabetes that included: 1) learning to test blood glucose, and 2) being aware of what to eat.

Learning to test blood glucose . After being diagnosed with GDM, diabetes nurse educators advised them about how to collect blood from the finger and use the glucometer to test blood glucose levels. Pregnant women needed to learn these new skills of self-monitoring of blood sugar. They shared their experiences as follows.

The doctor referred me to the nurse to learn how to test my blood sugar. I did not have any knowledge and experience about this procedure. At first, I was afraid of fingertip pricking. After trying to practise it 2-3 times, I could do it. [AT, aged 26 years old, Buddhist]

Being aware of what to eat . Pregnant women with GDM paid more attention to take some healthy foods as recommended by doctors, nurses and dietitians. They learned to choose food type, portion size, and appropriate

time to have breakfast, lunch, dinner, and snacks between meals. They provided additional data as follows.

The doctor told me that I needed to learn how to eat to lower my blood sugar. The nurse suggested that I eat healthy food for mother and my child, and advised me to see a dietitian. She taught me to choose food such as rice, noodle, meat, chicken, fish, vegetables and fruits. I usually ate more rice, sweetened desserts and fruits. I would try to limit my food order to control my blood sugar. [AS, age 34 years, Buddhist]

The third theme was “having patience for their child”. Pregnant women with GDM expressed the meaning of their experiences of self-monitoring of blood glucose in two dimensions: 1) overcoming food desires, and tolerating the fingerprick pain.

The first meaning of having patience for the child was “overcoming food desires”. The women shared their experience of how they faced controlling their blood glucose. They had a struggle related to hunger due to cutting down on some favorite foods such as sweetened drinks, desserts and fruits. Sometimes they could not tolerate their food desire, they then decided to eat what they wanted. This response supports the idea.

I knew that I should not eat some foods such as sweetened drink, but I desired to have it. When I see someone drink it, I cannot tolerate my hunger. Then I drink it to fulfill my desire. After that I put my effort to avoid it or try to live alone sometime. [PA, aged 28 years, Buddhist]

The second dimension of having patience for their child was “tolerating the fingerprick pain”. After being diagnosed with GDM, they were advised to test

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their blood glucose by pricking the fingertip to collect capillary blood to measure blood glucose levels with a glucometer for 8 to 12 weeks. They experienced mild intensity of pain that they had to cope with in order to achieve good glycaemic control. The women shared their tolerance with fingertip pain as follows.

The nurse taught me how to test my blood sugar. I had to prick my fingertip with a lancet 2-3 times per day. I felt some pain for 10 weeks. I had to cope and tolerate it. For my child, I could do everything that I could. I hoped that my child would not have sickne... my diabetes . [NY, 32 years old, Buddhist]

DISCUSSION

After being diagnosed with GDM, pregnant Thai women were worried about the impact of diabetes on their child and their own health. They were afraid that their child might have diabetes or other health problems, or even die. A previous study also found that women with GDM experienced fear about the wellbeing of their babies and themselves (Stankiewicz *et al.* , 2014). For maternal health, most of them were worried about becoming diabetic later in life. The research evidence revealed that women who had a history of GDM were at risk to develop prediabetes, diabetes, or metabolic syndrome. Among women with GDM, 5-14% were subsequently diagnosed with type 2 diabetes mellitus during the postpartum period and 7-29% had impaired glucose tolerance (Bihan *et al.* , 2014).

Pregnant women with GDM needed to learn to measure their blood glucose levels by self-monitoring technique. They expressed their experience as “

learning to test blood glucose” because it was a new activity with which they had no skill and were not familiar. After being advised by diabetes nurse educators, they could collect a blood sample from the fingertip and test it with the glucometer. This result was supported the finding that women who have GDM can manage to control their blood glucose after they cope with emotional strain (Hui *et al.* , 2014; Stankiewicz *et al.* , 2014).

In addition, the women had learned to control their blood glucose by “ being aware of what to eat”. After receiving knowledge about diabetes medical nutrition therapy from a dietitian and nurse educator, they shared their understanding of prior dietary pattern that needed to be changed, such as reducing the consumption of sweetened drink and desserts, or fruit with high glycemic index. They had learned about the kind of foods for diabetes and portion sizes. They perceived that awareness of dietary behaviors was necessary to control their blood glucose levels. A previous study also reported that pregnant women with GDM changed their health behavior after being informed of their health problems and the way to improve their health (Bandyopadhyay *et al.* , 2011; Hjelm *et al.* , 2012).

Lastly, pregnant women with GDM shared their experiences that they were “ patient for their child”. They had to overcome their food desires and cope with pain from fingertip pricking during blood testing. Normally, they had their favorite foods such as Thai fruits and desserts. After becoming pregnant with GDM, they had to adapt their food habits in order to achieve good glycemic control. Sometimes, they would like to eat something that they wanted but they were concerned about its impact on their child.

Eventually, they decided not to eat that food or took only a small amount.
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However, some women could not resign their food desire and chose to take food to eat it for their satisfaction. After they fulfilled their need, they tried to practise as recommended. This was her voice “ *In the afternoon, I felt thirsty. I tried to drink some water but it did not satisfy me. I continued to seek some sweetened drink that I like. I could not stop my desire, then I decided to take it. After that my blood sugar was as high as 215 mg/dl. I have learned what food raises my blood sugar. So I tried to face my feeling and overcome it for my child wellbeing and my health too.*”

Another experience of having patience for the child was “ tolerating fingerprick pain”. Pregnant women with GDM were advised to self-monitor their blood glucose 2 to 3 times a day, before or after meals, for 8 to 12 weeks until they gave birth. They had to cope with mild intensity of pain. They expressed their responses that they could do it in order to prevent health problems of their child and themselves. This supports the finding that perception that GDM affects behaviors related to maternal and child health and influences the adoption of a healthy lifestyle (Poth & Carolan, 2013).

Limitations of the study

Lived experienced of self-monitoring of blood glucose in this study was obtained from the perspectives among pregnant women with gestational diabetes. It might not fit with the meaning and perception of individuals who have experience the management of type 1 or type 2 diabetes over a longer time.

Conclusions

Pregnant women being diagnosed with gestational diabetes mellitus had lived experiences characterized by two main themes: being afraid of the effect of high blood glucose on their own health and the impacts on their child, and trying to control blood sugar by being aware of what to eat, overcoming the food desires, responding to satiety, and tolerating skin pricking. Understanding of the women's perception is useful to promote diabetes self-management.