EXPERIENCES OF PREGNANT WOMEN WITH GESTATIONAL DIABETES MELLITUS IN PHETCHABURI PROVINCE

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Abstract

Aims: This qualitative research aims to describe experiences of pregnant women with gestational diabetes mellitus (GDM) in Phetchaburi province focused on their perceptions and lifestyles.

Methods: The hermeneutic phenomenological is used as research methodology framework. The semi-structured in-depth interviews was conducted for acquiring experiences of pregnant women with GDM. The sample is chosen by means of purposive sampling and the acquired clarity and saturation of data to generate the sample of 20. All pregnant women’ rights were protected. Data collections are done during October-December 2013. The content analysis is conducted after each in-depth interview.

Results: The pregnant women, aged 19-34 (50%) and 35-40 (45%), the incidents of GDM comprised of A1 and A2. The GDM A1 was found among 70% of pregnant women in this study. The treatments given to GDM A1 were dietary control and exercise. Meanwhile, 30% of those suffering from GDM A2 are treated by means of dietary control, exercise and insulin injection. Content analysis focused on their perceptions with GDM revealed 2 themes: 1) Feelings of fear, concern, stress because of mental unpreparedness to deal with GDM related to insulin injection, self-blood sampling, fright of possible threats towards their baby and themselves, and 2) Awareness of their proneness to GDM because some of their family members are diabetes patients. The content analysis concerning lifestyles of pregnant women with GDM revealed 5 issues: 1) Dietary patterns among those who able and unable to achieve blood sugar control were different; 2) the family support benefits effort on blood sugar control of pregnant women with GDM; 3) the adherence to religion, faith, and belief for their unborn baby; 4) Tolerant to insulin injection for their baby; and 5) failure of exercise to improve the metabolism because poor exercise guidance and correct knowledge.

Conclusions: The research result present the broader perspectives for health personnel to provide care for pregnant women with GDM and family for promoting self-care ability and engagement of family. The improvement of practical exercise guidance and the multidisciplinary care team comprising physicians, nurses, nutritionists and physical therapists to pregnant woman should also be focused.

Keywords: experiences, pregnant women, Gestational Diabetes Mellitus, qualitative research, content analysis

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Background and Significance of the Study

Current worldwide incident of gestational diabetes mellitus (GDM) has rose to 15% of all pregnant women (International Diabetes Federation, 2015). According to the statistics of Ministry of Public Health, the incident of gestational diabetes mellitus in Thailand is 9% (Diabetes Association of Thailand, 2015). Incidents of GDM at Phrachomklao Hospital was 19 of 149 pregnant women or 12.75% (Prachomklao Hospital, 2015). GDM is an important threat to mothers and babies leading to the higher rates of disability, perinatal mortality, obstetrical palsy due to macrosomia and low blood sugar condition (Cunningham, 2014). Furthermore, the recurrent risk of GDM among women with previous GDM in the second pregnancy was 35%-50%, and their proneness to type 2 diabetes 10 years after having GDM is 40%-60% (Cillin et al., 2013). Also, the risk of future diabetes development increases by 7 folds (Jovanovic, 2013). According to the American Diabetes Association (ADA), the essential guidelines for GDM pregnant women’s self-care is the lifestyle management within the context of life and disease progress, namely, medical nutrition therapy, exercise, physical activity and management of pregnant women’s weight based on their pre-gestational weight (American Diabetes Association, 2016). All these are pursued after being diagnosed with GDM and prior to the commencement of treatment in an effort to normalize their blood sugar level. The blood sugar control to the doctor-recommended level is different for each pregnant woman or so-called the case management, which aims at the enhancement of GDM pregnant women’s self-care competency. The American College of Obstetricians and Gynecologists has suggested GDM pregnant women to control their food intake through the recommended calorie calculation based on the ideal body weight. With regard to glycemic control, if the blood sugar level can successfully be controlled, the complications and incident of macrosomia may be reduced (Crowther et al., 2005). The insulin use can in fact reduce blood sugar, while its application together with dietary control will decrease complications and incident of macrosomia in comparison to the pursuit of dietary control alone (American Diabetes Association, 2014). Moreover, the exercise improves both insulin function and glycogen synthesis resulting in blood sugar reduction (Canadian Diabetes Association, 2015). This conforms to the research of Piyanun Limruangrong et al. (2011) who have examined the relationship among certain factors, exercise and blood sugar level in GDM pregnant women 2 hours after eating. It is found that the nurses should arrange activities for blood sugar reduction by encouraging GDM pregnant women to take exercise and enhancing their knowledge to increase the confidence in exercise.

It can be argued that there are many means towards the efficient care provision for reducing complications in GDM pregnant women. The pregnant women are needed to be aware of and engage in self-care so that they are able to change their behaviors and take care of themselves when they have GMD during their pregnancy. The authors are interested in conducting qualitative research to examine GMD pregnant woman’s experiences in Phetchaburi province. The
findings of this study will serve as the basic data enabling health personnel to recognize and understand limitations, contexts and lifestyles of GMD pregnant women. Such fundamental data will also become a guideline for developing the care provision system for GMD pregnant women on the case-by-case basis.

**Objectives**

1. To describe the thoughts and feelings of GDM pregnant women in Phetchaburi province
2. To the actions or lifestyles of GDM pregnant women in Phetchaburi province

**Research Methodology**

This is the qualitative research with the descriptive approach. The author has conducted the in-depth interview using semi-structure interview form for acquiring data on GMD pregnant women's experiences. The purposive sampling technique is used, while the characteristics of sample are according to research objectives. The sample size relies on the clarity and saturation of acquired data (Morse, 1995). This results in a sample of 20 persons. The relevant actions and data collections are done during October-December 2013.

**Conceptual Framework**

This qualitative research examines the social facts using the inductive method under hermeneutic phenomenology (Allen, 1995) as the research conceptual framework in order to describe and understand GMD pregnant women's experiences. It thus provides the details related to the definitions, feelings, lifestyles, learning on how to deal with complications of GMD and actual needs of care and assistance according to GMD pregnant women's real experiences. Also, the concepts and theories on GMD and its impacts on pregnant women themselves and their unborn baby are explored resulting in the deep understanding of patients' experiences, the accurate and comprehensive data collection and correct research planning.

**Verification of Tool Quality**

In this research, the semi-structured interview form is used in collecting data from GMD pregnant women in light of their thoughts, feelings, lifestyles, learning on how to deal with GMD and needs of care and assistance. In this regard, the authors have developed such tool according to the following processes:

1. The interview form with comprehensive contents has been developed in response to research objectives. Its content validity has been verified by 3 senior experts in Obstetrics to request for their opinions, suggestions and possible improvement.
2. The improved edition of developed interview has been applied in the pilot study conducted with 3 key informants. The tape records are transcribed to improve the clarity of questions so that the developed tool becomes more accurate and correct.

**Protection of the Human Subjects’ Rights**

The author has made self-introduction and clarified the research purposes to the samples who are also informed that this study requires their willingness and consent to participate. The collected data are kept confidentially and used executively for this study. The data collection begins after the sample’s grant of consent.

**Data Analysis**

The record form has been analyzed by means of content analysis along with the analysis of in-depth interviews. The research findings can be summarized into the following key issues:

**Research Results**

There are 2 issues concerning the feelings after being diagnosed with Gestational Diabetes Mellitus (GDM)

1) Fear, anxiousness and stress due to the physical and mental unpreparedness for GDM: According to 20 key informants, they are fearful and shock after being informed that they have GDM due to the concern for possible impacts on their unborn baby and on themselves. Some of them worry about self-practice or are stressful, sad, unanticipated and mentally unprepared for GDM. Some key informants have argued as follows:

“I cried when the doctor told me that I had GDM. I also said to my husband that I was afraid that I would have a serious condition.”

Secundigravida, Aged 30 Years Old

“I was anxious, stressful and fearful. I feel sorry for my unborn baby because the doctor told me about possible threats to my baby.”

Primigravida, Aged 33 Years Old

2) They are aware of GDM proneness since some of their family members also have diabetes. Some key informants are mentally prepared since their relatives also have diabetes. The weight previous baby is 4,000 grams so they are aware that they may likely have GDM. Some claims of key informants are as follows:

“I cried when I first know about GDM. In fact, I was mentally prepared for it as my father also had diabetes. However, it was really hard to accept it when the doctor told me about that.”
Secundigravida, Aged 35 Years Old

“My grandmother had diabetes and the nurse told me about GDM proneness. The fingertip blood sample confirmed it. Although I was mentally prepared, I was still stressful and anxious.”

Primigravida, Aged 38 Years Old

The Actions or Lifestyles of GDM Pregnant Women concern 5 following main issue:

1) GDM primigravida who can achieve blood sugar control has different food intake pattern in comparison to the one who fails to do so.

The study reveals that 7 key informants can control blood sugar. The characteristic and portion of food according to the examination of data on food intake behavior for blood sugar control include the consumption of vegetables and fruits, Kaeng Liang (Thai spicy assorted vegetable soup with prawns), Kaeng Pa (a kind of spicy curry) and boiled/grilled/roasted foods instead of the fried ones. They strictly follow the nutritionist’s advices and reduce or stop eating certain foods such as sweetened drinks, soft drinks, sweets and coconut milk. They also eat to satisfy the hunger or eat in a small portion. Some of their statements are as follows.

“Each meal, I had 2.5 ladles of rice with vegetable leafs and 2-3 pieces of meats and of fruits. I also drank milk. I avoided eating oily, fried or too-sweet food. I strictly followed the advices because I was afraid of the rise of blood sugar and the harm to my baby. I ate a small portion and did not eat sugary desserts.”

Secundigravida, Aged 40 Years Old

“I had 2.5 ladles of rice per meal. I ate boiled eggs, grilled fish, roasted chicken, vegetables and fruits such as guava, orange and green apples. I also avoided eating fried and too-sweet foods. I could not eat what I wanted anymore due to my fear of the rise of blood sugar. I was afraid that my baby would be harmed. I ate a smaller portion and tried to control it. I ate orange or guava when I was hungry.”

Secundigravida, Aged 35 Years Old

“I stopped eating rice and ate vermicelli instead. In some meals, I ate brown rice, Thai-style suki soup, spicy vermicelli salad and Kao Lao (a kind of Thai clear soup). I stopped eating all kinds of desserts and soft drinks. It was very miserable.”

Primigravida, Aged 19 Years Old

The pregnant women who fail to achieve blood sugar control have food intake patterns in a different manner to those who can do so. Some of their arguments are below.

“Some days I secretly drank cocoa smoothie or iced chocolate (served in plastic bag), which were generally available in traditional coffee shops or hospital’s shops. Having cold and sugary drinks was so refreshing.”
Secundigravida, Aged 40 Years Old

“I tried to control. I loved drinking 2-3 bottles of Pepsi (around 10 Baht each) daily. After having GDM, I drank one bottle a day. I enjoyed oily and fried foods. Our family really liked this kind of food. We also had heavy dinner. I stopped eating sweets and sometimes did not eat rice before fingertip blood sampling.”

Secundigravida, Aged 35 Years Old

“I worked at a sweet factory producing Thong Yip (pinched golden egg yolks), Thong Yod (golden egg yolk drops in syrup), Foi Thong (golden egg yolk threads), Mor Kaeng (egg custards) and Thai coconut jellies. I was addicted to sweets. I ate a large portion of rice and enjoyed cakes. I drank sweet cocoa drink. I drank skim milk and ate orange and guava in some days.”

Primigravida, Aged 19 Years Old

2) The family members’ care provision benefits the primigravida’s effort to control blood sugar. The interviews with 20 key informants reveal that only seven of them achieve blood sugar control. According to the examination of behavior-related data, the primigravida’s husband and family members have regulated and reminded of food intake pattern for blood sugar reduction and of punctual fingertip blood sampling and insulin injection. This results in her strengthened moral support and effort to do self-care according to the health team’s advices. The statements of some key informants are as follows:

“My husband regularly reminded me of eating low-sugar and low-carb foods to deal with high blood sugar. I felt good and I wanted to do so for my baby. I was quite old now.”

Secundigravida, Aged 40 Years Old

“My mom told me to avoid eating certain foods. If I could not do so, I would eat only a small portion, just to taste it.”

Secundigravida, Aged 35 Years Old

“My husband took fingertip blood sample and injected insulin for me. He also monitored my eating habit according to the advices of nutritionists and nurses. I had a will power and wished to fight together for our baby.”

Primigravida, Aged 39 Years Old

3) They adhere to the religion, faith and belief for their unborn baby.
Regarding the interviews with 20 key informants, all of them pray or beg the blessings from sacred items, which they pay respect to, for the protection of unborn baby. Some of them have claimed as follows:

“I visited temple right away to make merits, to offer foods to monks and to beg for blessings that my baby would be healthy, strong and free from any harms.”

Secundigravida, Aged 38 Years Old

“I prayed every night wishing that my baby would be safe.”

Primigravida, Aged 28 Years Old

“I pray and extend my loving kindness wishing for my baby’s safety. I felt better and relieved.”

Secundigravida, Aged 40 Years Old

4) They are tolerant to insulin injection for their babies.

The study of 9 key informants who need insulin injection after being diagnosed with GDM2 are conducted. They need to take fingertip blood sample before the injection so that they can jot down in their blood sugar reporting form. Due to the pain around the fingertip and the injected area, they believe that fingertip blood sampling once a day is sufficient, while some of them are afraid of injection. However, they must be tolerant for the health of unborn babies. Some of their statements are as follows:

“Blood sampling and insulin injection aimed at blood sugar reduction. I knew that they were really painful, but I had to be tolerant for my baby.”

Secundigravida, Aged 40 Years Old

“I was very afraid of blood sampling and insulin injection syringes but I had to be tolerant for my baby.”

Primigravida, Aged 33 Years Old

“I would be good if no insulin injection was required for blood sugar control. I would not be painful. Sometimes I was really suffering.”

Tertigravida, Aged 36 Years Old

5) GDM pregnant women need the confidence in doing exercise.

According to the study, the key informants are unsure whether the exercise will be effective in reducing blood sugar. They are unconfident in the real application or benefit of exercise. Some of their arguments are as follows:
“Generally I was told to do exercise by walking for half an hour. I was unsure. Sometimes I was tired and had palpitation, so I did not do any exercise.”

Primigravida, Aged 27 Years Old

“The doctor said about the exercise but did not go into detail. I was unsure. According to the internet sources, GDM pregnant women should avoid doing exercise.”

Primigravida, Aged 19 Years Old

“I wanted the detailed explanations on how I could do exercise. I was interested in it if it worked.”

Tertigravida, Aged 36 Years Old

Discussions

Objective 1: the feelings after being informed about GDM, GDM pregnant women are very fearful, shock and anxious for possible impacts on their unborn baby and on themselves. Some of them are worried about the ailment and self-care as well as stressful and sad. They are unanticipated and mentally unprepared for GDM. However, some GDM pregnant women are aware of their proneness and mentally prepared because their family members or relatives also have diabetes. The previous baby’s weight is over 4,000 grams so they believe that they may likely have GDM. This conforms to the study of Anchalee Chittraphirom et al. (2014) that explores the awareness of pregnancy-related risks, sense of uncertainty and stress of GDM pregnant women. A high level of overall mean score of stress is found.

Objective 2: Actions or Lifestyles of GDM Pregnant Women, it is found that GDM primigravida who can achieve blood sugar control has different food intake pattern in comparison to the one who fails to do so. This fact agrees with the theory suggesting that the regular control of food intake requires calorie restriction and food portion control. They have to take sufficient nutrients according to the nutrition principle in spite of insulin injection (Cunningham et al, 2014). With regard to the insulin injection, it causes the painful feeling at the fingertip and the injected area. GDM pregnant women thus believe that fingertip blood sampling once a day is sufficient, while some of them are afraid of injection. However, they have to be tolerant for the health of unborn babies. The use of insulin not only takes into account the blood sugar level but also each trimester of pregnancy. During the first trimester, the blood sugar level may be unstable depend on many factors such as hormones from placenta and vomit-related conditions resulting in the lower need of insulin by 10-15% (Gillbert, 2011). For the second semester, the need of insulin becomes higher since the pregnant women’s body uses fat as the energy while reserving glucose for fetus growth. In the third semester (approximately 35th week or more), the insulin need decreases again. Also, it is needed to consider the insulin type as well as frequency and
amount of injection (Cunningham et al., 2014). The family members’ care provision benefits GDM primigravida’s effort to control blood sugar. For example, her husband and relatives regulate and remind of food intake for blood sugar reduction and of punctual blood sampling and insulin injection. All these result in her strengthened moral support and effort to do self-care according to the advices given by the health team. This is line with the research of Pyanan Limruangrong et al. (2011) indicating that the self-monitoring program allows the sample to efficiently do the following activities: food intake control, exercise and blood sugar check 2 hours after having foods. The study also reveals that GDM pregnant women need the confidence in doing exercise because they are unsure about its methods, which they can follow in a manner that benefits the blood sugar reduction. They cannot do exercise in the real setting and witness its advantages. In fact, the exercise enables the muscles to use more glucose as the energy leading to more sensitivity and less resistance of insulin. This eventually contributes to the reduced blood sugar level. The exercise should be based on FITTE principle (Kavita et al., 2013; Bain E., et al., 2015). Lastly, after being informed about GDM, GDM pregnant women tend to prey and beg for blessing from sacred items according to their individual respect, belief, faith and spirit for the safety of unborn baby.

Conclusion

The research result will change the perspectives of health care providers in paying attention to GDM pregnant women’s self-care and in teaching their family and relatives how to engage in care provision. The provision of practical exercise guidance to pregnant woman should also be focused. Additionally, the care of GDM pregnant women should adopt the multidisciplinary approach comprising the physicians, nurses, nutritionists and physical therapists.

Recommendations

1. Health service worker be aware to conduct with the GDM patient about individual exercise.

2. The future research will developing both nursing care and management model in responding to the GDM women depend on their life style.

References


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