

Mother's obstacles in managing gestational diabetes mellitus: a qualitative study

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MOTHER'S OBSTACLES IN MANAGING *GESTATIONAL DIABETES MELLITUS*: A QUALITATIVE STUDY

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Abstract

Background: the cases on *diabetes melitus* rise throughout a year, as well as diabetes melitus during pregnancy. Diabetes melitus during pregnancy has serious impact on mother and baby, if it is not handled optimally. *Gestational diabetes mellitus* (GDM) prevalence reaches 9,3-25,5% all over the world. The numbers of diabetes mellitus patients during pregnancy in Indonesia approximately 1,9-3,6%. This research purposed to find out the mother's obstacles in maintaining GDM.

Methods: This research is a qualitative study with phenomenology approach. It was conducted from October 2018 to June 2019. Interviews method was performed to collect the data and supported with documentation study over 8 mothers who have history of *gestational diabetes mellitus*. Thematic analysis is used for data analysis.

Results: The qualitative analysis result reveals two themes, which are reaction towards GDM diagnose and GDM management problems. GDM management problem covers the difficulties during pregnancy and GDM counseling. The result of the research indicated that mothers have difficulties in controlling eating pattern and adapt with GDM, as well as the limitation of information and communication that received by mother regarding to pregnancy with DM.

Conclusion: This research reveals mother's experience on obstacles in obtaining GDM services. The results could be useful guide to develop comprehensive self-care service, by focusing mother's self-management and the role of health-workers. The urge of more effective GDM counselling is required to ensure clear understanding about principles of self-management on pregnancy mother, to assist mother in enhancing adaptation and ability in handling GDM.

Keywords: diabetes melitus, obstacles, pregnancy, pregnant mother, qualitative

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INTRODUCTION

The cases in diabetes melitus raise throughout a year, including diabetes melitus during pregnancy. Diabetes melitus on pregnancy has serious impact on mother and baby if it is not handled optimally. GDM prevalence is estimated as 9,3-25,5% di seluruh dunia (Xu et al., 2017). According to WHO, around 230 million people are suffered from diabetes, and it could be predicted that there are 135 million mothers in pregnancy suffer from diabetes melitus or equal to 3-5% per year (Infodatin, 2014). In Indonesia, the numbers of diabetes melitus cases during pregnancy reach 1,9-3,6% (Sugianto, 2016).

Diabetes melitus on pregnancy, or widely known as Gestational diabetes melitus (GDM) is glucose intolerance that triggers higher level of glucose identified firstly during pregnancy and returned to normal after labouring (Parsons et al., 2018). Several factors have been related with the risk escalation on GDM development. It includes aging mother, family history on diabetes melitus, previous history by having macrosomic baby, history of GDM, obesity, overweight during pregnancy, particularly for obesity person (Alfadhli et al., 2015). Selain itu multigravida, kurangnya Besides, the lack of information and consideration about GDM also related with the high GDM prevalence (Alharthi et al., 2018).

Gestational diabetes melitus has been related to many short-term and long-term health issues for mother and

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the baby. Early diagnose for GDM is crucial to reduce the morbidity of mother and baby and enable the next step to prevent or postpone diabetes type 2. Main way to cure GDM is lifestyle changing that involves diet, sport and checking the glucose level in blood.

One of the efforts from health-workers to prevent or screening diabetes melitus on the pregnancy is to utilize government program, which is mother-child health program (KIA). KIA includes integrated examination of antenatal care (ANC). ANC examination is expected to provide many information and health counseling to mothers, with expectation of early screening to complicated disease and comorbidities on pregnant women (Riskasdas, 2013). Types of integrated ANC service include general check-up, body's temperature, blood pressure, body weight, LILA, TFU, fetal presentation, DJJ, Hb, blood type, protein level in urine, blood sugar/reduction, malaria blood, BTA, syphilis blood, HIV serology and USG (Permenkes, 2014).

Initial screening that could be done on DM case is blood sugar observation. All pregnant women must conduct the examination of blood sugar, the control of body mass index (BMI), life-style alteration and diet suggestion during pregnancy. Besides, test of oral glucose tolerance/OGTT is required. It is recommended to conduct GDM screening within 24-28 pregnancy. Particularly for women with high risk, screening must be performed on the first prenatal visit. International recommendation for GDM management also emphasizes the importance of follow up the postpartum nurturing, including OGTT from 6 to 12 postpartum weeks and further supports for life-style changes (ADA, 2015).

The initial study found that Puskesmas Umbulharjo I, Kraton and Wirobrajan are Puskesmas which have 8 cases of labouring mother with GDM history. Based on above fact, the researcher interested to carry out a research about "Mother's Obstacles in managing *Gestational Diabetes Melitus* in Yogyakarta".

MATERIAL AND METHODS

Methodology design that used in qualitative research is phenomenology approach. 8 mothers with GDM history participate as samples. Purposive sampling with criterion sampling strategy applies as sampling technique. The research was conducted from October 2018 to June 2019. It was performed in working area of di Puskesmas Umbulharjo I, Puskesmas Kraton and Puskesmas Wirobrajan.

Data collecting instrument employed semi-structured interview guidance, audio record and writing tools. It was focused on one variable, which was mother's obstacles in managing GDM. Thematic analysis was employed as data analysis.

RESULTS

Respondents' characteristics

Participants were 8 mothers with gestational diabetes melitus (GDM) history. Characteristics of main participants are presented in Table 1, as follows:

Table 1. Characteristics of Main Participants

Code	Age	Education	Occupation	Child's Age
PU1	26 yrs	SMA	IRT	2,5 months
PU2	35 yrs	S1	IRT	7 months
PU3	38 yrs	SMA	KS	9 months
PU4	39 yrs	SMP	IRT	10 months
PU5	32 yrs	DIII	KS	2 months
PU6	28 yrs	SMA	KS	11 months
PU7	30 yrs	S1	IRT	12 months
PU8	25 yrs	SMA	IRT	11 months

Source: Primary Data 2019

Description: PU = Partisipan Utama (Main Participant), KS = Private Employee, IRT = Housewife

The Result of Data Analysis

The data were analysed by using thematic analysis by identifying patterned themes that existed in a phenomenon. The result of data analysis generated several themes as presented in Table 2:

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Table 2. The Result of Thematic Analysis

Coding Label	Sub Theme	Theme
A pregnant mother feel suprised when first diagnosed with DM	Experiencing emotional reaction	Reaction towards GDM diagnose
Mother feels worried and afraid for the health of the baby		
Mother considers that DM is harmful disease	Tries to adapt with GDM	
Mother feels worried with her own and baby's health		
Mother tries to adapt with GDM		
The pregnancy is the expected one		
Mother tries to accept the condition of pregnancy with DM	Difficulties during pregnancy	The obstacles of GDM
Mother feels easily fatigue, enervate, easily sick, asphyxiate during pregnancy with GDM		
Mother still runs unhealthy eating pattern	GDM Counseling	
Mother is difficult to adapt with GDM		
The lack of GDM counselling during pregnancy yang diterima ibu selama hamil		
Limited information about GDM		

1) Reaction towards GDM diagnose

Reaction theme towards GDM diagnose includes two sub-themes, which are emotional reaction and adaptation with GDM.

a) Experiencing Emotional Reaction

This emotional reaction was revealed with feeling worried on self health as well the fetus. Several participants feel shocked and unprepared when first notified that their pregnancy come with DM. The excerpts that indicate the response are described as follows:

"it's kinda surprises when first notified, then how about the baby, will it influence the baby as well, I feel afraid, afraid that something will happen to my baby"

"I feel shocked, especially when I heard that it is dangerous for pregnant mother, high risk..I feel stressed, overthinking, some say that glucose has dangerous impact to baby, heart failure could possibly happen, other disorders and other, some say that the baby will be bigger..that makes me worried" P5

Besides, there is specific concern on self condition as well as baby. They are afraid on threat that could be experienced by their baby in terms of DM during pregnancy. It is indicated by following responses sentences:

"I feel worried, as the doctor said that the size of the baby will be bigger, I am afraid for its impact to the fetus" P1

"It is dangerous for the fetus, it is passed down to the baby, baby could has disabilities, worried for sure, worried for the impact to the baby and my own health condition" P6

b) Trying to adapt with GDM

Mother tries to accept the existence of DM sincerely and starts to adapt by controlling the eating pattern. It was indicated by following excerpts:

"Definitely feel worried, but there is nothing I can do, just do it" P1

" Bismillah, hope everything gonna be okay, Just let it flow, we already had the diagnose, there is nothing we can do then. There is no use to be angry, to who? Just keep the healthy eating habit" P2

2) Obstacles in GDM management

This theme covers two sub-themes: The difficulties during pregnancy and GDM counseling

a) Difficulties during pregnancy

There are several occurrences during GDM, the difficulties in controlling eating pattern as well as to adapt with GDM. These difficulties are presented on below excerpts:

"Easily feel tired, do the dishes for a while already caused a stiff muscles, feel lazy, since little exercises are suggested to help normal labour, I consider it is useless for my operation procedure, so lazy it is, hahaha, well my body feels heavier than usual, do not want to do anything, I feel sleepy all the time" P4

"My recent pregnancy is more challenging, I feel terrible with my health, feel tired, having endless cough and cold, uncomfortable stomach, tight stomach. I am stronger (on the previous pregnancy), maybe it is related to high blood pressure" P5

Several participants revealed difficulties in managing eating pattern. They do not get used with suggested eating pattern as advised by health workers. As stated by following excerpts:

"The eating prohibitions are closely related to sweet drinks and rice. Rice could be replaced with potato, but typically the Indonesian feel full after eating rice. So, rice it is" P1

"It is really difficult on the implementation, I eat whatever it serves, if someone ask me to reduce the portion, I still feel hungry. So, if I feel hungry, I will eat haha..If I want to, I will insist" P4

Besides, there are several participants revealed the difficulties in adapting with GDM, among others:

"It is really difficult (in adapting with DM), difficult to maintain the eating habit, to keep sanitized, its so difficult. Usually I could eat everyday with any types of food. Right now, it should be controlled" P7

b) GDM Counseling

The lack of GDM counseling is described on below excerpts:

"The description about DM is less than I expected, both from the health workers as well as the doctors, that's all I got. I feel disappointed for the first time, I want KIE actually, what should we do in steps. But in real, we only saw the result, and injection that's all, no further explanation" P5

"I expect for clearer direction and explanation, details about insulin and others. Due to lack of explanation, I prefer drugs than injection. If they provide stronger advice, I think I will take insulin injection" P4

Besides, several participants stated that the information on GDM is still limited. Some mothers considered the explanation about GDM is not in detail. One mother, on the contrary, presumed that the explanation triggered more worries, than a relieve. Below are the excerpts:

"Emm, it was more to brief explanation about DM, it is better to explain specifically its relationship with pregnancy in detail, so we understand more" P1

"We could just find the information by google, what is DM, the risks, and things that we should do. But sometimes, we don't satisfy. Direct information from the doctors will be more valid.

DISCUSSION

The researchers have identified two main themes that describe mother's obstacles in managing *gestational diabetes mellitus*, as follows:

a. Reaction towards GDM diagnose

Reactions on GDM diagnose describe individual's faith about their reluctancy on DM risks, that motivate them to start healthy living. The bigger risks they face, more possibilities for an individual to be involved in healthy life. If a person believes that he is in the threat of a disease, he tends to start efforts in overcoming it. On the contrary, if a person believe he is under no threat of a disease, hence unhealthy living tends to occur (Rosenstock, 1988).

A person that diagnosed with DM, will feel more threatened or feel more vulnerable, where he/she should be able to control the result of blood test result. (monitoring routine blood sugar level and the result of blood sugar test in a stable condition). A person will start the medical action or prevention of a disease once he/she is in a vulnerable condition towards that disease (Rahma dan Hastuti, 2017).

The result of this research showed that after being informed about the diagnose of GDM, a pregnant mother will experience the emotional reaction (shock, afraid and anxious). They feel afraid and worry on the risks that could affect the baby's health and themselves. They also revealed the causes for having the DM on the pregnancy, which are poor eating habit and genetic from the inheritors.

This is supported by the research conducted by Ge et al. (2017) stated that the mothers described emotional reactions when being told about the GDM diagnose. They experienced shock, hesitation, weird feelings denial, fright, and anxiety. Some of them cannot deal with the GDM diagnose. They were afraid and worried about the negative effects of GDM that might influence their health. They also believed that the GDM was caused by unhealthy eating pattern, obesity and mother's old age.

Carolan (2013) also stated that the mothers experienced shock after being diagnosed by GDM. They felt disappointed and mostly felt unready to face the diagnose. Some said that even they considered the GDM diagnose as a shocking information, still they should adapt with the condition, they could see the relationship between risk factors with the GDM diagnose. Most of them correlated it with family history and over consumption on sweet foods. The research from Parsons et al. (2018) revealed that some mothers responded it differently, with fear. They accepted the diagnose of GDM with assumption that it will give bad impact to the health of their baby. They felt

guilty and shy on their previous habits that might be the causes of GDM and felt guilty if fail in controlling the blood sugar level.

The fear and anxiety that were described by the pregnancy mothers in diagnose and procedure of GDM, later will provide information about emotional effects and burden that is felt by pregnancy mothers. While, others described its impact on their overall recent pregnancy and their future pregnancy. Others were more capable and easier to adapt with the diagnose. This is in line with the research indicated that risky pregnancy experience is linked to the escalated vulnerability, lack of control and stress increasing (Morrison et al., 2014).

b. Obstacles in GDM Management

The obstacles in GDM management affects the individual's behaviour alteration to start healthy living. The result of the research shows that one of the factors that keep pregnancy mothers form healthy living is a habit of excessive consumption on foods that should be avoided. The mothers struggle in controllong eating pattern due to the hunger feeling and excessive appetite during pregnancy. They haven't get used to eating pattern suggested by health-workers.

The research by Collier et al. (2011) stated that pregnant mothers will experience difficulties in performing physical activities and keeping the healthy eating pattern. They were struggling in maintaining healthy diet and regular exercises. They felt indapable to follow all diet recommendation and exercises due to working activities and kid's nursing.

A research by Bandyopadhyay et al. (2011) also stated that diet suggestion become their challenge. They have troubles to understand and maintain eating pattern. Though they were aware that diabetes type 2 can be the future risk, they are not sure to maintain the eating pattern and lifestyle after giving birth. They feel that control and diabetes management are hard to maintain.

It is supported by the research of Hirst et al. (2012) suggested that the advice to reduce the portion of the food or diet is confusing for pregnant mother. They feel hungry the whole day and unrealize the foods that appropriate for pregnant mother with DM. They need further information on GDM management.

Besides, the obstacles of GDM in this research are influenced by limited information and communication about pregnancy with DM. They presumed that the explanation from health-workers insufficient that led them to confusion in handling their pregnancy. They assumed that the brief was too short, hence complete information should be found from other sources. This is contrary with mother's preference to obtain detail explanation from health-workers. They were expected that complete information could help them to reduce their anxiety during pregnancy.

This is supported by Lindmark et al. (2010) who stated that information received by pregnancy mothers about GDM is considered as limited. They were unsatisfied with the information that was delivered in brief and confusing. The explanation was delivered too fast hence it was difficult to be understood. Some mothers stated that it is better to receive brief explanation on the first visit, and more detail on the next visit. They felt shock with the diagnose on the first visit, because everything still new and unclear.

As stated by Jirojwong et al. (2017) that part of pregnancy mother disobey suggestions from health-workers regarding to control DM. It is caused by confusing suggestion. They do not know how to obtain information and tends to avoid the questions. Some of pregnancy mothers have no chance to ask questions and lead to uncontrolled GDM. The result of the research from Hjelm et al. (2007) showed frustration and stress are escalated due to the lack of information about GDM, limited access to phone service anf the lack of trust on health-workers.

It is important for pregnancy mother to be clear noticed on diabetes melitus that could nurture mother's trust to health-workers. With the existences of knowledge and trust toward health-workers, it is easier to construct the preventive behavior to get cure for pregnant mother with DM.

The research from Collier et al. (2011) revealed the communication and information barriers on mothers with GDM. All pregnant mothers in this research experienced difficulties in gathering the information and communicating with health provider. They found problems in obtaining written information about diabetes at the health services. When they were asked about things that might be done to have healthy pregnancy in the future, they revealed the desire to gain more information and to establish better communication with health-workers. The mothers also mentioned about limited time for inquires or discussion with health-providers.

This research concluded that the difficulties in establishing the communication with health-workers were caused by the lack of time for pregnancy visits. In line with previous statement, Kilgour et al. (2015) stated that the lack of GDM information and the difficulties in accessing the doctors led to the increasing of mothers' anxiety towards GDM and its negative impact to them and their babies.

The strength of this research is semi structured interview mode that implemented. It is considered as perfect method to answer the research questions related to expanded individual experiences. Besides, this research is a finding that could complete the information about mothers' reaction when the first time exposed with the diagnose,

self-management, social support, and obstacles in pregnancy with DM, for further research preferences. The weaknesses of this research are the fact that the data were derived from past experiences that should be memorized, yet it is still any possibilities to forget the detail. This research is based on small size sample that insufficient to represent all pregnant mother with GDM

CONCLUSION

Pregnant mothers experience emotional reaction when first diagnosed with GDM. They try to adapt with GDM. The obstacles in GDM management is limited information and communication about GDM, mothers' difficulties in controlling eating pattern and adapt with GDM.

Therefore, the researchers expected more effective education or counselling from health-workers, particularly midwife to ensure clear understanding about self-management principals on pregnancy mothers. The existence of KIE about GDM is expected to enhance mothers' knowledge and could help mothers in adaption and handling GDM on her next pregnancy. This KIE activities are executed at the pregnant mothers' classes and accommodate them with diet guidance about eating pattern and involve family members to deepen their knowledge on pregnancy management with diabetes melitus.

ETHICAL CLEARANCE

This research was previously approved by ethical committee before being studied.

CONFLICT OF INTEREST

The researchers stated that there is no conflict of interest in this research.

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AUTHORS' CONTRIBUTION

All researchers were contributed to entire processes in this research, preparation, reviews and manuscript approval.

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