Perception of healthy lifestyle information in women with gestational diabetes

A pilot study before and after delivery

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Abstract

Background: Pregnant women with gestational diabetes mellitus (GDM) need information about the increased risk of developing type 2 diabetes mellitus (T2DM) in later life.

Aims: To investigate how women with GDM perceived information about this condition during pregnancy; to explore their opinions on healthcare provision up to one year after delivery; to investigate their perceptions about lifestyle a year after delivery.

Methods: Ten women were interviewed using a semi-structured guide. Data were analysed using content analysis. Questions included reactions to receiving the diagnosis and perceptions about information given during pregnancy and current health.

Results: Six of the women perceived that information given had been too sparse; the remaining four considered it useful to learn about the risk of developing T2DM in later life. Written information about GDM was considered very brief or non-existent. Care received after delivery was perceived to be positive. Group meetings arranged up to one year after childbirth were appreciated by all attendees. At these meetings, recommendations were given regarding food and physical exercise, but no follow-up was arranged to encourage more permanent lifestyle changes.

Conclusion: Opportunities for women with GDM to meet others with the condition and receive specialist support need to be maximised, so that these women can become more knowledgeable and be encouraged to change their lifestyle. This may help prevent or delay the onset of T2DM.

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Key words

Type 2 diabetes; gestational diabetes; information; aftercare

Introduction

Gestational diabetes mellitus (GDM) is a common complication of pregnancy.[1] Within a 10-year period, 40–60% of women with GDM develop type 2 diabetes mellitus (T2DM), and many others develop it later in life. However, research has demonstrated that the onset of T2DM can sometimes be delayed or prevented by regular physical exercise.[1] It has been suggested that a 30-minute walk five days a week increases the likelihood of weight loss in some individuals, which may lower the risk of developing diabetes and other diseases.[2] Physical activity also increases the uptake of insulin into the cell and therefore lowers blood glucose levels.[3]

In Sweden, about 2000 (1.7%) pregnant women are diagnosed with GDM each year, the majority of whom regain normal blood glucose levels immediately after giving birth.[4] In comparison, in the US it has been reported that 7% of all pregnant women are diagnosed with GDM.[5]

Pregnant women living in an area of mid-Sweden who have high blood glucose levels following an oral glucose tolerance test (OGTT) are referred to a specialist maternity clinic. At this clinic, the women receive information about GDM from a midwife, dietitian and physician, who explain why their plasma glucose values are high. The women are instructed to change their diet, specifically to reduce their sugar intake. In addition, they are informed that GDM often disappears after the birth, but that they are at an increased risk of developing T2DM in later life.[6,7] After delivery, all women with GDM are booked to attend the specialist maternity clinic within a year to undergo another OGTT. They are also invited to a group meeting at which they can obtain information and advice from professionals and meet other women in the same situation.

The current study focused on learning about the experiences of diabetes care and post-delivery follow-up services received by women with GDM, living in mid-Sweden.

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Aims

To investigate how women with GDM perceived information about this condition during pregnancy and to explore their opinions about the care they received up to a year after delivery. The study also aimed to investigate the women's perceptions about lifestyle a year after delivery.

Patients and methods

Study design

This qualitative study used a structured interview schedule and open-ended questions to elicit as much information on these women's experiences as possible. Responses were analysed using a content analysis method based upon Graneheim and Lundman.[8]

Inclusion criteria

Inclusion criteria were: GDM; delivery approximately one year previously; aged between 30 and 40 years; Swedish-speaking; no other known diseases.

Procedure

With assistance from the outpatient endocrinology clinic in a hospital in mid-Sweden, 10 women who had developed GDM who fitted the inclusion criteria were identified and asked to participate. An information letter about the study was mailed to these women and a week later they were contacted by telephone and asked about participation. Because the study was investigating the follow-up of GDM it was important that the women were given the opportunity to participate in the group meeting offered one year after childbirth.

A pilot interview was performed prior to the main interviews. The interview guide was found to be understandable and no alterations were made.

Interviews

The first author performed all of the interviews, half of which were undertaken in the respondents' homes, with the remainder taking place at the hospital; those who chose to be interviewed at home lived far from the hospital. An interview guide compiled for the current study was used. It included main questions such as: 'tell us your reactions when you received the diagnosis, your perceptions about the information given during pregnancy, and your health today'. Respondents were encouraged to describe their experiences in detail, in order to obtain as much information as possible. Follow-up questions such as: 'tell me more about it', 'how did you really experience this?', and 'how did you feel?' were asked. Each interview lasted between 30 and 45 minutes.

Data analysis

All interviews were tape-recorded and transcribed verbatim, including pauses and expressions. The authors read the interviews several times after transcription, to obtain a deeper understanding of the material. Text was then divided into meaning units that were condensed. The material was further condensed until all relevant text was included in the analysis material, and the condensed meaning units were abstracted and coded. The codes to be applied were discussed between the authors (Table 1). Codes with similar meanings were put into specific categories.[7]

Ethical considerations

The study was performed by the Department of Public Health and Caring Sciences and followed ethical rules applied by this Department. Furthermore, the study design was approved by the supervisor of the endocrinology clinic. The information given to the mothers about the purposes of this study was delivered in both written and oral forms, and the mothers were also assured confidentiality. Written informed consent was obtained from all participants. They were also informed that no outside person would have access to the information obtained in connection with the interviews. After transcription, the recordings were kept under lock and key. It was possible for participants to contact the interviewer after the interview if necessary. Participation was voluntary and could be ended at any time without having to explain why. Much effort was put into listening and showing empathy, during the interviews and in all contact with the mothers.

All answers were scrutinised and divided in to the following categories: perceptions about information; perceptions about group meetings within a year after delivery; lifestyle perceptions. Different categories were illustrated using quotes from individual interviews.

Results

Participants

All 10 women who were invited agreed to participate in this study. The women had all reached a level of higher education. With regard to their GDM status, during pregnancy five women received insulin treatment (which stopped after delivery) and five followed a diet-control approach. Nine women had attended antenatal follow-up appointments at the specialist maternity clinic. One woman had her follow-up appointments at an ordinary maternity clinic.

Perceptions about information

In the regular maternity clinic, information on GDM was perceived to be limited. Six women felt that they received the most information when they visited the specialist maternity clinic for the first time. Four women were happy with the information received during pregnancy, perceiving that they obtained information in a fast and concrete way, and that there had been opportunities to ask questions when necessary.

Meaning units	Condensation	Code	Category
'It was very fast to get information about what could happen and how it manifests. Above all the focus is on the baby. I felt that I got enough. I got brochures'	Fast information. Focus on the baby. Got sufficient information	Focus on the baby, enough	Perceptions about information
'It could be that I got too much information and that it might not have been absorbed, I was really sad. I felt like I didn't have a say in much. I don't think that I got any written info…Just about diabetes'	Got info directly, doesn't remember because she was sad. Felt she didn't have a say in matters. Didn't receive written info	Didn't have a say. No written	
'I was tested and they saw that my sugar had become normal again, and then I was invited to some kind of meeting, but I never went'	Tested one year after, invitation to meeting, did not attend	Decline group follow-up	Perceptions about group-meeting a year after delivery
'I got mostly information really. It wasn't until the follow-up 1 year later when we were at the doctors who only treated patients with diabetes. The doctors talked a little about certain things that you hadn't understood fully'	Follow-up and check-up one year after in a group. Got additional information	Group supplied additional information that had been missed	
'It is not something that I think of on a daily basis. I think that we eat healthily.. we will continue like that. Exercise is something I could think about more but I find it so boring'	Don't think about it, good diet, exercise is boring	Don't think about the diabetes	Lifestyle perceptions
'The risk of getting type 2 diabetes is in the back of your mind. You think about your diet, exercise and trying to lose weight. You have to rebuild muscles. It is actually simple but at the same time so hard'	Are aware of the risk of developing type 2-diabetes. It is easy yet difficult with diet and exercise	Easy, yet difficult	

Table 1. Qualitative content-analysis process used to develop codes in a pilot study of women with gestational diabetes

One woman said: *'When I found out I had diabetes the nurse informed me what it meant in practical terms, and also told me that this mostly is nothing that lasts forever. I was pleased with the information I got.'* Another woman said: *'I asked questions if there was anything that I was wondering about, it felt like they took their time to show and explain.'*

Two women were given brochures about gestational diabetes, which they felt to be important to share with their partners. One woman said: *'It was very quick to get information as I could read the brochure about what could happen and how the diabetes manifests. Above all the focus is on the baby, I am pleased that I got brochures.'*

Six women were less satisfied with the information received during pregnancy: they considered it to be too short and confusing, and that it was given to them too close to the diagnosis, and hard to absorb. Several women said that it would have been better to receive less information during their first visit, with more details given at subsequent appointments; they were in shock over the diagnosis they had received when they attended the first visit, and everything was new and uncertain.

One woman commented: *'You are on ground that you don't know anything about; you just have to accept a lot.'* Another woman said: *'I don't remember, there is so much to absorb when you are having a baby and becoming a parent, so you could benefit from some information being repeated. I did not*

receive any written information about gestational diabetes.'

Perceptions about group meetings within a year of delivery

All 10 women underwent diabetes status checks and received brief information about T2DM immediately after giving birth. The following categories describe how the women experienced follow-up meetings within a year of delivery.

Some said that when blood glucose testing ended (they had become used to it during pregnancy,) they felt a little abandoned, but they adjusted to everyday life fairly quickly. Three women underwent follow-up OGTT but did not feel they needed to attend a group meeting: one said she was not happy with the group situation, another felt that she had all of the information she needed, and the third never received an invitation to a group meeting.

One woman commented: *'I was tested and they found that my sugar had normalised, then they invited me to some sort of meeting, but I never went'*. Another said: *'Afterwards there were lots of resources to help and support, you could have what you wanted and more'*.

Most of the women were happy with the follow-up care after delivery, especially the group meeting within a year of delivery. Some thought much of it was repetitious, whereas others thought that it was good to receive information in a group setting before delivery and also at the one-year follow-up. All of those who participated in the group meeting appreciated the personal time with the doctor. Two quotes summarise the general perceptions: *'It was mostly information, the answers to all my questions I got when I took a course later on'*; *'This follow-up when they talked about food and so was mostly repetition. But even if it is old knowledge it is good to hear it once more'*.

Perceptions about lifestyle

This category describes the women's health experiences a year after delivery, with particular regard to the information on diabetes that they had received. All of the women had been informed that the GDM was going to disappear, often directly after delivery. Women who did not attend the meeting perceived that they lived a sound life and did not feel that they should change anything in their lifestyle. Two women expressed it like this: *'That is not something that I think about on a daily basis… I think that we eat healthily at home, so we're continuing that way'*; *'I am aware that you shouldn't enjoy too much of the good things but you have to allow yourself something now and again, I live like I lived before'*.

Women who attended the group meeting within a year after delivery were more aware of the risk of acquiring T2DM. Two women perceived that they had changed their lifestyle, particularly regarding their dietary situation, due to the knowledge of the risk of onset of T2DM later in life. Four of the women said that they often thought about the risk of getting T2DM and that they were aware of what they should do, but that it was hard to make lifestyle changes. One said: *'I know a lot but I don't follow through with all of it, but I am sure that I live a healthier life now than I would have if I hadn't known about it'*. Another articulated her experiences more profoundly: *'The risk of getting type 2 diabetes is in the back of your mind, you think about what to eat and to exercise, struggling to reduce weight. It is really that simple but also so hard'*.

Discussion

The main findings of this study were that the women in our sample were receptive to information given about the lifestyle changes that are necessary to delay the onset of T2DM after childbirth. However, they were dissatisfied with personalised follow-up information.

The category 'perceptions about information' demonstrated that most of the participants did not obtain much information from the regular maternity clinic where OGTTs were performed. Information was predominantly given during their first visit to the specialist maternity clinic. Several women commented that repeating this information at future appointments would have been appreciated. In line with other studies, many women commented that a specialist nurse, who could clarify information given by the doctor, should be present.[9,10]

Few respondents said that they had received written information about GDM, which suggests that the information given was varied and insufficient. Previous studies have shown that it is optimal to receive oral information at first, then use brochures as an opportunity to go through details in order to get a deeper understanding.[11,12] Written information can also easily be used by family and friends to create a wider understanding of the situation facing women with GDM.

Regarding perceptions of lifestyle changes, some participants were following recommendations made by nutritional specialists and were surprised that they had been diagnosed with GDM. All of the women had received good information about diet but less information about physical activity, which should be a large part of lifestyle changes. Through discussions and reflections with others in similar situations, the participants felt that the possibility for them to make lifestyle changes had improved. The follow-up appointments a year after having GDM increased their understanding and insight into lifestyle changes. Martensson *et al.* described similar findings in people with heart failure.[13]

These study results demonstrate that most of the women slipped back into their old lifestyles after delivery. Whittemore *et al.* described responses to changes in lifestyle that included fear and frustration when the future outlook seemed uncertain.[14] An interesting finding from a study by Hjelm *et al.* showed the importance of identifying the context of information given on GDM.[15] Women with GDM who are managed by specialist diabetes clinics expressed fears about the future risk of developing T2DM, but also believed GDM to be temporary. Consequently, relevant information on GDM should be given without delay, and repeatedly.[15]

With regard to our study findings, it became clear that women who attended group meetings had a greater interest in changing their behavioural patterns than women who did not attend such meetings. Providing an increased level of information about diabetes risk factors paved the way to a greater understanding of diabetes, and perhaps, therefore, greater motivation to go through with lifestyle changes.[14]

Methodological considerations

Qualitative methodological techniques were used to achieve the study purposes. The aim was to try to understand and analyse all of the information collected. It is important to use reliability and trustworthiness, and that the results are verifiable and transmittable, to get aspects of the study to be as believable as possible.[8]

Through interviews, the informants shared their experiences with the author. The women's answers are described using quotes, to clarify the meaning and to demonstrate the trustworthiness of the study.[16]

There were few participants in the study, but their answers were clear and exhaustive. If more women had been interviewed, it is likely that further aspects of the phenomenon would have emerged. It would also be interesting to investigate whether women with GDM living in other parts of Sweden have similar experiences of diabetes and lifestyle changes.

Clinical implications

The group meetings arranged within a year following childbirth were perceived positively by all who participated. The only negative comment was that written information about GDM had been very sparse or non-existent, but this could easily be corrected. There had been no follow-up or contact with the women to encourage more lasting lifestyle changes after the group meetings. Many wanted to make such changes but were unable to do so without support. One way to optimise the likelihood of lifestyle changes could be to arrange meetings twice a year for a three-year period, at which women with GDM could discuss and reflect about their behaviours. To support those who want to help themselves to prevent or delay the onset of T2DM is an important task for the healthcare systems in Sweden.

Conflict of interest statement

None.

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