ARTICLE : CASE REPORT

Service evaluation of patient satisfaction for antenatal diabetes education in Christchurch Women's Hospital, New Zealand

Sabrina Raj Kapur
Final Year Medical Student
The University of Leeds

Dr Ruth Hughes
Consultant Physician
Department of Obstetrics and Gynecology
Christchurch Women's Hospital

Sabrina Kapur is a final year medical student at the University of Leeds, UK. She spent six weeks undertaking an elective project under the supervision of Dr Ruth Hughes (Consultant Physician) at Christchurch Women's Hospital. Whilst studying Medicine, she has completed a BSc in Women's Health with Basic Medical Sciences at King's College London. Sabrina has an interest in travelling and is looking forward to visiting New Zealand again in the near future.

ABSTRACT

Gestational diabetes (GDM) is a condition routinely screened for in New Zealand. Recent research has shown that increasing levels of maternal hyperglycaemia correlate linearly with adverse outcomes of the pregnancy. Subsequently, there have been proposals by the International Association of Diabetes and Pregnancy Study Groups to change the diagnostic criteria for gestational diabetes to identify more women at risk of complications due to hyperglycaemia. This will involve lowering the current diagnostic threshold for GDM. Maternal diabetes education is currently offered on a one-to-one basis at Christchurch Women's Hospital. If diagnostic criteria for GDM are changed and more women who are at risk are identified, the demand for diabetes education will increase. In this situation, group education would be a more efficient method of education than the current two-hour individual sessions patients receive. We performed an evaluation of patient satisfaction of current antenatal diabetes care in Christchurch Women's Hospital and gathered patient opinions on possible future group education. Selected participants were interviewed and findings were grouped according to themes. Overall, the participants were highly satisfied with the education services provided and the majority of them would prefer one-to-one education to group sessions. In the future, group sessions may be acceptable for patients as several women did express an interest in group education. This would help to address the expected increase service demand.

INTRODUCTION

Worldwide, one in 10 pregnancies is associated with diabetes and of these, 90% are gestational diabetes (GDM).[1] Gestational diabetes is defined as 'any degree of glucose intolerance with onset or first recognition during pregnancy'.[2]

Currently in New Zealand, all pregnant women are offered screening for GDM between 24-28 weeks gestation. The Hyperglycaemia and Adverse Pregnancy Outcomes (HAPO) study in 20083 was established to investigate adverse effects of pregnancy and correlate them to levels of glucose intolerance and overt diabetes. The study demonstrated that with increasing levels of hyperglycaemia in pregnancy, there was an increased frequency of foetal macrosomia, clinical neonatal hypoglycaemia and delivery related complications.[3] Increasing levels of maternal hyperglycaemia also lead to predispositions to impaired glucose tolerance, obesity and type 2 diabetes in both mother and neonate later in life.[1] Following the publication of this study, the International Association of Diabetes and Pregnancy Study Groups (IADPSG) collated opinions of several groups to propose changes internationally to the diagnostic criteria for GDM.

Internationally practices vary widely when screening for and diagnosing GDM. The current diagnostic criteria for GDM are arbitrary figures; glucose tolerance in pregnancy is a continuum.[3] Currently in New Zealand, a diagnosis of GDM is made when the fasting blood glucose sample is 5.5 mmol/l or above, or when the blood sample taken two hours after the oral glucose tolerance test (OGTT) is 9.0 mmol/l or above. However, the IADPSG are proposing GDM to be diagnosed if the fasting blood glucose sample is 5.1 mmol/l or above or the two hour post OGTT blood sample is 8.5 mmol/l or above (see table 1). By lowering the threshold for the diagnosis of GDM in line with IADPSG guidelines, more women with hyperglycaemia during pregnancy will be identified and therefore treated.

Oral glucose tolerance test (OGTT) (Current diagnostic test)	New proposed test
Patient fasts for at least 12 hours	Patient fasts for at least 12 hours
Fasting blood glucose sample taken	Fasting blood glucose sample taken
75g glucose load given	75g glucose load given
Blood glucose sample taken 2 hours later	Blood glucose sample taken 2 hours later
If fasting blood sample is 5.5 mmol/l or above and/or 2 hour blood sample is 9.0 mmol/l or above woman is diagnosed with GDM	If fasting blood sample is 5.1 mmol/l or above, 1 hour blood sample is 10.0 or above and/or 2 hour blood sample is 8.5 mmol/l or above woman is diagnosed with GDM

Table 1: Current and proposed diagnostic method and criteria[4,5]

Changes to diagnostic criteria will reduce complications during delivery thereby decreasing morbidity and long term healthcare costs.[6,7] However, there are likely to be problems with service provision. Lower thresholds for the diagnosis of GDM will result in a two to three-fold increase in the number of women diagnosed consequently increasing the workload of maternal-foetal medicine teams.[6,7] New methods may need to be implemented to achieve a higher level of care for these patients in an already stretched system.[6]

New Zealand is not yet moving to the new diagnostic criteria. Irrespective of this, the numbers of women being diagnosed with GDM are steadily increasing and new models of care need to be explored.[8]

For long term conditions such as diabetes, patient education is important in maintaining good control.[9] In the non-pregnant population, there is good evidence that diabetes education impacts positively on health and psychosocial outcomes.[10,11] Currently at Christchurch Women's Hospital, all women diagnosed with GDM are invited for an individual diabetes education session; this involves a one hour consultation with the diabetes midwives followed by a one hour session with the dieticians. Mensing and colleagues found that group education is an efficient and cost-effective alternative to individual education.[9] *Rickheim et al.*[12] compared the effectiveness of group versus individual diabetes education (in the non-pregnant population). They found that group education was similarly effective at providing adequate glycaemic control as individual education. Therefore, as the efficacy of both methods is similar, it may be possible to use group education sessions to teach patients about diabetes.

The aim of this study was to perform a service evaluation of the services currently available for diabetes education at Christchurch Women's Hospital. In addition to this, we looked at patient opinions on the hypothetical acceptability of group education sessions in addition to individual education sessions.

METHODS

This study was conducted in Christchurch Women's Hospital, New Zealand. Of around 5,000 deliveries here per year, approximately 5% are affected by GDM.[13] Diabetes education is offered to all women diagnosed with GDM.

Based on previous studies, the number needed to interview was 12-20 women. *Guest et al.*[14] showed that in qualitative research, data saturation is achieved after the first 12 interviews. *Thorogood and Green*[15] found that after 20 interviews with specific questions there were no new points identified. Thirteen women with newly diagnosed GDM who were attending diabetes education sessions at the time of recruitment were invited to take part in the project. These women were selected at random. All 13 women consented to being interviewed. The interviews and therefore data collection was achieved over a four-week period from 28th July to 29th August 2014.

A set of pre-prepared questions was asked to every patient (see appendix 1). The interview consisted of open-ended questions. The researcher wrote the questions which aimed to address the following: the level of knowledge women had regarding GDM before their diagnosis and in what way the sessions had enhanced their knowledge; the opinions on services currently provided, with specific attention to the individual diabetes education and dietician sessions; which part of the sessions patients found most useful; and finally the opinions on the introduction of group sessions. Interviews were carried out on a one-to-one basis in a private room immediately after the initial diabetes education session. The interviews were not recorded but the researcher took notes. All interviews were carried out in English, although English was not the first language for three of the women interviewed. Of the 13 women interviewed, four women had GDM in a previous pregnancy, which had been managed with diet, metformin or insulin. These women still attended the diabetes education session. According to the New Zealand National Ethics Advisory Committee, no formal ethics review is required.

APPENDIX 1

PATIENT DEMOGRAPHICS

Age
Ethnicity
Previous GDM (and management)
Family history of diabetes

PATIENT SATISFACTION QUESTIONS

How did you feel when you found out you had gestational diabetes?
Did you have much prior knowledge about it before you were told?
What do you think of the services offered here?
In particular what do you think of the education session and the dietician session individually?
What do you think was the most important part or thing you learnt from today?
Can you think of anything that needs to be improved?

GROUP SESSIONS

What are your opinions on group sessions instead of individual sessions? They would have two to three women all learning together with the diabetes educators and followed up with individual one to one sessions. Do you think you would go if offered?

RESULTS

The main findings from the questionnaire were grouped into themes. Within each question, sub-themes were identified which have been highlighted below. These were all direct quotes from the interviews and some responses fit into more than one theme.

Response to diagnosis:

There was an almost unanimous response of being 'shocked' or 'surprised' when women were asked how they felt when they were told they had GDM. This applied to women of all ethnicities. Furthermore, having had GDM in a previous pregnancy did not affect this response. For some women, their midwives and doctors had already spoken to them about the possibility of developing GDM in the pregnancy and so these women were expecting the diagnosis. Despite having received pre-warning, there were women who reacted very badly to the news in the education sessions and felt guilty about the diagnosis.

SURPRISE, 6/13 WOMEN:

I had gestational diabetes last time but in this pregnancy I have not been eating cakes or sweet things or anything'

UPSET, 4/13 WOMEN:

'I have been dreading the session, I felt really depressed when I found out'
'I was gutted'

FEAR, 3/13 WOMEN:

'I felt panicked and scared. I thought, "What am I going to do now?"'
'I felt scared and upset'
'I felt scared and was thinking, "Will my baby grow", and, "Will I need to have a Caesarean section"'

GUILT/SELF BLAME, 2/13 WOMEN:

'My first response to being told I had gestational diabetes was that I must have a really bad diet'

Most useful aspects of education sessions:

The diet education session stood out in the results as the most important part of the education sessions among participants, followed by the session on testing blood sugars. Some women identified themes within these hour-long sessions as the most important aspects.

Diet education session, 5/13 women:

'I learnt about cutting breakfast into half, learning to tweak diet in the morning'

'The advice about what to eat, the future and keeping healthy was useful'

'I have made a lot of changes already and it was nice that the dietician acknowledged that'

'The session made me feel more at ease'

'The diet session was common sense, but useful to have it explained'

'The information about glucose and carbohydrates was good; I didn't understand it before'

'I thought I would need a stricter diet'

'It was really good because it highlighted different food options and showed which brands were good to buy'

Testing blood sugars, 3/13 women:

'The best part was learning how to use the meter'

'Learning how and when to test was the most important part'

'Being shown how to use the meter was important. She made me feel more comfortable about testing'

Improved level of understanding, 6/13 women:

'I feel more relaxed now'

'It helped not to feel too alarmed'

'I had a really bad experience in my last pregnancy and when I got the phone call last week I felt depressed. Now I fully understand what it means to have diabetes. I am happy; I'm not in the danger zone yet but I can do stuff to prevent it'

'I was reassured that this was about my placenta and the pregnancy, not that I was being a bad mother'

Asking questions, 1/13 women:

The best thing was being able to ask questions'

Written information, 1/13 women:

To further help women for whom English is not their first language, DVDs and written material in different languages were provided.

'Everything is backed up by little information booklets'

'The best thing was going away with lots of [written] information'

'The most important part from the session was the pamphlet from the dietician. It has so much information in it, it is all broken down easily and tells you exactly what you can and can't eat plus gives you different food ideas which is really helpful'

Improvements to be made:

Improvements, 2/13 women:

'The length of appointment time is difficult with arranging childcare'

'The only problem is parking'

Overall opinions on services:

The individual educators (diabetes midwives and dietician), 4/13 women:

We felt we were in safe hands'

'They care about the women'

'Explanations are good and are pitched at the right level for me'

'They have improved since last time…they have supported me more through this pregnancy'

Team environment, 2/13 women:

'Clear communication was present in the team'

'Everyone knows their roles'

Group sessions:

Support for group sessions, 10/13 women:

'Group sessions would be a good thing. Lots of people would learn. It's a good way to meet other women with diabetes…see what they struggle with and how they cope…share information…give and receive ideas…'

'I would go to a group session. People might ask something that you don't think of. There is the feeling of togetherness with other women. It would be a good social occasion and made even better if they provided food that we could eat there!'

'I wouldn't mind a group session as long as it is not too big'

'The dietician session would be fun in a group'

Support for both options, 4/13 women:

'I would go depending on timings. I have young children so would need to work around that'

'I would have done it in the first pregnancy. Not now because I have already done it all before. I know it all and it's easier this time round'

'I would go to a group depending on what topics were going to be covered'

'It might work for some people but I wouldn't go'

'It's a good idea but I would prefer one-on-one'

Preference of individual sessions, 3/14 women:

'Individual sessions would be better because you are given an appointment time. My husband wants to come and it can be arranged to fit us both'

'It is more helpful to have one on one teaching because I had lots of questions about the meter'

'I would get annoyed by other people's questions in a group situation'

DISCUSSION

This study was set out to evaluate patient satisfaction in the antenatal diabetes clinic at Christchurch Women's Hospital. It was also designed to gauge the opinion on moving from the current two-hour individual sessions towards group education sessions. The rationale for this was that we are anticipating an increase in demand for these services.

Response to diagnosis:

For the majority of women, the diagnosis of GDM was an unwelcome surprise. Although not all women explicitly referred to the health and impact of GDM on their children, this was their underlying concern. All women wanted to ensure a healthy and successful pregnancy and so engaged in the education sessions, tested blood sugar levels six times a day, and made dramatic changes to their diets where necessary.

Most useful aspects of education sessions:

The majority of women identified the dietician session as the most useful aspect of the education session. Written information was highlighted as a positive part of the services, especially for women who found that there was too much information given during the sessions.

Improvements to be made:

One area that a participant thought could be improved was the appointment length. Administration staff can be made aware of this and work with patients to ensure that appointment times suit childcare and personal requirements. Another area of improvement highlighted was car parking; this is currently a problem in Christchurch and is in the process of being resolved.

Overall opinions on services:

The feedback received for the education sessions as a whole was very positive. Therefore it is understandable that many women are unwilling to see a change in the services. Women found the information given was pitched at the right level, questions were answered and the sessions left participants more informed than before. Many women felt apprehensive and scared before the education sessions but found that their fears were allayed by the staff and subsequently felt more relaxed. The information gained meant that women felt less 'shocked', 'panicked' and 'worried' than when they were first given the diagnosis. Despite differences in women's prior knowledge of diabetes, all women gained some benefit and new information from the individual sessions.

Group sessions:

In spite of positive comments about group sessions, only six women (less than half of the group interviewed) said they would attend a group session. Therefore, although the majority of women acknowledged benefits of group education, many women said it was better suited to other people. It may be useful to share positive feedback from other women who have participated in groups or start with very small group sizes so it is less daunting.

Some women, for whom English is their second language, considered group sessions a good idea, but felt they would struggle with understanding in a group. If there are enough women in this category, groups with interpreters could be set up for same language groups. This should continue to be backed up with written and visual information in the language most suited to the patient.

Other women thought that it would be difficult to tailor group education sessions to suit the individual needs of the women attending. If groups only contained two to three women per session, this may not be a problem.

There was a difference in opinion for women with an increased understanding of GDM; some healthcare professionals who were participants in the study or women who have had diabetes education before felt they would gain little benefit from a group education session as there would be little new information offered. However, another healthcare professional thought a group would be a good way to meet other women and share experiences of GDM.

Limitations:

A visiting student who was introduced at the beginning of each education session carried out interviews. It was clear that the researcher was a member of the team so it is unlikely that women would have felt comfortable to discuss any faults with the system or educators. To ensure honest opinions are received, an anonymous written questionnaire can be offered in addition to interviews.

This work is purely qualitative and no statistical testing has been done because no numerical measurements of patient satisfaction were made. Future work may be helped by the use of psychometric scales, which will quantify patient opinions on services.

Conclusion:

It was found that women were very happy with the services provided at Christchurch Women's Hospital for antenatal diabetes education. All women had positive feedback about the education sessions, the educators and the support they received.

The feedback received for the individual education sessions is very positive and so it is understandable that many women are unwilling to see a change in the services. However, with the increased number of women who will need diabetes education in the next few years and the current capacity of the diabetes education team, a change is likely to be required.

It has been useful to collect information on patient opinions of group sessions and this can be used to plan group education sessions for women who displayed some resistance. It will be vital to demonstrate that group sessions will be made personal, as this is often the factor that women do not want to lose by attending a group.

The next step will be to find women who would be willing to try a group session and set up a program for this followed by a similar patient satisfaction survey. This would then allow improvements to be made so that over time the group education sessions would appeal to a wide range of women (hopefully all), which would make the workload more manageable as increasingly more women require diabetes education during pregnancy.

ACKNOWLEDGEMENTS

My thanks go to everyone at Christchurch Women's Hospital who was involved with the setting up and facilitating of this project. Special thanks go to my supervisors Dr Ruth Hughes, who was responsible for the study design and reviewing the article and Dr Peter Moore. I would like to acknowledge the diabetes education team, Carol Perwick, Carol Newton Smith and Michele Cane, who allowed me to sit in with them to observe their education sessions and facilitated arrangements for interviewing patients afterwards. Finally, I would like to extend my gratitude to the patients who participated in this study.

REFERENCES

1. Veeraswamy S, Vijayam B, Gupta VK, Kapur A.
Gestational diabetes: the public health relevance and approach.
Diabetes Res Clin Pract 2012;97(3):350-8.

2. American Diabetes Association.
Gestational Diabetes Mellitus.
Diabetes Care 2003;26 Suppl 1:S103-105.

3. HAPO Study Cooperative Research Group.
Hyperglycemia and adverse pregnancy outcomes.
N Engl J Med 2008;358:1991–2002.

4. International Association of Diabetes and Pregnancy Study Groups Consensus Panel, Metzger BE, Gabbe SG, Persson B, Buchanan TA, Catalano PA, Damm P, Dyer AR, Leiva Ad, Hod M, Kitzmiler JL, Lowe LP, McIntyre HD, Oats JJ, Omori Y, Schmidt MI.
International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy.
Diabetes Care 2010;33(3):676-82.

5. Yapa M, Simmons D.
Screening for gestational diabetes mellitus in a multiethnic population in New Zealand.
Diabetes Res Clin Pract 2000;48(3):217-223.

6. Reece EA, Moore T.
The diagnostic criteria for gestational diabetes: to change or not to change?
Am J Obstet Gynecol 2013;208(4):255-9.

7. Cundy T, Ackermann E, Ryan EA.
Gestational diabetes: new criteria may triple the prevalence but effect on outcomes is unclear.
BMJ 2014;348:1567.

8. Cundy T, Ackermann E, Ryan EA.
Screening, diagnosis and services for women with gestational diabetes mellitus (GDM) in New Zealand: a technical report from the National GDM Technical Working Party.
NZ Med J 2008;121(1270):74-86.

9. Mensing CR, Norris SL.
Group Education in Diabetes: Effectiveness and Implementation.
Diabetes Spectrum 2003;16(2):96-103.

10. Brown SA.
Studies of educational interventions and outcomes in diabetic adults: a meta-analysis revisited.
Patient Educ Counsel 1990;16:189–215.

11. Norris SL, Engelgau MM, Narayan KMV.
Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials (Review).
Diabetes Care 2001;24:561–587.

12. Rickheim PL, Weaver TW, Flader JL, Kendall DM.
Assessment of Group Versus Individual Diabetes Education. A randomized study.
Diabetes Care 2002;25(2):269-74.

13. University of Otago.
Department of Obstetrics and Gynaecology.
http://www.otago.ac.nz/christchurch/departments/obgyn/

14. Guest G, Bunce A, Johnson L.
How Many Interviews Are Enough? An Experiment with Data Saturation and Variability.
Family Health International 2006;18(1):59-82.

15. Green J, Thorogood N.
Qualitative methods for Health Research.
Second Edition. London: SAGE Publications Ltd; 2009