

RESEARCH ARTICLE

‘Oh, I’ve got an appointment’: A qualitative interview study exploring how to support attendance at diabetes screening after gestational diabetes

Rebecca A. Dennison¹  | Claire L. Meek^{2,3,4}  | Juliet A. Usher-Smith¹  |
Rachel A. Fox⁵  | Catherine E. Aiken^{6,7}  | Simon J. Griffin^{1,8} 

¹The Primary Care Unit, Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK

²Institute of Metabolic Science, Addenbrooke’s Hospital, Cambridge, UK

³Department of Clinical Biochemistry, Addenbrooke’s Hospital, Cambridge, UK

⁴Wolfson Diabetes and Endocrinology Clinic, Cambridge University Hospitals, Addenbrooke’s Hospital, Cambridge, UK

⁵School of Clinical Medicine, University of Cambridge, Cambridge, UK

⁶University Department of Obstetrics and Gynaecology, University of Cambridge, NIHR Cambridge Comprehensive Biomedical Research Centre, Cambridge, UK

⁷Department of Obstetrics and Gynaecology, Rosie Hospital, Cambridge University Hospitals, Cambridge, UK

⁸MRC Epidemiology Unit, Institute of Metabolic Science, School of Clinical Medicine, University of Cambridge, Cambridge, UK

Correspondence

Rebecca A. Dennison, Primary Care Unit, Department of Public Health and Primary Care, University of Cambridge, East Forvie Building, Cambridge CB2 0SR, UK.
Email: RL423@medschl.cam.ac.uk

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Abstract

Aims: To explore the views of women with a history of gestational diabetes mellitus (GDM) on suggested practical approaches to support diabetes screening attendance after GDM, which is recommended but poorly attended.

Methods: We conducted semi-structured interviews with 20 participants in Cambridgeshire, UK who had been diagnosed with GDM and were 3–48 months postpartum. Interviews covered whether participants had been screened and why, plans for future screening and their views on potential interventions to facilitate attendance (at the first postpartum test and annual testing). Framework analysis was used to analyse the transcripts. The interview schedule, suggested interventions and thematic framework were based on a recent systematic review.

Results: Sixteen participants had undergone screening since pregnancy, explaining that they had an appointment arranged and wanted reassurance that they did not have diabetes. The participants who had not been tested were not aware that it was recommended. Only 13 had planned to attend subsequent tests at the start of the interview. Eight themes to support future attendance were discussed. The majority of the participants agreed that changing the processes for arranging tests, offering choice in test location and combining appointments would facilitate attendance. Child-friendly clinics, more opportunities to understand GDM

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and the role of postpartum testing, stopping self-testing and increasing their GP's awareness of their pregnancy received inconsistent feedback. The nature of the test used did not appear to influence attendance.

Conclusions: The participants wanted to be screened for diabetes after GDM. We have identified interventions that could be relatively simply incorporated into routine practice to facilitate screening attendance, such as flexibility in the appointment location or time and sending invitations for tests.

KEYWORDS

gestational diabetes, health service delivery, screening, type 2 diabetes

1 | INTRODUCTION

Gestational diabetes mellitus (GDM) is an increasingly common disorder, affecting over 5% of pregnancies in the United Kingdom.¹ In addition to increasing the risks of pregnancy complications affecting both the mother and baby, it is associated with an eight-times-higher lifetime risk of type 2 diabetes after pregnancy.² Approximately a third of women with GDM are diagnosed with diabetes by 15 years postpartum.²

International guidelines recommend that women who have been affected by GDM are screened for glucose abnormalities during the postpartum period and at regular intervals in the following years.^{1,3} In the United Kingdom, screening should occur at around 6 weeks postpartum using a fasting plasma glucose (FPG) test to exclude persisting diabetes, followed by annual screening using HbA_{1c} to monitor glucose levels and identify those at highest risk of progressing to type 2 diabetes.¹ Earlier detection and effective management reduces exposure to hyperglycaemia and hence the risk of longer term complications.

However, the uptake of testing varies by population, often at less than 50%.⁴ A recent analysis of medical records found that only 58% of women in the United Kingdom attended diabetes screening in the first-year postpartum ($n = 9118$), and <40% attended in the second and third years.⁵ Two small, local studies suggest even lower annual rates of 16% and 20% thereafter, with wide regional variation.^{6,7} In a qualitative synthesis of the literature,⁸ we found that women's experience of the healthcare system and personal factors influence both opportunities and motivation to attend testing. Women understood the importance of testing based on the GDM and postpartum care received, were put off by an unpleasant procedure that could be inconvenient to attend, were busy caring for their children alongside other daily tasks, and had varying levels of concern about type 2 diabetes that could increase or decrease motivation to attend testing. Of the 16 studies included in this review,

Novelty statement

What is already known?

- Women's experience of the healthcare system and personal factors influence their opportunity and motivation to attend recommended diabetes screening after GDM.

What has this study found?

- Receiving invitations or having appointments booked for them were perceived to be important for screening attendance.
- The current system is not easily compatible with family life, therefore flexibility in appointment location and times, plus opportunities for feedback on the test result, would be beneficial.
- The nature of the test itself was not a barrier to attendance.

What are the clinical implications of the study?

- By making small changes, such as sending invitations and providing choice in appointments, clinicians can support women with GDM to attend diabetes screening.

only one was set in the United Kingdom.⁹ Along with many of the other studies, this primarily considered the first postpartum test using an oral glucose tolerance test (OGTT), which is no longer recommended in the 2015 National Institute for Health and Care Excellence (NICE) guidelines for GDM management.¹

Based on that review, we developed recommendations for promoting screening after GDM and evaluated our confidence that these recommendations would be effective (such as implementing recall systems and sending reminders to non-responders [high confidence]).^{8,10}

In this study, we explored the views of women with a history of GDM on these recommendations in order to

identify which might be the most promising to develop further into potential interventions to facilitate screening, in addition to their own suggestions.

2 | PARTICIPANTS AND METHODS

The 'Diet, Activity and Screening after gestational diabetes: an Interview Study' (DAiSiES) was approved by the West London and GTAC Research Ethics Committee (reference 19/LO/0441).

2.1 | Recruitment

Clinical teams and research midwives from the Rosie Hospital, Cambridge and Peterborough Hospital identified eligible participants via medical records. These are a tertiary referral centre and large district general hospital, respectively, serving a community with socio-economic and ethnic diversity (described elsewhere).^{11,12} Three-quarters of participants with GDM at the Rosie Hospital between 2014 and 2017 had a postpartum test within 1 year of delivery ($n = 556$ women with GDM).¹³

Women with previous GDM were posted or emailed a customised invitation letter and participant information sheet describing the purpose and procedure of the interviews. Interested participants replied to the midwives, who passed their contact details to the study researcher to arrange an interview and answer any questions over the telephone. Additionally, we displayed posters at antenatal clinics to raise awareness before potential participants received invitations.

The total number of participants invited was not collected, but all participants who wanted to take part were interviewed. We stopped approaching new participants after several interviews did not result in novel findings.

2.2 | Inclusion criteria

Mothers over 18 years old were eligible if they had been diagnosed with GDM during any previous pregnancy. They must have been between 12 weeks and 4 years postpartum in order to have settled with their new baby, attend postpartum follow-up and be cared for under the 2015 NICE guidelines.¹ Women with adverse pregnancy outcomes (including stillbirth, neonatal death and major congenital anomaly), who had participated in a GDM-related pregnancy intervention or were considered unsuitable for any other reason by the midwives were not invited to take part.

2.3 | Interview process

Participants were invited to a single semi-structured interview at a time and private place of their choice (their home or a room in the hospital were suggested). It was made clear that children could be present during the interview, so that alternative childcare would not be needed. The same researcher (RD) conducted all of the interviews; she began by introducing herself to the participants as a non-clinical PhD student with experience in public health research and training in qualitative methods. She would listen to their experiences, not judge or advise, and they could stop the interview whenever they wanted to. Participants then gave written informed consent, confirming that they understood the purpose and procedure of the study, and permitted it to be audio-recorded.

The interview guide and suggestion cards (Table S1) were based on the recommendations we developed previously,⁸ and adapted for discussion with participants (Figure 1). Written feedback from the participant and public involvement group, composed of mothers with GDM, was incorporated into the final version, which was further refined after reflection on the first interviews.

RD began by asking participants to share their experience of GDM, which helped to build rapport and understanding. They discussed how they could be supported to maintain a healthy lifestyle (reported separately) before focussing on attending diabetes screening: whether they had been and why, plans for future screening and what might help them attend. Participants were asked about their own ideas first, then to provide feedback about the suggestion cards provided by the researcher (whether they agreed or disagreed with each suggestion and anything they would add). Prompts were given as necessary. It was not appropriate to ask all participants to comment on all the suggestion cards; this might be insensitive if they were unaware they were eligible for postpartum screening, for example.

Finally, the participants completed a short questionnaire to collect relevant demographic information, and had an opportunity to provide feedback on the interview. Shortly after the interview, RD recorded field notes.

2.4 | Analysis

Interview recordings were transcribed by a professional transcription service. RD checked the transcripts for accuracy and pseudo-anonymised them by removing names and places. Transcripts were not returned to participants for comment. In order to reduce the burden on the participants, we invited them to provide feedback on a summary of the findings instead.

Systematic review recommendation

Suggestion card used in interviews

Relationship with healthcare

1. Educate clinicians how to promote screening throughout GDM and postpartum/subsequent care (H)
2. Implement recall systems for postpartum testing, and send reminders to non-responders/for missed appointments (H)
3. Establish standard protocols for communicating GDM history within healthcare systems (M)
4. Promote patient-centred approaches to care in order to facilitate building relationships and opportunities for questions (M)

The appointment and test

5. Make clinics more child and nursing-friendly, and encourage mothers to bring children to appointments (M)
6. Seek innovative, personalised options to make it easier for hard-to-reach women to attend testing (e.g. drop-ins, alternative locations) (M)
7. Utilise more pleasant, less time-consuming testing procedures and protocols (M)

Personal and family-related practicalities

8. Schedule postpartum glucose testing to coincide with other postpartum check-ups (both mothers' and children's appointments) (L)

Concern about diabetes

9. Educate women about the purpose of screening and how the procedure works (H)
10. Educate women that postpartum self-testing, behaviour compliance or one negative test result is not sufficient to rule out T2D in the long term (M)

1. Discussing postpartum tests during pregnancy
2. Invitations and reminders for tests
3. Better GP awareness of your pregnancy
4. More chances to understand GDM
5. Child-friendly clinics
6. Choice of test location
7. More pleasant tests
8. Combining appointments
9. Better understanding of diabetes tests
10. Removal of self-monitoring

FIGURE 1 Adaptation of recommendations developed in the qualitative synthesis⁸ to the DAiSiEs interview schedule. H, high confidence; M, medium confidence; L, low confidence in the recommendation in accordance with the GRADE-CERQual evaluation¹⁰

Framework analysis began after completion of the first few interviews.¹⁴ This involved familiarisation with the data through reviewing recordings/transcripts and field notes, identifying a tentative thematic framework, coding each transcript, charting to summarise each code for each transcript and mapping and interpretation. The original framework was based on the suggestion cards then refined to reflect where similar concepts were identified in the early interviews. The final codebook for the framework is reported in Table S2. We retained distinction between suggestions initiated by participants and responses to the suggestion cards. We interpreted the findings by carefully studying across and down the charts for repeating or unique ideas and sought to describe and explain the phenomena observed.

NVivo 12 was used for coding transcripts and generating the summary charts. RD coded all of the transcripts and developed the charts, while RF focused on four transcripts to ensure agreement. Interpretation included discussion with the other authors who had read some or all of the transcripts and charts, considering our clinical

(obstetrics and general practice) and non-clinical backgrounds. Two participants confirmed that their views had been represented in the summary of the findings and did not provide further suggestions.

3 | RESULTS

Twenty participants were interviewed between June 2019 and February 2020. The participants' characteristics were consistent with previous data from the region (Table 1).^{11,12} Eighteen participants chose to be interviewed in their homes, often with children present, and two took place at the hospital. Eleven participants had attended Peterborough Hospital during their pregnancy and nine had attended the Rosie Hospital, Cambridge. The median (interquartile range) number of pregnancies per participant was 2 (1–2.25), with 1 (1–2) pregnancy affected by GDM. No one had been diagnosed with type 2 diabetes. Interviews lasted for a mean of 38 min (range 21–62 min) and none stopped prior to natural closure.

TABLE 1 Participant characteristics at the time of the interview

	N (per cent)
Age band	
26–30 years	3 (15)
31–35 years	9 (45)
36–40 years	6 (30)
≥41 years	2 (10)
Ethnicity	
White British or European	14 (70)
Asian ^a	6 (30)
Education level	
Secondary or further	5 (25)
Higher	6 (30)
Postgraduate	9 (45)
Employment	
Full time	10 (50)
Part time	9 (45)
Home parent	1 (5)
On maternity leave	11 (55)
Living with partner	18 (90)
Number of children	
1	6 (30)
2	9 (45)
≥3	5 (25)
All pregnancies affected by GDM	13 (65)
On medication for GDM (metformin and/or insulin)	10 (50)
Attended any postpartum diabetes test	16 (80)
Intended to attend future testing ^b	13 (65)

^aIncluding Chinese, Japanese and Indian ethnicities.

^bElicited from transcripts.

Sixteen participants had had a postpartum diabetes test and another was booked for one soon after the interview (considered to be an attender hereafter). Half of the participants returned to the hospital for this, four of whom had had it booked for them during pregnancy. The remainder had the first test at their general practice—they were either invited via a letter from the GP or were unsure, so asked the GP who arranged it. Those who were over 1 year postpartum attended the GP for annual testing. Only one participant received text reminders to book the blood test; others did not anticipate any contact from primary care about this.

Most participants went for testing because they saw it as an important part of their care. They were clearly instructed to attend, invited and/or had the appointment

booked for them: “I thought, ‘Oh I’ve got an appointment.’ It didn’t really occur to me not to go” [Participant 1, tested postpartum]. They also added that they wanted to know whether the diabetes had gone (for interest or reassurance), therefore whether they needed to take further action such as increasing exercise or initiating medication. Some participants spoke of the postpartum test as closure to GDM. Additionally, several commented on the lack of feedback on the outcome of the test unless they fell into the ‘pre-diabetic’ range, and two participants felt that annual testing was not regular enough.

Three participants had not attended testing because they had not been invited—they did not know it was advised and thought it was normal not to be contacted, or had forgotten. Despite having had postpartum tests, four more participants revealed that they were unaware of recommendations for lifelong testing at the beginning of the interview. One participant understood from her GP that her blood test results were so good she was no longer at increased type 2 diabetes risk.

Where it was appropriate, the interviewer suggested that the participants who had not been tested or did not have plans to return annually (in line with NICE guidelines¹) to contact their GP to discuss this. These participants were keen to do so for similar reasons to the participants who had attended; that is, they wanted reassurance. One participant was concerned that she still had diabetes.

The participants’ views on suggestions to facilitate screening are reported as eight themes. Nine participants put forward their own ideas to facilitate screening attendance. The ability to choose where the test was held was most frequently suggested. This is summarised in Table 2 and described below. Table S3 indicates the participants’ agreement with each suggestion card, if they responded, and their own ideas. The findings generally related to the ease of attendance rather than preventing attendance altogether, which is likely to reflect that the majority of this sample had undergone testing.

3.1 | Understanding GDM and postpartum testing (suggestion cards 4 and 9)

Half of the participants who had attended screening felt that they already had enough information about the implications of GDM on their future health and the purpose of postpartum testing. They had learnt from their clinicians (one participant had been emphatic about how discussing the risk of diabetes with the consultant directly at the end of her pregnancy had influenced her), did their own research or had existing knowledge themselves.

TABLE 2 Summary of the themes and participants' agreement with whether the suggestion cards will support attendance at postpartum diabetes screening

Theme	Overall response	Illustrative quotations
Understanding GDM and postpartum testing	Suggestion card 4: mixed Card 9: mixed	<ul style="list-style-type: none"> • “At the moment there’s nothing more [about “the effect of GDM on your life”], that test at six weeks was the only thing. Maybe it is better to do a test and see somebody in a focus group or in a small group just as a de-brief kind of.” [P2, tested] • “I think that [card 9] would be very motivational to me if I didn’t already feel I had a reasonable understanding.” [P3, tested]
GP awareness of pregnancy	Card 3: mixed	<ul style="list-style-type: none"> • That “would help, because that’s a person that you’re used to seeing, so it’s definitely going to make it more likely that you will go to tests and things if your GP knows about it.” [P1, tested] • “[GPs] just don’t know your history. So in regards to this whole GDM, even if they just had a question of ‘Are you concerned about the diabetes that, because you did blood sugar monitoring?’” [P4, not tested] • “I don’t think it would be that helpful to be honest. I think for the actual pregnancy stuff, like the community midwives and the hospital staff are a bit more important.” [P5, tested]
Arranging tests	Card 1: agree Card 2: agree	<ul style="list-style-type: none"> • “Yeah that [card 1] would be quite helpful. Letting you know what’s coming.” [P5, tested] • “To be honest I think they did... they did discuss it with me whilst I was pregnant, so I was fully aware of the importance of taking the test.” and “Well, I’ve never had a reminder I just go, so... yeah, I think that’s important, especially for someone that can be quite forgetful, I can forget so...” [P6, tested] • “That’s [card 2] always good. You get like for cervical smears and things you have reminders, I always found that useful. Just for peace of mind really. I always keep a note but not everyone does I suppose, but it’s nice to know that you’re tallying the same timescale as they are.” [P7, tested]
Combining appointments	Card 8: agree	<ul style="list-style-type: none"> • “If we’re thinking HbA_{1c} at three months, then the babies have their three month jabs don’t they so that would work. I think that would help.” [P7, tested]
Test location	Card 6: agree	<ul style="list-style-type: none"> • “Because it is a blood test that doesn’t really need to be taken at [hospital], it can be taken at any local community clinic and can be sent to [hospital]. That will be a lot easier, especially with a little one and everything else going on” [P2, tested] • “I thought it was the one where we did the sugary drink, so I was full on prepared to be there for the two hours and then I was like, ‘What, I’m going home now?’ Which was nice, obviously, because I could go and eat immediately, but to go all that way just to have a blood test wasn’t great... I was up about five in the morning to get to [hospital] for that time. I was a bit like ‘meh’ afterwards. I think I had a McDonald’s breakfast.” [P1, tested]

(Continues)

TABLE 2 (Continued)

Theme	Overall response	Illustrative quotations
Child-friendly clinics	Card 5: mixed	<ul style="list-style-type: none"> • “I must admit my surgery is a nightmare, they’ve got no toys or anything, so it isn’t fun going with children.” [P6, tested] • “Around here I don’t actually think that’s an issue. I think the surgeries down here are really good on that front.” [P8, tested]
Test used	Card 7: disagree	<ul style="list-style-type: none"> • “It’s still a big chunk of your time. I don’t think any tests are going to be pleasant. I don’t know how you make a test more pleasant.” [P7, tested]
Stopping self-testing	Card 10: mixed	<ul style="list-style-type: none"> • “Just to know what I do now [regarding self-testing]. Is that it? Or even just take my needles away... I don’t know, just do something.” [P4, not tested] • “I think that there should be some more daily blood sugar monitoring... Then you can actually get a feel of what you’re eating and how that affects your blood sugar... directly affects your blood sugar, rather than just putting it onto an average.” [P9, tested]

Overall agreement is based on the authors’ interpretation of the responses. Not all participants were shown each card, and some did not comment, or agreement was unclear. For each quote, we report the participant’s number and whether they had had a postpartum diabetes screening test.

The other participants wanted more opportunities to understand GDM or postpartum testing, although they did not always agree with both suggestions. Some participants wanted to understand the ongoing implications of GDM. Specific questions about the tests were raised, such as whether a FPG test was as informative as an OGTT.

Unawareness of the need for screening was the primary reason that the participants gave for not undergoing postpartum testing, or not anticipating having subsequent tests: “...they just tested me after I had given birth, but since then they’ve not tested me... they didn’t contact me and I just thought it’s normal not to be contacted” [P10, not tested].

3.2 | GP awareness of pregnancy (suggestion card 3)

Some participants thought that their GP knowing more about their pregnancy would improve their postpartum care because GDM could be mentioned at other appointments, which was two participants’ experience. They often linked this to needing more postpartum support—both in general because postpartum care was focussed on the baby, and in relation to blood glucose screening.

However, several disagreed that this would help or thought it would be inappropriate because it was the midwives’ role to manage pregnancy care and not the GPs’ role.

3.3 | Arranging tests (suggestion cards 1 and 2)

The participants were positive about having the postpartum test booked early (at the last pregnancy scan or before): although discussing postpartum follow-up during pregnancy had been a bit surprising, it was not worrying and helped them to know what was coming. It also provided an opportunity for doctors to explain the importance of the tests in advance, which they thought helped them to prioritise it. Other participants arranged their own tests because their midwives regularly reminded them to do so, and another said it was emphasised while she was on the maternity ward. Others thought it would help if “GPs were a lot hotter on it” [P11, not tested].

In general, the participants were eager to be responsible for their own health (e.g. they were keen to set an annual reminder for the test on their phone and “pretend it’s a birthday” [P12, tested]). Nonetheless, they all felt that a reminder from the GP would be useful and could make the biggest difference, including those who questioned whether postpartum interventions would be a suitable use of NHS resources. Several participants explained that this was because life with the baby could be hectic, meaning it could be easy to forget or put screening off. In particular, one participant said, “Because [doctors are] the ones that sent you for the test while you’re pregnant so you assume they have the same responsibility to look after you postpartum as well” [P7, tested]. Additionally, a couple of participants said that annual testing was hard to remember because it was infrequent. They suggested emails, letters,

text messages or a notification in their online GP portal. Several likened it to having a cervical smear test, where a prompt to book the test is sent from the GP.

3.4 | Combining appointments (suggestion card 8)

The participants felt that being able to have their blood test alongside another primary care appointment would ease the burden of *“having an awful lot of appointments just in life”* [P13, tested] and with children generally. This challenge was exacerbated by the long time that it took to leave the house with the newborn and the worries of being out with them.

Participants suggested that testing could coincide with children's vaccinations or the routine 6-week postnatal check-up for mother and baby, and considered that it might increase uptake because they thought most women attend this appointment. They also wanted to discuss the result of their blood test with a clinician to gain extra feedback or advice about managing diabetes risk after GDM.

3.5 | Test location (suggestion card 6)

The participants frequently suggested, or agreed when asked, that testing should be available at a location of their choice. They thought that having blood taken at the GP practice or alternative clinic would facilitate attendance. Travelling to the centre that managed their GDM was often associated with a long journey, higher cost and greater difficulty when taking the baby. Some needed to make alternative arrangements for taking older children to school. Additionally, in the busyness of the early postpartum period, going to the hospital for the blood test did not seem like a worthwhile investment of their time. These difficulties were compounded by needing early morning appointments after fasting (e.g. they had to get up very early because it took a long time to get the baby ready). In contrast, the GP surgery was closer, more accessible and had more availability and flexibility in appointment times.

The two participants who did not agree with this suggestion found it easy to attend either their hospital or GP.

3.6 | Child-friendly clinics (suggestion card 5)

The participants had different experiences of attending appointments with their children, and held differing views towards the suggestion to make waiting areas more child-friendly.

The most common experience was that GP surgeries, which were mentioned more than hospital clinics, were already appropriate. Children's books and toys were valuable. One participant, however, thought that parking facilities and a choice of appointment times could make the appointment more child-friendly than the waiting room.

Other participants were not affected by the suitability of the clinic because they did not take their children along. Some made sure it was at a time when their partner could care for the children or they were at school. One participant said she did this so that she would not be distracted: *“...you might have hundreds [of] thousands of questions in your mind but when you go with your kid you can't ask even one or two”* [P14, tested].

3.7 | Test used (suggestion card 7)

The participants who had attended postpartum screening had had an FPG or HbA_{1c} test. When asked whether a shorter or more pleasant postpartum blood test would make it easier for them to attend, a couple of participants noted how the postpartum FPG or HbA_{1c} was better than the OGTT that was used during pregnancy. However, the majority were indifferent since *“you are jabbed with needles so many times when you are pregnant, one more is really not an issue”* [P8, tested], or it was *“quick and easy”* [P6, tested].

3.8 | Stopping self-testing (suggestion card 10)

Despite mixed views, no participants strongly felt that an inability to do finger prick tests would cause them to favour attending a screening test. Some participants did not want to do any more self-testing: they did not like doing it, so would prefer someone else to do it for them; understood that the formal test was more accurate; or wanted to mark the end of GDM. Alternatively, others wanted the option to monitor their blood glucose postpartum because they were curious to see how different foods affected their blood sugar, now they no longer had GDM.

4 | DISCUSSION

In this study, we explored the views of 20 mothers with recent GDM towards suggestions to facilitate diabetes screening, considering both postpartum and annual testing. All of the participants who were aware of postpartum testing attended because they saw it as an important part of their care; those who had been unaware suggested that

they would have undergone screening if they had been invited. Although it did not prevent attendance, flexibility in the appointment location or time would make it easier to attend. Regardless of screening intention at the start of the interview, the participants anticipated that an invitation from clinicians would facilitate screening.

This study was designed to build on our recent qualitative synthesis.⁸ No studies conducted after the change in NICE guidelines in the United Kingdom were included. We had previously reported that whether the clinicians promoted screening and the process of booking tests had an important influence on women's screening intentions; in this population, awareness was the primary reason that they did or did not attend. There was a range of experiences of arranging tests, highlighting current inconsistencies in healthcare provision and healthcare providers' uncertainty about who is responsible for testing.¹⁵ The participants in our study agreed that invitations would facilitate attendance and gave similar reasons to women in other studies such as reassurance and busyness.

As in previous studies, logistics of the appointment were an issue for some participants in this study. The DAiSiES participants emphasised that morning hospital appointments could be particularly inconvenient due to the challenges of having a young baby and older children that needed taking to school. Morning appointments were required for a FPG test due to an overnight fast, yet the system seemed inflexible given their situation. The FPG or HbA_{1c} test itself was not a major issue affecting attendance. Most studies have reported experiences of postpartum OGTTs, whereas these participants were already benefitting from the new, shorter protocol using FPG or HbA_{1c} tests that was introduced in the United Kingdom in 2015.¹

Our review had found that participants who were concerned about type 2 diabetes tended to attend testing. This view was shared among most of the DAiSiES study participants: they were interested or wanted reassurance that GDM had resolved, and otherwise wanted to initiate type 2 diabetes management. No participants in our study reported deciding not to be tested because they "could not be bothered"¹⁶ or were too scared to find out the result. Feeling tired and overwhelmed seemed to have affected daily activities of diet and exercise more than rare events of attending screening appointments.

4.1 | Strengths and limitations

This study used qualitative interviews to understand participants' own views and experiences towards improving postpartum support. Semi-structured interviews allowed discussion of what participants felt was important, plus

the study design and analysis framework were based on systematic review evidence. We sought participants' own suggestions for support before prompting them with suggestion cards, and gave these data high value in the interpretation. All of the participants' suggestions were similar to the researcher's suggestion cards and reported within the framework.

The participants represented a range of demographics and were recruited from two sites. However, there was higher representation of mothers with graduate/postgraduate degrees than the rest of the United Kingdom,¹⁷ and income level was not recorded. Those with higher socioeconomic status are generally expected to have a better understanding of health risks,¹⁸ yet our study showed that women with a higher or healthcare-related education still had high requirements for support, as did participants who lived with a partner, which could have increased their ability to attend to appointments. Nevertheless, the overall need for support may be even higher in other settings, such as single parents who may have greater requirements for taking children to the appointment, or in women with lower health literacy. Recruitment in different geographical regions and perhaps via children's centres or community groups rather than the hospital may help to engage mothers with different characteristics.

There will have been recruitment bias, with women who are more health conscious or in need of particular support more likely to engage in the study. In particular, most of the participants had attended screening. While there is value in understanding how to make it easier for these women to attend, they are likely to have a different perspective to those who never attended. A similar but different study could recruit only non-attenders in order to gain an in-depth understanding of their requirements.

Furthermore, social desirability bias may have influenced the participants' responses, for example to be wary of criticising their care or show favour towards the suggestion cards. However, the range of responses suggests that this was not often the case. We also used strategies to reduce social desirability bias,¹⁹ such as inviting participants to share what might help someone like them based on their experience. We considered social desirability bias when reflecting on and interpreting the interviews, including other authors with different backgrounds in the process and looking for inconsistencies across the transcripts. However, only one fifth of the transcripts were coded and charted by an additional author, who had not conducted the interviews, which could have led to bias and overlooking concepts in the interpretation. Nevertheless, there was good agreement between the two authors, and the remaining authors were familiar with the transcripts in order to support interpretation.

4.2 | Implications for practice

Ensuring that women with GDM are suitably aware of postpartum diabetes screening to take it up is paramount. This aligns with many of the recommendations that the participants agreed would be acceptable and conducive to screening. Booking the postpartum test at the same time as scheduling the delivery, or being told that they needed to book it at this time, could be effective and promote understanding by revisiting the information. Furthermore, several participants suggested that testing should occur at a more convenient location rather than back at the hospital, perhaps alongside another appointment. Implementing these changes could be a simple, low-resource way of promoting screening.

Notably, annual prompts or invitations for screening should be sent to women with GDM. Previous systematic reviews suggested this as an effective method for increasing uptake.^{20–22} They can be sent from electronic health systems to reduce the burden on administrative staff and are acceptable to clinicians.²³ Furthermore, invitations are routine practice for comparable, infrequent appointments in the United Kingdom (such as cervical screening²⁴ and NHS Health Checks²⁵). Suboptimal attendance at these other appointments has also been reported,^{24,26} including due to lack of awareness.²⁷ Approaches to improve uptake for those checks could be applied to women with GDM. For example, including personalisation and behaviour prompts in letters,²⁵ inviting people face-to-face²⁸ and raising general awareness.²⁷

5 | CONCLUSION

Based on the views and experiences of the participants in this study and the wider literature, future interventions to facilitate the uptake of postpartum diabetes screening would consist of multiple components. These would include additional information about the reasons for screening, the option to book the first postpartum test appointment at the time of delivery, flexibility over whether that first test in particular is in the hospital or their GP practice and annual reminders including personalisation and behaviour prompts. Implementing these changes would require resources that are currently available to other populations being made available to women with GDM, such as reminders to attend annual tests, and investment of clinicians' time to discuss screening. Each of these findings requires further refinement, testing and evaluation.

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CONFLICT OF INTEREST

The authors declare no competing interests.

ETHICAL APPROVAL

This study was approved by the West London and GTAC Research Ethics Committee (reference 19/LO/0441).

ORCID

Rebecca A. Dennison  <https://orcid.org/0000-0002-0847-0723>

Claire L. Meek  <https://orcid.org/0000-0002-4176-8329>

Juliet A. Usher-Smith  <https://orcid.org/0000-0002-8501-2531>

Rachel A. Fox  <https://orcid.org/0000-0002-9841-9760>

Catherine E. Aiken  <https://orcid.org/0000-0002-6510-5626>

Simon J. Griffin  <https://orcid.org/0000-0002-2157-4797>

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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