

Perceived Barriers to Timely Postpartum Screening of Women with Gestational Diabetes Mellitus (GDM) A Qualitative Study

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Timely postpartum screening for diabetes following a pregnancy with gestational diabetes mellitus (GDM) is crucial to reduce the future risk of incidence of diabetes. This study explored barriers to timely postpartum screening for diabetes mellitus after a pregnancy with GDM, by assessing the concerned women's views and perceptions.

Data for this study pertains to fifteen respondents from among participants in a larger cross-sectional survey conducted in Malappuram District of Kerala among women affected with GDM during a recent pregnancy. The selection was based on detailed responses to open-ended questions asked in the quantitative study. The responses were transcribed and deductively coded. The findings were organized around major themes.

We identified five main areas of barriers in the management of diabetes during pregnancy. These were a) inadequate instructions from the healthcare provider who attended the pregnancy and delivery; health services related barriers; perceived difficulties of the oral-glucose-tolerance-test; lack of time owing to multiple roles as mothers and home-maker; and postponing the screening but unable to specify a reason for it. Of these, health-provider and services -related barriers and lack of time owing to multiple responsibilities were the most often- stated barriers. Participants had a general awareness of possible complications following GDM in pregnancy but often could not name specific effects on the woman or child during and after the GDM pregnancy. A majority of the participants were unaware of their elevated risk of developing Type 2 Diabetes Mellitus.

The barriers to postpartum screening identified in this study could help planning programmes to assist women in achieving timely postnatal screening for Type-2 Diabetes Mellitus.

Keywords : Gestational diabetes mellitus, postpartum diabetes screening for T2DM , Oral-glucose tolerance-test, procrastination.

Indians are living through a period of unprecedented economic inequality in more than a century, and this is largely true for most countries of the world. In 2017, 73 per cent of the wealth generated in India went to the top 1 per cent of the population, while the poorest 50 per cent were able to corner only 1 per cent. We as a country boast of having 101 billionaires, while 224 million people live below the poverty line of US\$ 1.90 per day (Oxfam International, 2018).

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Gestational Diabetes Mellitus (GDM) is defined as the degree of glucose intolerance with onset or first recognition during pregnancy. According to the 2015 estimates of the International Diabetic Federation (IDF), globally 16.2 per cent of women with live births had some form of hyperglycemia in pregnancy and GDM accounted for 85.1 per cent out of this (International Diabetic Federation [IDF], 2015). In a systematic review of 28 epidemiological studies published between January 1961 and August 2001, with follow up times ranging from 6 weeks to 28 years after a pregnancy with GDM, the cumulative incidence of Type 2 Diabetes Mellitus (T2DM) after the index pregnancy ranged from 2.6 per cent to 70 per cent (Bellamy, Casas, Hingorani, & Williams, 2009). The maximum incidence was during the first five years after delivery, and the incidence appeared to plateau after ten years (Kim, Newton, & Knopp, 2002). But no standard GDM management protocol is being followed in India (Seshaiah, 2015).

An oral glucose tolerance test at 6-12 week postpartum in women with GDM is recommended by the American Diabetes Association (American Diabetic Association [ADA], 2013). Timely postpartum screening (i.e. between 6-12 weeks) and follow-up of women affected by GDM will help to prevent progression to Type 2 Diabetes Mellitus (Blatt, Nakamoto, & Kaufman, 2011). The onset of diabetes among women with a history of GDM can be delayed or prevented through lifestyle modifications (Buchanan & Page, 2011). Hence to modify natural history and reduce the risk of future T2DM, routine postpartum screening of women with GDM is necessary (Case, Willoughby, Haley-Zitlin, & Maybee, 2006).

Globally, postpartum screening rates for T2DM, of women who experienced GDM in the most recent pregnancy, are reported to be 50 per cent or lower (Kwong, Mitchell, Senior, & Chik, 2009). According to various studies, postpartum screening rate for diabetes in Indian women with a history of GDM ranged from 18 per cent to 57 per cent (Seshiah, 2015). In the Malappuram district Kerala, the comparable screening rate was only 29 per cent among the GDM women in (Sakeena, 2016).

The attendance rate of women for postpartum screening is very low the world-over, and ranges from 18 per cent to 57 per cent (Chamberlain, McLean, Oldenburg, Mein, & Wolfe, 2015). The reasons for low-rates of screening are unclear, and the majority of studies are from high-income countries. Besides, there are few qualitative studies that explore the experiences of women with previous GDM that delve into obstacles faced by women to postpartum screening for T2DM.

The objective of this study was to explore the barriers to postpartum screening for diabetes faced by women diagnosed with GDM, in the Malappuram district of Kerala through a qualitative investigation with the concerned women. The purpose was to obtain insights that could inform the development of interventions to improve the postpartum T2DM screening rates of GDM-affected-women.

Methods

Data for this paper is drawn from a larger cross-sectional survey of mothers with a history of gestational diabetes mellitus in Malappuram district of Kerala on postpartum screening for T2DM (Sakeena, 2016, Sakeena & Ravindran, 2017). Ethical approval was obtained from Sree Chitra Tirunal Institute for Medical Science and Technology, Trivandrum, Kerala (IEC Ref No: SCT/IEC/913/May 2016).

The interview schedule for the cross-sectional survey included a number of open-ended questions and recorded verbatim the responses by women. These included:

- a) Please explain your experience of the postpartum period as a GDM mother? (overall wellness, breast feeding, diet, emotional status)
- b) Did you get any specific instruction about postpartum screening for diabetes from any of your health care providers? If yes, what were you told?
- c) (If the woman had said that she did not undergo postpartum screening) What are the main difficulties you experienced to go to a laboratory for doing postpartum screening for diabetes?

The author conducted these interviews during 2016 and lasted between 42 and 92 minutes. They were digitally recorded with permission from interviewees. Written informed consent was obtained from all interviewees.

From this larger sample, we purposively selected responses by 15 women, in such a manner as to have representation from diverse socioeconomic backgrounds and from among those who had delivered in private and public health care settings respectively.

Interviews were transcribed verbatim and checked for accuracy. Deductive coding was undertaken keeping in view the objective of identifying obstacles and barriers to postpartum diabetes screening by women. A priori themes had been identified from the quantitative study, and we added to these, as new themes emerged from our codes. In the findings below we present quotes to illustrate our themes.

Results

Out of the 15 women whose responses were included in this study, six (40 per cent) were multiparas with more than three children, and above 30 years of age. Five women (33 per cent) had two or three children and 21-25 years of age, and three (20 per cent) women had one child and belonged to the same age group. One woman was less than 20 years old and had delivered her first child. Eleven of 15 women were wives of men who worked in 'Gulf' countries and were effectively the heads of their households.

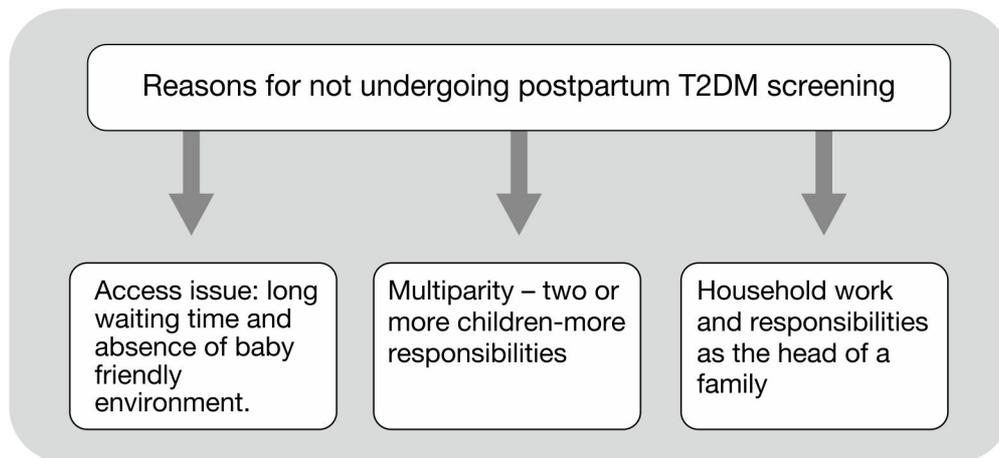
Five themes emerged from the coding of the transcripts. These were: inadequate instructions from the healthcare provider who attended the pregnancy and delivery; health services related barriers; perceived difficulties of the oral-glucose-tolerance-test; lack of time owing to multiple roles as mothers and home-maker; and postponing the screening but unable to specify a reason for it. Of these, health-provider and services -related barriers and lack of time owing to multiple responsibilities were the most often- stated barriers.

Inadequate instructions from the healthcare provider attending pregnancy and delivery:

According to the women, they did not often receive specific instructions from their attending-obstetrician on the consequences of GDM. A majority of the women were informed by the providers that GDM would subside after delivery. They were told about postpartum screening for T2DM only at the time of discharge from the health facility after child delivery, without an explanation as to why they had to undergo the test. Participants stated that they were not told that due to their history of GDM, they were at a higher risk of diabetes mellitus in the future. They knew that they had a

postpartum follow-up visit scheduled with their obstetrician and thought of the screening as merely another test that the doctor had prescribed. According to one of the women: “The doctor didn’t tell me these things (that you may develop diabetes later on) ... She only told me that my gestational diabetes would subside after the delivery.”

Figure 1: A Priori Thematic Framework Adopted



Barriers related to health services

Postpartum screening was rendered difficult by a number of health services-related barriers. One of these was the long queues and waiting time.

“In the mornings, nearly 30-40 patients will be waiting for the lab test in the laboratory nearby. For me, it is difficult to wait outside the laboratory for that long, especially with the baby.”

The absence of a baby-friendly environment in the diagnostic centres and in health facilities, with no spaces or a room with privacy for breastfeeding, made the screening a difficult task.

The lack of breastfeeding facilities become especially challenging when the diagnostic centre is not close by:

“It takes nearly 1 hour to reach the laboratory. After that, I have to wait with the baby ... the baby gets restless. There are no private rooms to feed the baby in the lab.”

One of the participants told us that she was planning to get tested only after she had begun to wean her baby because of these difficulties. Leaving the baby behind at home to go for the screening, is not an option for many mothers who have no one who will take care of the newborn.

Perceived difficulties with the oral-glucose tolerance-test

For some of the women, the testing process was a dissuader. For example, one woman said that she was nauseated by the sweet solution that she had to consume and having to wait for a further two hours on an empty stomach was unthinkable. Another woman was afraid of the needle puncture.

“I thought that the TT (tetanus toxoid) injection, needle puncture for IV (intra-venous) drips and all that would be over after the birth of my baby. I don’t want to repeat all these painful procedures for the sake of screening for blood sugar.”

Lack of time owing to multiple roles as mothers and homemakers

A substantial proportion of GDM-affected women in the study area had husbands working abroad, mainly in countries of the Gulf. The women had to look after the spouse’s elderly parents and shoulder all the family responsibilities. One of the participants said

“My husband is an electrician in Oman. He has a 62-year-old father and 59-year-old bed-ridden mother. I have to do all the household work and take care of the baby, when my older children are away in school. No time in a day to go to the lab for screening.”

According to another woman with four children,

“My first pregnancy was the biggest celebration ever in my life. But for subsequent pregnancies, there is nobody to take care of my older children. So immediately after the delivery, I have to get back to my familial responsibilities as a caretaker of my baby, a nurse for my aging parents, a caring father as well as loving mother of my older children, domestic worker and finally financial manager of the family (handling the bank account to which my Gulf-employed husband sends money).”

Even those who were aware of the importance of screening and wanted it done, could not find the time to get screened.

For example, a woman with three children told us that she was aware of the need for postpartum screening for diabetes and of her higher risk for T2DM. She was unwell and had to be on bed rest at home for the first three months after delivery. With her routine household tasks and care of her small baby, and also having to look after the older school-going children, she found it difficult to find time to go out and check for blood-sugar.

Another woman, a teacher in a private English Medium school, and a mother of two children, wished to undergo the lab investigation.

“I conduct home tuitions for English and Social Sciences at 5 PM evening every five days of a week. I need to leave home for work at 8 am, after cooking breakfast for my children and mother-in-law, and also have to drop out my elder one in the Kindergarten. When will I get the time to do the lab investigations? My husband who works abroad brought a glucometer. My elder one damaged it.”

It seemed to us that not going for postpartum T2DM screening was not just a matter of lack of time due to multiple roles, but also the tendency to consider their own needs to be of a lower priority. One respondent said this explicitly:

“I am a mother. I should give priority to my family’s needs. Only then can I think of my needs. That is the beauty of being a mother. I have an option to postpone my needs, but I cannot neglect my children. My mother taught me like that.”

Postponing screening but unable to specify a reason

Some mothers could not explain the exact reason why they failed to go for postpartum screening for diabetes. One of the women said that she was aware of the consequences of failing to undergo screening and often worried about it. Another woman told us

“They prescribed me a blood test after my second delivery ... I am thinking about that, but haven’t gone. I keep thinking I will go.”

So here we can see the gap between intention and action.

Discussion and Conclusions

Among women with a history of GDM, timely screening and follow up were delayed owing to both, service delivery-related reasons and internalized gender roles. Our findings having a great deal of similarity to those by Rafii, Rahimparvar, Mehrdad and Keramat, (2017a) among Iranian women with a history of GDM.

Not receiving adequate guidance from the obstetrician about the importance of postpartum diabetes screening was an important reason for failure to go for screening among our study participants. Previous studies from India and elsewhere, have observed the same (Shah, Lipscombe, Feig, & Lowe, 2010, Kim et al., 2006, Tandon, Gupta, & Kalra, 2015). Seshiah (2015) suggested that there was an opportunity to carry out postpartum screening when the mothers attended health facilities for immunization of their babies. The vast majority of our participants revisited the hospital where they had delivered the baby, for getting their babies vaccinated. However, this again was a missed opportunity for carrying out screening for T2DM. Education of healthcare providers, especially obstetricians, on guidelines for postpartum screening and ensuring the implementation of these guidelines would go a long way towards improving timely postpartum screening rates.

In the absence of clear instructions from the treating obstetrician, women believed that the problem had been resolved once the baby was delivered. Although a majority reported symptoms of pain, myalgia, backache, fatigue, they believed these to be an after-effect of delivery and it did not occur to them that some of these may be symptoms of uncontrolled blood glucose level. It is therefore very important to provide information to women experiencing GDM on the signs and symptoms of uncontrolled blood glucose levels in the postpartum period, on experiencing which, they should seek medical attention.

Even though laboratories were available in the urban and semi-urban areas in the study district, access to laboratory services was constrained. The lack of a baby-friendly environment with privacy for breastfeeding in health facilities as well as in stand-alone laboratories is a significant barrier. Also, mothers with newborns could be triaged to be tested as soon as they arrive, rather than wait in a long queue along with others. These are simple measures that do not involve significant additional costs.

Another major barrier to postpartum screening for diabetes was women’s heavy workload and absence of childcare support. Mothers whose husbands are employed in gulf countries faced many additional barriers. They had no one to lend a hand with the burden of day to day responsibilities, no one to consult regarding their healthcare needs, and no one to share their concerns and feelings with. Balancing the household budget within the monthly transfers received from their husbands was also a challenge. The vast majority of the mothers we interviewed had their husbands living abroad and appeared to be feeling alone and stressed.

A combination of limited understanding about the health problem and too many demands on their time and energy appeared to lead to a situation where there was a huge gap between intention to undergo screening and acting to make this happen. This gap was termed ‘procrastination’ in a study from Iran, which identifies this as the major underlying barrier to timely postpartum screening for diabetes (Rafii et al., 2017b). A meta-synthesis on barriers to breast-cancer screening also reported procrastination as an important factor that deterred women from availing breast-cancer screening (Azami-Aghdash et al., 2015).

In addition to interventions such as health-provider education; facilities for breast-feeding and triaging to give priority to mothers with newborns in diagnostic centres and health facilities, the following are a few simple steps that the public health services could take, to prevent the failure by women with a history of GDM to undergo timely postpartum screening for T2DM.

The Accredited Social Health Activist or ASHA could, during their routine postpartum visits, inform women with a history of GDM on the importance of postpartum screening for T2DM, and also send them reminders to ensure that the women undergo timely screening. The ASHA would be best-placed to follow-up subsequently to find out about the results of the test and action to be taken, and also advise and provide support on diet, physical activity and breast-feeding. A family-centred approach may be adopted to increase the family’s awareness on the need for follow-up care and routine monitoring following a GDM- pregnancy. The test and subsequent follow-up could be Primary Health Centre-based, rather than based in the secondary or tertiary public or private health facility, so as to be cost-effective and to minimize loss to follow-up.

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References

- American Diabetes Association. (2013). Standards of Medical Care in Diabetes—2013. *Diabetes Care*, 36(Supplement 1), S11–S66.
- Azami-Aghdash, S., M. Ghojzadeh, S. G. Sheyklo, A. Daemi, K. Kolahdouzan, M. Mohseni, A. Moosavi. (2015). Breast Cancer Screening Barriers from the Womans Perspective: a Meta-synthesis. *Asian Pacific Journal of Cancer Prevention*, 16(8), 3463-3471.
- Bellamy, L., J. P. Casas, A. D. Hingorán & D. Williams. (2009). Type 2 diabetes mellitus after gestational diabetes: a systematic review and meta-analysis. *The Lancet*, 373(9677), 1773–1779.
- Blatt, A.J., J. M. Nakamoto, & H. W. Kaufman. (2011). Gaps in diabetes screening during pregnancy and postpartum. *Obstetrics and Gynecology*, 117(1), 61–68.
- Buchanan, T. A. & K. A. Page. (2011). Approach to the patient with gestational diabetes after delivery. *The Journal of Clinical Endocrinology and Metabolism*, 96(12), 3592–3598.
- Case, J., D. Willoughby., V. Haley-Zitlin, & P. Maybee. (2006). Preventing type 2 diabetes after gestational diabetes, *The Diabetes Educator*, 32(6), 877–886.
- Chamberlain, C. F. B., A. McLean, B. Oldenburg, J. Mein, & R. Wolfe. (2015). Association with low rates of postpartum glucose screening after gestational diabetes among indigenous and non-indigenous Australian women. *Australian and New Zealand Journal of Public Health*, 39(1), 69–76.

- International Diabetes Federation. (2015). IDF Diabetes Atlas. Seventh Edition. Brussels, International Diabetes Foundation.
- Kim, C., K. M. Newton, & R. H. Knopp. (2002). Gestational diabetes and the Incidence of Type 2 diabetes a systematic review. *Diabetes Care*, 25(10), 1862–1868.
- Kim, C., B.P. Tabaei, R. Burke, L. N. McEwen, R. W. Lash, R. S.L.Johnson,W. H. Herman. (2006). Missed opportunities for type 2 diabetes mellitus screening among women with a history of gestational diabetes mellitus. *American Journal of Public Health*, 96(9), 1643–1648.
- Kwong, S., E. A. Mitchell. P. A. Senior. & C .L. Chik. (2009). Postpartum diabetes screening: adherence rate and the performance of fasting plasma glucose versus oral glucose tolerance test. *Diabetes Care*, 32(12): 2242–2244.
- Rafii, F., S. F. V. Rahimparvar, N. Mehrdad, & A. Keramat. (2017a). Barriers to postpartum screening for type 2 diabetes: a qualitative study of women with previous gestational diabetes. *Pan African Medical Journal*, 26, 54. doi: 10.11604/pamj.2017.26.54.11433.
- Rafii, F., S. F. V. Rahimparvar, A. Keramat, & N. Mehrdad. (2017b). Procrastination as a Key Factor in Postpartum Screening for Diabetes: A Qualitative Study of Iranian Women with Recent Gestational Diabetes. *Iranian Red Crescent Medical Journal*, 19(5), e44833. doi: 10.5812/ircmj.44833
- Sakeena, K. (2016). Patterns of and Factors Associated with Postpartum Diabetes Screening in Women Diagnosed with Gestational Diabetes Mellitus in Malappuram District (MPH dissertation). Retrieved from SCTIMST e library Database (Accession no.21765)
- Sakeena, K. & T. K. S. Ravindran (2017). The “missing window of opportunity” for preventing diabetes: A mixed method study on postpartum screening for diabetes among women with gestational diabetes mellitus in Kerala, India. *International Journal of Noncommunicable Diseases*, 2, 78-84.
- Seshiah, V. (2015). Postpartum screening after gestational diabetes mellitus: Aiming for universal coverage. *Indian Journal of Endocrinology and Metabolism*, 19(3), 435 (letter).
- Shah, B. R., L. L. Lipscombe, D. S. Feig, & J. M. Lowe,. (2011). Missed opportunities for type 2 diabetes testing following gestational diabetes: A population-based cohort study. *British Journal of Obstetrics and Gynaecology*, 118(2),1484–1490.
- Tandon, N., Y. Gupta, & S. Kalra. (2015). Postpartum screening after gestational diabetes mellitus: Aiming for universal coverage. *Indian Journal of Endocrinology and Metabolism*, 19(1), 1-4. doi: 10.4103/2230-8210.144634.