



Contents available at ScienceDirect

Diabetes Research  
and Clinical Practice

journal homepage: [www.elsevier.com/locate/diabres](http://www.elsevier.com/locate/diabres)



International  
Diabetes  
Federation



# Readiness for diabetes prevention and barriers to lifestyle change in women with a history of gestational diabetes mellitus: Rationale and study design

Lorraine L. Lipscombe<sup>a,b,c,1,\*</sup>, Ananya Tina Banerjee<sup>a</sup>,  
Sarah McTavish<sup>a</sup>, Geetha Mukerji<sup>a,b</sup>, Julia Lowe<sup>b,d</sup>, Joel Ray<sup>b,c,e,f</sup>,  
Marilyn Evans<sup>g</sup>, Denice S. Feig<sup>b,c,h,i</sup>

<sup>a</sup> Women's College Research Institute, Women's College Hospital, 76 Grenville St., Toronto, ON, Canada M5G 1N8

<sup>b</sup> Department of Medicine, University of Toronto, 1 King's College Circle, Toronto, ON, Canada M5S 1A8

<sup>c</sup> Institute of Health Policy, Management and Evaluation, University of Toronto, 155 College St. Suite 425, Toronto, ON, Canada M5T 3M6

<sup>d</sup> Division of Endocrinology and Metabolism, Sunnybrook Health Sciences Centre, 2075 Bayview Ave, Toronto, ON, Canada M4N 3M5

<sup>e</sup> Division of Endocrinology and Metabolism, St. Michael's Hospital, 61 Queen St. East, Toronto, ON, Canada, M5C 2T2

<sup>f</sup> Keenan Research Centre of the Li Ka Shing Knowledge Institute, St. Michael's Hospital, 30 Bond Street, Toronto, ON, Canada, M5B 1W8

<sup>g</sup> Faculty of Health Sciences, Western University, Arthur and Sonia Labatt Health Sciences Building, London, ON, Canada N6A 5B9

<sup>h</sup> Division of Endocrinology, Mount Sinai Hospital, 60 Murray Street, Toronto, ON, Canada, M5T 3L9

<sup>i</sup> Department of Obstetrics and Gynecology, University of Toronto, 123 Edward Street, Toronto, ON, Canada, M5G 1E2

## ARTICLE INFO

### Article history:

Received 29 December 2013

Received in revised form

27 March 2014

Accepted 20 July 2014

Available online 26 July 2014

### Keywords:

Gestational diabetes mellitus

Stage of readiness for lifestyle

change

Barriers

Diabetes prevention

## ABSTRACT

**Aims:** Women with gestational diabetes mellitus (GDM) have a high risk of future diabetes, which can be prevented with lifestyle modification. Prior diabetes prevention programmes in this population have been limited by lack of adherence. The aim of this study is to evaluate readiness for behaviour change at different time points after GDM diagnosis and identify barriers and facilitators, to inform a lifestyle modification programme specifically designed for this group. The objective of this paper is to present the rationale and methodological design of this study.

**Methods:** The ongoing prospective cohort study has recruited a multi-ethnic cohort of 1353 women with GDM from 7 Ontario, Canada hospitals during their pregnancy. A questionnaire was developed to evaluate stage of readiness for behaviour change, and sociodemographic, psychosocial, and clinical predictors of healthy diet and physical activity. Thus far, 960 women (71%) have completed a baseline survey prior to delivery. Prospective postpartum follow-up is ongoing. We are surveying women at 2 time-points after delivery: 3–12 months postpartum, and 13–24 months postpartum. Survey data will be linked to health care

\* Corresponding author at: Women's College Hospital, Women's College Research Institute, 790 Bay Street, Room 741, Toronto, ON, Canada M5G 1N8. Tel.: +416 351 3732x3701.

E-mail address: [Lorraine.lipscombe@wchospital.ca](mailto:Lorraine.lipscombe@wchospital.ca) (L.L. Lipscombe).

<sup>1</sup> Supported by the Canadian Institutes of Health Research New Investigator Award.

<http://dx.doi.org/10.1016/j.diabres.2014.07.019>

0168-8227/© 2014 Elsevier Ireland Ltd. All rights reserved.

administrative databases for long-term follow-up for diabetes. Qualitative interviews were conducted in a subset of women to gain a deeper understanding of barriers and facilitators to lifestyle change.

**Conclusions:** Our study is a fundamental first step in effectively addressing diabetes prevention in women with GDM. Our findings will aid in the design of a diabetes prevention intervention specifically targeted to women with recent GDM, which can then be evaluated in a clinical trial.

© 2014 Elsevier Ireland Ltd. All rights reserved.

## 1. Introduction

Gestational diabetes mellitus (GDM) is defined as carbohydrate intolerance diagnosed or first recognised in pregnancy, and it affects between 2% and 7% of pregnant women [1]. Although 90% of gestational diabetes cases resolve after delivery [2], GDM is an early marker of diabetes susceptibility [2,3]. Women with previous GDM have a seven-fold higher risk of diabetes than women without GDM and almost 20% develop diabetes within nine years after delivery [1,2,4]. Thus, women with GDM represent a growing population of young women at elevated risk for diabetes, for whom interventions to reduce diabetes can be offered.

There is Level 1 evidence that diabetes can be prevented with lifestyle modification in high-risk populations [5,6]. To help reduce the risk of diabetes in women with GDM, guidelines recommend that all women with GDM be counselled regarding lifestyle modification, including dietary changes and increased physical activity [7,8]. However, there is limited evidence regarding the effectiveness of lifestyle modification in women with recent GDM. Three lifestyle trials in this population have been published, which have demonstrated limited benefit on metabolic outcomes [9–11]. The lack of benefits may be partly because of low adherence rates and failure to produce meaningful behaviour change. The larger DEBI trial evaluated the benefits of a telephone-based diet, exercise and breastfeeding intervention on postpartum weight loss in 197 women [11]. While retention in that study was high, differences in weight loss between the intervention and control arms were modest. Indeed, exercise rates did not differ between groups and women reported many barriers such as child care, low family support, and return to work [11]. Although lifestyle modification programmes have been shown to be effective in preventing diabetes in older populations, interventions in women with recent GDM may need to be adapted to address their unique barriers to behaviour change in order to optimise adherence.

Evidence supports the notion that new mothers in general have difficulty maintaining a health-promoting lifestyle. Women of all ages are less physically active than men [12] and mothers of young children have the lowest rates of exercise [13]. New mothers may face several psychosocial barriers to achieving and maintaining a healthy lifestyle. Studies have shown that postpartum women report difficulty adopting a healthy lifestyle because of lack of time [9,14,15], lack of child care [14,16], low social/family support [14,15,17,18], and low self-efficacy [14]. In addition, new mothers may not be ready to make lifestyle changes in the

postpartum period when child rearing responsibilities become a priority [19]. Only one small cross-sectional study has examined readiness for lifestyle change specifically in women with GDM, and found that most women were in a ‘pre-action’ stage of change in the first postpartum year [20]. They may be more ready to make changes at a later stage, once the demands of new motherhood subside and they have reached a more stable lifestyle.

Women with GDM are more likely to have obesity and lower activity rates pre-pregnancy than those without GDM [21], and may face additional socio-cultural barriers to lifestyle modification [22]. Studies have shown that less than half of women with recent GDM engage in sufficient physical activity [14] or report adequate fruit and vegetable consumption [23]. Less than 30% of women with GDM identified themselves at high risk of future diabetes [24,25]. One study found that those women with greater risk perception were more likely to modify their behaviour [24]. Certain ethnic groups are also disproportionately affected by GDM and have higher rates of glucose intolerance following pregnancy [26]. A recent Canadian study showed that the age-adjusted prevalence of GDM was 41% higher among Chinese women and 145% higher among South Asians compared with other Canadian women [3]. Ethnic minority women may face additional challenges to behavioural change. Research has shown that ethnic women, particularly those of Afro-Caribbean and Latino origin in the United States, are less physically active and more reluctant to change their diet upon having a diagnosis of GDM [27]. South Asian women also exhibit lower levels of physical activity and less healthy dietary choices compared to the general population [28].

Given that a significant number of women with GDM progress to diabetes within the first decade after delivery [2], early intervention is crucial for the prevention of diabetes. However, a better understanding of the barriers to behaviour change during the postpartum period is needed to inform the development of lifestyle interventions. Identifying the stage of readiness for lifestyle change at different time-points is particularly important, in order to develop counselling strategies that will optimise adherence [20]. Before being ready to make lifestyle changes, women also need to know the risk factors for diabetes, perceive themselves as being “high risk”, and understand the lifestyle changes that they need to make. Women also need to have resources, motivation, self-efficacy, and support to initiate and maintain lifestyle changes. Our lack of understanding of the factors associated with diabetes prevention practices in women with recent GDM remains an obstacle to appropriate and focused preventive postpartum care.

Download English Version:

<https://daneshyari.com/en/article/2796630>

Download Persian Version:

<https://daneshyari.com/article/2796630>

[Daneshyari.com](https://daneshyari.com)