



Case study

Barriers and coping strategies of women with gestational diabetes to follow dietary advice



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ABSTRACT

Objective: To understand barriers and coping strategies of women with gestational diabetes (GDM) to follow dietary advice.

Design: Qualitative study.

Participants: Thirty women with GDM from the Winnipeg area participated. Each participant completed a Food Choice Map (FCM) semi-structured interview and a demographic questionnaire.

Major outcome measures: Underlying beliefs of women with GDM and factors that hinder following dietary advice.

Analysis: Qualitative data analyzed using constant comparative method to identify emergent themes of factors and beliefs that affected following dietary advice. Themes were categorized within the Integrative Model of Behavioral Prediction.

Results: GDM women faced challenges and barriers when (1) personal food preference conflicted with dietary advice; (2) eating in different social environments where food choice and portions were out of control and food choice decisions were affected by social norms; (3) lack of knowledge and skills in dietary management and lack of a tailored dietary plan.

Conclusions and implications: Quick adaptation to dietary management in a short time period created challenges for women with GDM. Stress and anxiety were reported when women talked about following dietary advice. Tailored educational and mental health consultation with consideration of the barriers may promote dietary compliance and overall better health.

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1. Introduction

Gestational diabetes mellitus (GDM) is defined as glucose intolerance with onset or first recognition during pregnancy.¹ In Canada, the prevalence of GDM varies from a range of 3.5–3.8% in the non-Aboriginal population to a range of 8–18% in Aboriginal populations.^{2,3} Treatment of GDM has shown to improve maternal and neonatal outcomes.^{4,5} Risk reduction requires extensive behavioral and self-care modifications, which can include strict dietary regulations, possible insulin injections, frequent blood glucose monitoring, and increased visits to healthcare providers for maternal and fetal surveillance.⁶ Treatment of GDM must begin immediately after the diagnosis. It is recommended that women

with a diagnosis of GDM be referred to a registered dietitian for individual nutrition consultation.⁶ However, managing diabetes in pregnancy can be challenging, especially for women with no previous experience with diabetes but need to meet the blood glucose target within a limited period of time. Previous studies have reported that women with diabetes during pregnancy felt a sense of decreased control and frustration about their condition.^{7–9} Following dietary advice has been considered a major challenge in GDM management.^{10,11} However, there still are research gaps on: (1) what specific barriers are related to dietary management in women with first time diagnoses of GDM; (2) what beliefs and factors caused these barriers; and (3) how do women cope when they encounter barriers in dietary management.

This study was intended to address the above questions. The results will provide a better understanding of the barriers to following dietary advice that women with GDM might encounter, and how they coped when presented with dietary challenges. This may enhance our understanding of the target population so that

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dietary management education would be meaningful and client-centered.

2. Methods

2.1. Study design

This study used a qualitative approach. In-depth interviews provide the means for the participants to freely express their experiences and ideas in their own words. It is an effective way to identify factors that are relevant to a particular health behavior in a population under investigation.¹² An in-depth interview that could both record a complete eating pattern and also provide opportunities to explore reasons for food decision making was favored in obtaining the data for this study. The Food Choice Map (FCM) is a semi-structured in-depth interview method that was used to understand a participant's weekly eating pattern and meanings of the eating pattern.^{13–15} It uses food to start the conversation and it helps the researcher to explore meanings behind eating behaviors.

The FCM interview tool consists of a board to record food frequency and meal/snack time in a regular week, and food picture stickers from common food groups that could represent 9100 different foods. The participant placed the food pictures that represent the foods consumed in a week on the food map board. The dynamic of building this weekly food pattern allows opportunities to explore hidden reasons behind food behaviors. The advantage of using the FCM interview is that it collects a whole week eating pattern. It provides the opportunity for the woman to discuss any food that was important to her in the context of dietary management without forgetting any food by chance. This kind of data collection has been validated to collect accurate, reliable, and rich qualitative data when collecting information on eating behaviors.^{13,15,16}

A semi-structured interview guide ([Appendix 1](#)) was developed by the first author with probes on reasons for food decision making in following dietary advice. Through the FCM interview, a woman's experience on dietary management was explored by discussing reasons of her food decisions. Any encountered barriers during dietary management were explored spontaneously.

The Integrative Model of Behavioral Prediction¹⁷ was used to guide the interpretation of the interview data. The Integrative Model of Behavioral Prediction has been used in qualitative research in the past to explore risk factors for excessive gestational weight gain in low-income women.¹⁸ This model suggests that an individual's behavior change can be predicted by the intention for such a change, which could be influenced by a set of beliefs that the individual holds. These beliefs are: behavioral beliefs and outcome evaluations (what outcomes will come with the behavioral change), normative beliefs (the perception of how other people think of what the individual should or should not do) and efficacy beliefs (believe that one can perform a certain task (self-efficacy)). Skills and environmental constraints are two other important factors for a behavioral change to happen. A behavioral change is unlikely to happen if the person lacks skills or encounters environmental constraints, even if the person has intentions for the behavioral change.

2.2. Sample selection and recruitment

Thirty participants were purposively recruited from a general hospital outpatient endocrinology clinic that receives GDM referrals from all over Manitoba.

Upon the approval from the University Research Ethics Committee and the hospital research ethics review board, the researcher posted a recruitment flyer in the clinic. Respondents who were interested in the study contacted the researcher to set up an

appointment and to complete the study consent form and a research interview. The inclusion criteria were: (1) lived in Winnipeg and surrounding communities but worked and did grocery shopping in Winnipeg; (2) attended at least one education session with a registered dietitian after diagnosis of GDM; (3) able to communicate in English and were not visually impaired (were able to complete the FCM, the consent, and the demographic questionnaire); and (4) had not been previously diagnosed with GDM.

Thirty women were recruited and interviewed by the first author at the participants' homes during May 2011 to February 2012. These participants were diagnosed with GDM at 24–28 gestational weeks following the Canadian Diabetes Association Clinical Practice Guidelines (ref). All the participants received dietary consultation from a dietitian during their first visit to the endocrinology clinic. Dietary follow-ups varied from weekly to bi-weekly. All participants had received dietary consultation and were practicing dietary management at the time of interview. A Thank You card with a \$20 grocery gift card was given to the participant after the interview.

2.3. Data analysis and interpretation

All the interviews were recorded using a digital recorder and were verbatim transcribed and imported into NVivo 9 qualitative data analysis software¹⁹ for thematic analysis by the first author. Important steps of the analysis were: (1) ongoing coding of all information in transcripts as recruitment and interview progressed; (2) revising codes and recoding previous data as analysis progressed; (3) discovering similarities and differences among the participants through constantly comparing and contrasting the data; and (4) categorizing codes into themes.^{20,21} Themes on barrier experiences of following dietary advice were identified. Underlying beliefs that affected following dietary advice were also identified and categorized within the Integrative Model of Behavioral Prediction.¹⁷

Verbatim quotes that were selected for presentation are good illustrations of the identified themes. Steps were taken to corroborate study findings, a concept in qualitative research similar to reliability and validity in quantitative research.²² These included: (1) transcripts were reviewed by the participants to verify the interview conversation; (2) data transcription and data analysis occurred concurrently during data collection to ensure sample saturation; (3) use of an independent investigator outside the research study to code four transcripts to achieve high kappa scores (90–95% on code comparison), (4) systematic checking of themes against supporting quotations, and (5) independent review of transcripts, categories, frequency tables, and themes by the second and third author who had experiences in qualitative research. Any disagreements were discussed and data and analysis rechecked until agreement was achieved.

Demographic data collected from the questionnaire were used to describe the sample population.

3. Results

All participants were interviewed at 26–38 gestational weeks (median 36). Theoretical saturation was reached with this sample size. The majority of the women had an above normal pre-pregnancy weight (BMI ≥ 25 , [Table 1](#)), were married and employed. Eighty percent of the participants had at least a college education. Fifty-three percent of the participants were Caucasian and the rest were Asian, African, and Aboriginal. All the participants were diagnosed with GDM for the first time. Forty-three percent of the participants received insulin treatment at the time of the interview. No participant used oral agents for GDM treatment.

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