

# The symbolic dimension of prenatal nutrition care in diabetes *Mellitus*

## *A dimensão simbólica do cuidado nutricional pré-natal em diabetes Mellitus*

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### ABSTRACT

#### Objective

Aimed at analysing the symbolic dimension of prenatal nutritional care in diabetes.

#### Methods

Participants were 17 puerperal adults diagnosed with previous or gestational diabetes. Participant observation and semi-structured interviews were conducted to collect data. The data were interpreted according to an adaptation of Bardin's Thematic Content Analysis.

#### Results

The main meaning of diabetes was the need for changing eating habits. Nutritional care based on the Traditional Method or the Carbohydrate Counting Method was understood as an opportunity for dietary re-education. Weight loss was considered desirable by some participants, albeit against the advice of nutritionists. Pregnant women adopted the standard meal plan, rarely used the food substitution list, and reported occasional dietary transgressions, self-allowed in small portions. Foods containing sucrose were perceived as less harmful to health than added sugars.

#### Conclusion

Each pregnant woman experienced prenatal nutritional care in diabetes not as a dietary method, but as part of her lifestyle.

**Keywords:** Nutritional care. Prenatal care. Diabetes *Mellitus*. Qualitative research.

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## RESUMO

### **Objetivo**

Retratar a dimensão simbólica do cuidado nutricional pré-natal em diabetes.

### **Métodos**

Participaram 17 puérperas adultas com diagnóstico de diabetes prévio ou gestacional. A observação participante e entrevistas semiestruturadas foram aplicadas para construção dos dados. A interpretação foi orientada por uma adaptação da Análise de Conteúdo Temática de Bardin.

### **Resultados**

A necessidade de mudanças no comer foi o principal significado do diabetes. O cuidado nutricional baseado no Método Tradicional ou no Método da Contagem de Carboidratos foi compreendido como uma oportunidade de reeducação alimentar. O emagrecimento foi considerado por algumas como desejável, ainda que contrariasse o aconselhamento dos nutricionistas. As gestantes adotaram o plano alimentar padrão, utilizando pouco da lista de substituição de alimentos e referiram eventuais transgressões alimentares, autoconsentidas em pequenas porções. Alimentos contendo sacarose foram compreendidos como menos nocivos à saúde, quando comparados ao açúcar de adição.

### **Conclusão**

Concluiu-se que cada gestante vivencia o cuidado nutricional pré-natal em diabetes não como um método dietético, mas como algo que integra a sua forma de viver.

**Palavras-chave:** Cuidado nutricional. Cuidado pré-natal. Diabetes Mellitus. Pesquisa qualitativa.

## INTRODUCTION

Gestation is a process full of symbolisms that represent sociocultural constructs. The transformation caused by pregnancy promotes growth, maturation, body changes, and emotional intensification [1]. In high-risk pregnancies, with potential risks to the health of mother and child, each pregnant woman perceives the diabetes *Mellitus* and the proper response based on her experiences and those of her family. Pregnant women and their relatives attribute particular meanings to the disease that are influenced by their culture, personality, and socioeconomic environment [2].

In the past, women with chronic diseases were advised not to get pregnant. However, recent advances in maternal care have allowed these women to experience motherhood [3]. The coexistence of pregnancy and diabetes *Mellitus* is an example, and nutritional care for this condition is the subject of this study [2,4].

Pregnant women with diabetes construct meanings about the disease process (symbolic dimension of diabetes in pregnancy) that will

influence self-care management strategies, adherence to advice, interactive processes and decision-making (concrete dimension of gestational diabetes), in a relatively short time [5,6].

Pregnant women should be screened for diabetes during prenatal care because of the increasing number of reproductive-aged women diagnosed with diabetes and obesity [7]. In this context, nutritional care contributes to a favourable perinatal outcome. In the case of gestational diabetes, in addition to providing adequate maternal-foetal nutrition with the recommended weight gain and glycaemic control [8], this care enables pregnant women to manage the disease with self-autonomy, thereby making appropriate food choices and committing themselves to their health and the child's health [9].

According to the American Diabetes Association guidelines [10], nutrition recommendations can be based on energy balance through macronutrient distribution among meals and calorie-restricted diets, known as the traditional method, or on the Carbohydrate Counting

Method (CCM), which is recognized for providing greater food flexibility.

This study aims to understand the symbolisms of nutritional care from the perspective of women who have experienced gestational diabetes, whose process is permeated by senses that influence self-care and obstetric outcome.

## METHODS

A descriptive study was conducted using a qualitative approach [11], based on an interpretive perspective. According to Schwandt [12], an interpretive approach aims at understanding the complex world of living experiences from the point of view of those who experience them, in their context.

The study site was a public maternity hospital in the city of *Rio de Janeiro* (RJ), a referral centre for the prenatal care of pregnant women with diabetes.

The nutritional care offered to pregnant women with diabetes was tested using a previous intervention study in which at least six consultations with a nutritionist were scheduled for individualized nutritional guidance specific to the gestational period, based on traditional method or on CCM. Specific forms for each method were given, including meal plan registration, food substitution list (traditional method and CCM), sugar-free cookbooks (traditional method only) and food list for celebrations with the carbohydrate content per serving (CCM only).

Issues related to diabetes management were discussed with the pregnant women during educational initiatives including active listening, open dialogue and sharing of knowledge, feelings and life experiences [13].

Seventeen postpartum, singleton pregnant women, mostly primigravida, aged between 22 and 43 years, participated in the study. In relation

to diabetes *Mellitus* type, four participants had previous diabetes *Mellitus* (one type 1 and three type 2) and thirteen women had Gestational Diabetes *Mellitus* (GDM).

The participants lived in all regions of the city (Central, North, South and West and the municipality of *Baixada Fluminense*). Most had access to formal education, primarily secondary education, and worked outside their homes in commercial businesses (food, fashion, real estate, clothing), health facilities (receptionist, dental assistant) or private homes (housekeepers).

All participants received prenatal care and delivered their children at the study maternity. They received nutritional care for diabetes and signed a Informed Consent Term [14].

Data collection methods included participant observation, semi-structured interviews and medical record reviews (Figure 1) [15-17].

Participant observation was conducted by involving the researcher in different periods of the prenatal care at the maternity and taking notes in a notebook.

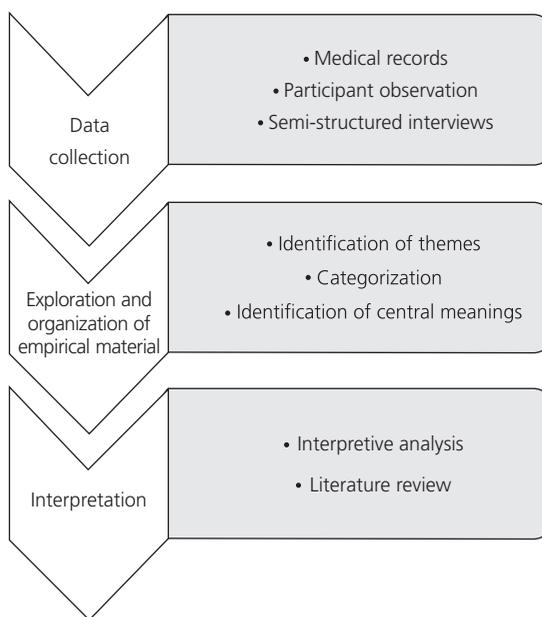


Figure 1. Data collection and analysis flowchart. *Rio de Janeiro* (RJ), Brazil (2017).

The sociodemographic and obstetric data of the study subjects were collected from the medical records prior to the interviews, which were performed individually, in quiet places, averaging thirty minutes, from December 2011 to August 2012. All interviews were recorded and transcribed reliably.

The sample was considered sufficient when reaching the saturation of statements [18] on the study objectives, and the empirical material was collected from the observations and interviews. These data were compared to assess their validity [19].

Ethical issues were in accordance with Resolution nº 466/12 of the National Health Council, which establishes guidelines and standards for research involving human subjects [14]. The study was approved by the Research Ethics Committee of the Maternity School, *Universidade Federal do Rio de Janeiro* (UFRJ), Research Protocol nº 17/2010-CEP/ME-UFRJ of 10/15/2010.

The empirical material was analysed using an adaptation of Bardin's [20] Thematic Content Analysis as technical reference, whose data exploration and organization phases included exhaustive reading of notes from observations and transcriptions of interviews for general and specific content analysis.

Based on the corpus of analysis, the themes were initially defined, according to the semi-structured interview script, and then included in one of the following categories: eating while pregnant with diabetes, nutritional care as a rule, and nutritional care as a decision. For each category, the central meanings were identified and interpreted based on the literature.

## RESULTS

### Eating with diabetes while pregnant

Eating transcends biological needs and functional properties of food; it reveals

the regional culture, family customs, personal preferences, affective memory, living conditions, and social, religious and economic aspects. Therefore, eating does not always meet nutritional recommendations. Any dietary change brings new meanings to eating for individuals [21-23].

When women become pregnant, all their habits, including food habits, are observed by relatives, friends, and healthcare professionals. However, some women disregard this control and allow themselves to "eat as much as they want", exercising their right to choose what, how much, and when to eat [21]. For some women in this study, nutritional care meant interdiction, something laborious that hurt the autonomy of pregnant women:

*... I do it because I have to ... sometimes I like to binge... real food, without counting calories, because I think that wasting time [sic] measuring one spoon, two, three, Ah! (Patrícia).*

Conversely, and in agreement with other studies [24,25], changes in eating habits required in gestational diabetes were also perceived as an educational element for making healthy food decisions:

*... I liked it a lot because I learned to eat properly; my diet was terrible; I had snacks for lunch, hamburgers, savoury snacks, and I learned to eat right, to eat legumes, vegetables (Karla).*

Although the health of the baby seems to be the main motivation for healthy eating, the pregnant women recognised that the process of dietary re-education was not easy:

*At first, it was hard ... I thought a lot about my daughter. Today, I am eating everything. I am not eating fried food, pasta, oxtail anymore ... because, nowadays, I like everything (Rosalia).*

Learning to eat "everything" meant to include the main and some previously excluded food groups and introducing better dietary choices, from food acquisition to preparation, following the recommendations from nutritionists.

*We always learn from nutrition, and even use it at home later, do you understand? We teach our children because we learn how to eat, do you understand? (Karen).*

The fear of eating was reported by women, and it was associated with the food effect on glycaemic control [22,25]. Despite their fear of eating, they eventually ate unrecommended food, and then, they had to deal with their concern about the decision:

*... I think I was a little bit scared, right? I was afraid that my blood glucose would increase too much ... I was taking care of myself, this way ... and of the baby ... (Lucia).*

*Sometimes I was craving for a slice of cake, I ate it, but I did not eat safely, no Patricia.*

The practice of diet breaks, not every day, and social licenses on special occasions and celebrations by people with diabetes were described by Barsaglini & Canesqui [21] as "abuses" in the first case, and by Paterson *et al.* [26] as "social benefits" in the second. These transgressions of the nutritional guidelines are influenced by the fact that eating is a social event full of social meanings [27].

## Nutritional care as a rule

The nutritionist sought to motivate the pregnant women to eat their meals regularly, meeting the schedules, to establish a diet routine. This routine was often a challenge for the women, especially those who worked outside their homes:

*... Some weeks I would eat right, whereas in others I would have an unbalanced diet because of work; I was unable to stay on a diet in the weeks I worked in the afternoons. In the weeks when I worked during regular hours, I would stay on the diet ... (Maria José).*

Rigid schedules may place undue pressure on women. The meal plan proposed for a

pregnant woman must be feasible in the real world, not in an ideal world created by the nutritionist [28].

During prenatal care, although the goal of nutritional care is adequate weight gain, some women in the present study lost weight. This fact may be associated with failure to comply with the guidelines received:

*... I did not gain a single [kilogram] because I was losing [weight], but this was because I was on a diet, I strictly followed the diet. I followed the whole diet, strictly (Karla).*

In common sense, diet carries the sense of food control, which in turn is associated with weight loss. In the case of GDM, the tendency to favourably associate diet with weight loss is apparently greater, and diet is regarded as a therapeutic measure for disease control. The way in which pregnant women receive and decode the guidelines may differ from what the nutritionist proposed [23,29,30].

Regarding this issue, in some cases, the pregnant women instructed to use CCM in this study decided to restrict their diet to the standard menu, similar to that recommended by traditional methods. That is, some pregnant women failed to use the list of extraordinary foods, allowed by the CCM on exceptional occasions or celebrations, overlooking the flexibility allowed by the CCM.

In fact, glycaemic control guides the treatment and, therefore, it is also valued by a pregnant woman, who recognized an association between the eating and the increase in blood glucose, often forcing her to choose food deprivation:

*... I did not even want to eat some things because I got another list of party foods; I would hardly eat any of those things. I would just eat whatever was in the first page [orientation page], which included the healthiest foods; I did not care about the list of party foods (Lucia).*

The literature discusses the fact that some pregnant women adopt stricter rules as an effective way to deal with the requirements of the therapeutic plan. However, the nutritionist must seek flexible attitudes of permanent negotiation and goal adjustment [28].

In some cases, CCM has been considered a tool for dietary reeducation, albeit with the drawback of requiring quantifying carbohydrates for everything eaten:

*I think that the carbohydrate counting method is very good; first, we learn how to eat properly ...; second, we can discipline ourselves to learn the amount of food we can eat, although sometimes we are just too lazy to count (Neli).*

Dietary transgressions or diet breaks apparently do not differ between the pregnant women following both methods (traditional methods and CCM). Eating something that was not prescribed, some extra or sugary food, was admitted by the pregnant women, in small portions, including in CCM, wherein those foods may be substituted by grams of carbohydrates.

Although correcting hyperglycaemia by administering fast-acting insulin should follow medical prescription, in some cases, the pregnant woman took this initiative after dietary transgressions: *"... we give some ideas to each other. ... sometimes we think we can, so we take insulin afterwards"* (Patrícia).

Searching for compensations is a strategy of patients with chronic disease, as described by Barsaglini & Canesqui [21].

Although added white sugar could be part of a CCM-based food plan, it was considered banned by many pregnant women with diabetes [22]. Conversely, foods containing sugar are more easily accepted and eventually consumed, as if the sugar from these foods was less harmful.

In this study, some pregnant women chose sweeteners, others sugar or a combination

of both or neither. In the puerperium, many women quantitatively reduced sugar consumption if they resumed using sugar: *"... I completely stopped using sugar, completely; now, I am using it again, but I am using it in small amounts"* (Thaise).

## Nutritional care as a decision

Nutritional care, individualized or collective, is not widely available in health services, including nutritional care for high-risk groups. Of all the study puerperal women, including women with Pre-Existing Diabetes Mellitus (PDM), only one had been previously followed-up by a nutritionist during the prenatal period of her first children (twins), also when she developed GDM.

Another pregnant woman reported that she received nutritional care for the first time during pregnancy and that she was unaware of other benefits in addition to weight adjustment: *"Nutrition is ... learning how to eat better, doing things that I thought only fat people had to do"* (Kelly).

Nutritional care apparently contributed to promoting the commitments of nutritional science to disease prevention and health improvement and to removing the misconception that the objective of nutritional monitoring is weight loss, i.e., that it is exclusively intended for people with excess body weight.

Positive experiences regarding the daily application of CCM, with benefits to autonomy, flexibility and glycaemic control, were reported by some pregnant women:

*For my wedding, she [the nutritionist] made an exception, she counted the calories for me, then I counted the calories, and it matched. When I came back, oh my God! I came on Thursday, the party was on Saturday, and on Monday I did the blood glucose test, and it was lower than in other occasions!* (Maria José).

Acquiring the ability to read food labels was perceived as a positive aspect of CCM, favouring critical reflection when purchasing food. Through individual consultation and educational initiative, the nutritionist worked with pregnant women to develop this ability. Sometimes, based on data in the food anamnesis, the nutritionist reviewed original labels of processed foods with pregnant women.

Practical learning covering simple daily activities was valued by Santos & Penna [31] as a health education strategy that favours maternal self-care, extended to her family.

In agreement with the aforementioned study, educational initiatives are, for some pregnant women, a space for open and informal conversations, an exchange of knowledge and experiences between pregnant women, who have diabetes in common, towards favouring emotional balance and care management.

Diabetes management by pregnant women involves lifestyle adjustments. It is not just a matter of choosing to follow the prescriptions of healthcare professionals; it depends on internal and external aspects, such as their experiences as pregnant women, in addition to cultural, symbolic, relational, and situational elements. Therefore, even if pregnant women are interested in and motivated for nutritional care, the adherence to the nutritional plan developed with the nutritionist is dynamic, through a dynamic of life with several events and daily decisions, which do not exclude the possibility of the constant search for healthy living [21,23,24].

## DISCUSSION

One of the limitations of this study may be the fact that it was performed in a public maternity hospital; however, it is a referral centre for the care of pregnant women with gestational diabetes. In addition, the low number of subjects investigated can be considered another

limitation, which is a characteristic inherent to the method used. Therefore, the conclusions of this work apply only to this population, thereby precluding generalisation of the findings to pregnant and puerperal women treated in other maternity hospitals in Brazil.

The diagnosis of diabetes *Mellitus*, whether PDM or GDM, requires introducing dietary changes as the main form of disease control, which is considered the main challenge. Women regarded the nutritional guidelines in both methods (traditional methods and CCM) as an opportunity for dietary re-education, especially for their baby's health.

The concept of diet linked to restriction and weight loss was found in many statements, and weight loss in pregnancy was regarded as desirable, even though opposite information was recommended by the nutritionist.

Although the possibility of food substitution was permitted, many pregnant women did not take the risk because diet breaks meant transgression, even in CCM. Adding white sugar to foods is banned for pregnant women who follow CMM, despite the nutritionist's advice on the use of sugar; however, foods containing sugar were less harmful to health.

The study indicated that the symbolic dimension of prenatal nutritional care in both PDM and GDM was similar, regardless of the time elapsed since diagnosis. Each pregnant woman experienced prenatal nutritional care in diabetes *Mellitus* not as a dietary method, but as something that is part of her lifestyle, which is re-signified every moment.

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## CONTRIBUTORS

RCM MACHADO contributed to project conception, experimental design, data collection, analysis and interpretation and manuscript preparation. BD LÍBERA and C SAUNDERS contributed to project conception and critical revision of the manuscript. MR BAIÃO and MMAS SANTOS contributed substantially to project conception, experimental design and critical review and final approval of the manuscript.

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