Nursing Performance in the Care of Gestational Diabetes: An Integrative Literature Review

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Authors' contributions

*This work was carried out in collaboration among all authors. All authors read and approved the final
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Article Information

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ABSTRACT

Background: gestational Diabetes Mellitus (GDM) is a condition characterized by glucose intolerance with onset or first recognition during pregnancy. It poses significant risks for both maternal and fetal health, including preeclampsia, macrosomia, and neonatal hypoglycemia. The increasing prevalence of GDM highlights the need for comprehensive prenatal care, in which nursing professionals play a pivotal role.

Objective: to analyze the role of nursing professionals in the care of pregnant women with Gestational Diabetes Mellitus (GDM), highlighting the importance of humanized care, diagnosis and treatment.

Methods: integrative literature review with the selection of five articles after analyzing 18,610 found on platforms such as SciELO, Portal CAPES, and Google Scholar.

Results: the importance of humanizing nursing care, glycemic monitoring, health education, and psychological support was observed. The implementation of care protocols based on scientific evidence, together with the continuing education of nursing professionals, is essential to optimize treatment and prevent complications.

Conclusion: the role of nurses is essential to promote the quality of life of pregnant women and their babies, ensuring effective control of GDM.

1. INTRODUCTION

Currently, one of the biggest global health problems is Diabetes Mellitus (DM). It is a chronic disease that begins with high blood glucose levels, causing changes in the pancreas that affect the mechanism related to insulin formation, thus causing a reduction in blood glucose levels. The main function of insulin is to promote the entry of glucose so that it can be used in various activities by the body's cells as a source of energy (Brazilian Diabetes Society, 2019).

According to the International Diabetes Federation (IDF), there are an estimated 537 million people with diabetes worldwide, an increase of 16% (74 million) according to estimates made in 2019. This rate could reach around 643 million people in 2030. This verification is done every 2 (two) years. If the estimates continue to grow, we will have a percentage of 12.2% with 783 million diabetic people by 2045 (International Diabetes Federation, 2021).

According to the Brazilian Institute of Geography and Statistics (IBGE), the results of the 2022 Census stipulate that the population of Brazil is made up of 203,080,756 people, indicating that the estimated number of people with diabetes is approximately 20 million, since the last survey in a representative sample showed that, in the 27 capitals surveyed, the frequency of self-reported diabetes diagnosis was 10.2% (Brazilian Diabetes Society, 2024).

Diabetes is caused by an imbalance between insulin production and its action in the body, resulting in hyperglycemia. Prevention and treatment of diabetes are essential to improve the quality of life of patients and reduce the risk of complications. Therefore, a multidisciplinary approach to diabetes management is necessary. Comprehensive care for patients with diabetes is essential to ensure a healthier life and reduce the impact of this disease on public health (Cosentino et al., 2020).

DM can be classified into 4 forms: 1) pre-diabetes; 2) type 1 diabetes when there is no insulin production; type 2 diabetes, when the pancreas produces insulin, but not enough; and 4) gestational diabetes characterized by increased glucose during pregnancy (International Diabetes Federation, 2021).

According to the Brazilian Diabetes Society (SBD), diabetes is a complex metabolic syndrome that occurs due to an imbalance

between insulin production and its action in the body (Brazilian Diabetes Society, 2024).

Insulin is a hormone produced by the pancreas that regulates blood glucose levels. When the body does not produce enough insulin or the cells do not respond to the insulin produced, glucose builds up in the blood, causing hyperglycemia and other symptoms associated with diabetes. According to the World Health Organization (WHO), the prevalence of diabetes has increased significantly worldwide, especially in developing countries (Brazil, 2001).

It is estimated that diabetes affects more than 463 million people worldwide and causes approximately 4 million deaths each year. Complications of diabetes include cardiovascular problems, neuropathy, retinopathy, nephropathy and diabetic foot, among others (Brazil, 2001).

By delimiting the research, it is observed that pregnancy is a very significant and remarkable phase in a woman's life, and that it can become a period of suffering when the pregnancy is not planned, when the assistance of health professionals is inadequate and/or subject to some obstetric violence, or even when an undesirable pathological case occurs. This can lead to health problems and even maternal-fetal death (Greely et al., 2022).

During this period, risks related to pre-existing diseases and complications of organic, occupational or psychological origin may occur (Lima et al., 2018). Among these complications is Gestational Diabetes Mellitus (GDM), a disease that affects carbohydrate metabolism, characterized by an uncontrolled increase in blood glucose levels during pregnancy, which may persist after the baby is born (Shimoe et al., 2021).

GDM has a variable prevalence of 1 to 14%, depending on the population studied and the diagnostic criteria used. In this context, 7% are associated with this gestational complication, which may reach approximately 200,000 cases/year. In Brazil, GDM is still one of the main metabolic disorders of pregnancy, reaching a prevalence that can vary between 3 to 25%, according to the states studied (Shimoe et al., 2021).

Therefore, this study aims to analyze the role of nursing professionals in the care of pregnant women with GDM, highlighting the importance of humanized care, diagnosis and treatment.

2. MATERIALS AND METHODS

This study was conducted in accordance with the requirements of an Integrative Literature Review (ILR), which is a research method that selects and evaluates not only primary studies, but also literature reviews published in independent journals and digital platforms that bring together more than one journal or magazine.

In carrying out this ILR, a method based on a framework divided into six stages was adopted: establishing the theme and research question; establishing inclusion and exclusion criteria for articles (literature search); defining the information to be extracted from the selected articles; analyzing the included studies; discussing and presenting the results; presenting the integrative review (Mendes et al., 2018).

In the process of defining the theme and research question, a research question was developed to guide the study: how can nursing professionals work in the care of patients with gestational diabetes? Scientific publications indexed in the CAPES Periodicals Portal database, Scientific Electronic Library Online (SciELO) and Google Scholar were selected, with the following descriptors: Nursing and Gestational Diabetes, ensuring a broad search. The inclusion criteria defined for selection were original articles in Portuguese, published between 2020 and 2024, which have the search descriptors in their title.

The exclusion criteria were abstracts published in events, newsletters, theses and dissertations and productions published outside the inclusion period or that do not meet the inclusion criteria.

The study layout format included: 1) Author/year; 2) Title of the article; 3) Research methodology, as per the table below. More information about the researched article was included in the discussion.

The analysis of the studies began with the results using Microsoft Office Excel 2016 software, in order to produce Table 1. This phase required an organized approach to consider the rigor and characteristics of each study.

The most relevant data from the research were presented based on the interpretation and

synthesis of the results. In addition to identifying possible knowledge gaps, it was possible to define priorities for future studies.

3. RESULTS AND DISCUSSION

In conducting this study, a total of 18,610 (eighteen thousand, six hundred and ten) studies were identified in the three databases (SciELO, CAPES Portal, Google Scholar). However, after applying seven filters, five complete articles were selected and were suitable for analysis because they met the main requirements of the research and its objectives. The article selection process is described below (Table 1).

After data extraction, some characteristics of the studies were summarized in Table 2.

In the study by Veras (2020), the author makes a significant contribution to the field of nursing, especially in the management of GDM. She describes the implementation of an intervention plan focused on educational actions, which proved to be essential in the care of pregnant women with the condition. The study emphasizes the importance of educational interventions in the treatment and monitoring process of these pregnant women, highlighting how these actions positively impact the promotion of women's autonomy.

In addition, the study highlights the fundamental role of empowering pregnant women, helping to effectively control the disease and improve patients' quality of life. Educational interventions, as presented by Veras (2020), not only provide the knowledge necessary for self-care, but also contribute to a relationship of trust between health professionals and patients, resulting in better clinical results and greater adherence to treatment.

Veras (2020) emphasizes that health education favors a deep understanding of the difficulties and experiences of pregnant women with GDM, allowing for individualized care. This is essential to promote focused care, which is important in contexts of delicate conditions such as GDM. By educating patients, the nursing discharge plan allowed for better adherence to preventive guidelines and practices, favoring the management of the condition during and after pregnancy.

Furthermore, it emphasizes the importance of maintaining these educational practices as an institutional routine, suggesting that the results achieved at HUMI can serve as a model for other institutions that deal with diabetic pregnant women. The focus on empowering patients through education demonstrates alignment with what the literature already suggests about the role of education in the control of chronic conditions, such as GDM (Veras, 2020).

It can be seen, therefore, that nurses who work directly in health promotion and disease prevention strategies can create nursing care plans and prenatal consultations, according to the demands identified, in order to manage care mediations to monitor changes in pregnancy and referrals to other services, in order to carry out multidisciplinary actions (Castegnaro & Oliveira, 2022).

Castegnaro and Oliveira (2022) emphasize the role of nurses in caring for pregnant women with GDM, highlighting the importance of interventions based on scientific evidence. The literature review carried out by the authors between 2016 and 2021 reinforces the necessary action of nurses in all phases of prenatal care up to the intervention and guidance of pregnant women. The article highlights the need for adequate and humanized care planning with constant monitoring, re-education on lifestyle habits, prevention of complications and referral to other professionals, when necessary.

Table 1. The article selection process

Electronic Consultation Bases					
N	Filters	SciELO	Capes Portal	Google Acadêmic	Total
1	Keyword and boolean operator	1	109	18.500	18.610
2	Language only in Portuguese	1	81	15.900	15.982
3	Period from 2020 to 2024	1	50	7.390	7.441
4	Open Access Articles	1	10	7.390	7.401
5	Keywords in the title	1	10	9	20
6	That meet the Objective	1	8	7	16
7	Only full articles	1	2	2	5
	Final Results: 5				5555

Fonte: Authors (2024).

Table 2. Description of selected articles

Nº	Title	Author (Year)	Database	Objective	Method
E1	Gestational diabetes mellitus: assistance with educational actions and implementation of a nursing discharge plan aimed at pregnant women admitted to a university hospital	Veras (2020)	SciELO	To analyze educational actions regarding nursing implementation in hospitalized pregnant women.	Descriptive study about the experience of implementation and outcomes of an intervention plan carried out from January 2018 to December 2018 at the Obstetric Center of the University Maternal and Child Hospital (HUMI) in São Luís.
E2	Nursing assistance to pregnant women with gestational diabetes mellitus	Lakshmi, K. (2020)	CAPES Portal	To analyze the prevalence of gestational diabetes and nursing care provided.	Bibliographic review of studies conducted from 2016 to 2021.
E3	Gestational Diabetes Mellitus: the importance of nursing care in prevention and control within primary health care.	Santos et al. (2023)	SciELO	To evaluate the importance of nursing care in the control and prevention of gestational diabetes mellitus based on the literature.	Integrative literature review with exploratory scope and qualitative approach.
E4	Factors related to gestational diabetes mellitus and the importance of nursing in prenatal follow-up.	Silva e Gomes (2023)	Google Academico	To evaluate the importance of nursing care in the prenatal follow-up of pregnant women with GDM, based on the literature.	Literature review (SciELO, LILACS, MEDLINE, and BDENF databases).
E5	Effect of nursing intervention with diversified objectives during the perinatal period in patients with gestational diabetes mellitus	Sun et al. (2024)	SciELO	To evaluate the importance of nurses in controlling gestational diabetes during the prenatal period.	Prospective study involving 96 patients with GDM treated from February 2020 to February 2023, selected and randomly divided into an observation group (n=48) and a control group (n=48).

Fonte: Authors (2024).

Individualized care for each patient is important to ensure that pregnant women receive care that is appropriate to their specific needs. This approach highlights the importance of multidisciplinary work and personalized care for pregnant women with GDM, in line with other studies on the role of nursing in controlling this condition (Santos et al., 2023).

It is understood that nurses need to be prepared to understand the criteria used to diagnose GDM. According to the International Diabetes and Pregnancy Association, anthropometric information, lipid profile, glucose metabolism, ß-cell function and insulin resistance index must be observed, which are measures used worldwide to diagnose GDM (Costa & Rodrigues, 2021).

Prenatal health education, prevention actions and health promotion carried out by nurses represent an increase in the quality of life of pregnant women with GDM, given that it is their responsibility to prepare pregnant women who are diabetic to take care of themselves (Castro et al., 2024).

This type of assistance for the prevention and control of GDM also needs to be satisfactory, so that humanized care occurs, including qualified listening, reaping the benefit of direct and continuous contact with the patient, encouraging her to have a proactive attitude of self-care in order to have a good result in clinical treatment with medication and nutrition (Santos et al., 2023).

Santos et al. (2023) follow the same direction, highlighting the importance of nursing care in the control and prevention of GDM, in Primary Health Care (PHC). In their integrative review, the authors were able to gather data that confirm that nurses play a crucial role in monitoring pregnant women, both in individual consultations and in educational groups. The study highlights the role of nurses in providing guidance to pregnant women in order to promote measures to protect and restore their health. The study reinforces the need to correctly classify the risk of each pregnant woman in order to ensure that she is referred to the appropriate level of prenatal care.

Health professionals need to be prepared to provide humanized care for GDM, providing consultations that allow women to experience pregnancy in a special way, as this is a very important stage for any woman, in order to establish a safe environment for the healthy birth of the child (American Diabetes Association, 2022).

Castegnaro and Oliveira (2022) agree that nursing professionals need to prioritize health education in their actions, especially the care they must take with nutrition, regular physical activity, glycemic control, and adequate drug treatment.

Braga de Almeida et al. (2024) explore the factors that cause the development of GDM and the important role of nursing in prenatal care. The authors identify significant factors, such as increased body mass index (BMI), maternal age over 35 years, pre-gestational obesity, family history of diabetes, excessive weight during pregnancy, polycystic ovary syndrome (PCOS), sedentary lifestyle and inadequate eating habits.

The study is equally important in highlighting the role of nursing in the early identification of factors and the planned action of appropriate interventions in the prenatal period. The authors also mention the continuous and individualized assistance of pregnant women in the guidance for a healthy lifestyle and prevention of complications, with qualified and personalized monitoring during the gestational period (Braga et al., 2024).

The nurse can prescribe medications according to the protocol of the Ministry of Health and request additional tests, and also propose referral to other health services, if necessary, in the context of PHC. It is essential that nurses are trained to care for pregnant women with GDM, in order to continue providing comprehensive care, in accordance with health strategies, in order to seek control of the disease, starting with the nursing consultation in the prenatal period when the usual risk occurs (Santos et al., 2020; Santos et al., 2023).

The health professional, especially the nurse, must follow the guidelines for care for this pathology, informing the pregnant woman of the risks and the importance of consultations and exams to monitor the general clinical condition of the pregnant woman in order to prevent and/or reduce possible complications during her pregnancy (American Diabetes Association, 2022).

For Sun et al. (2024)[20] the authors analyze the impact of a nursing intervention with several

objectives in the perinatal period of pregnant women with GDM. The research carried out with 96 patients between February 2020 and February 2023, randomly divided the participants into two groups: Observation (n=48) and Control (n=48). The interventions contributed significantly to controlling blood glucose levels in pregnant women and improved patients' self-management capacity. The study also demonstrated a reduction in the incidence of perioperative complications and adverse neonatal outcomes. This reinforced the effectiveness of the diversified and personalized approach in the care of pregnant women with GDM, and also demonstrates that the proactive role of nursing is very important in improving maternal-fetal outcomes in cases of GDM (Sun et al., 2024).

It is observed that there is a significant importance of nursing care in the prevention and control of GDM. This care occurs especially in PHC, starting with consultation with nursing professionals during prenatal care, a favorable period to detect possible diseases in pregnant women (Castegnaro & Oliveira, 2022; Sena & Mapurunga, 2023).

Therefore, based on the educational practice strengthened by the concept of self-care, pregnant women can be safely advised on risks, complications, and problems that may be related to diabetes, such as cardiovascular complications, and for this reason they need to be committed to this care if they want to achieve success in the treatment. Other issues such as age and excess weight are also predictive factors for GDM, due to eating patterns (Costa & Rodrigues, 2021).

Therefore, nursing work as an educational path on eating patterns, pre- and post-prandial blood glucose measurement and home visits by nurses in PHC provide a better understanding of the case, especially if it occurs early in prenatal care, making it possible to monitor the case where the woman lives, creating a family bond and better progress in treatment and care (Raposo & Mascarenhas, 2021).

4. CONCLUSION

This study showed that nursing plays a fundamental role in the care of pregnant patients with GDM, which highlighted the diversity and complexity of the nursing professional's areas of action in this context.

Among the highlights, we can mention the humanization of care for pregnant women, in order to establish a bond of trust between the nursing professional and the patient, in order to favor adherence to treatment and promote the physical and emotional well-being of the pregnant woman. Active listening, empathy, respect for individuality, as well as effective communication are essential for this to occur.

All of the studies analyzed demonstrated that nurses need to have in-depth knowledge of the various aspects related to pregnant women, whether physiological, related to exams and diagnoses, and possible forms of treatment. Therefore, it is important to have constant improvement in the continuing education of these professionals, especially regarding the latest scientific evidence on this subject and the best practices for caring for these patients. It was found that the nursing professional's role in relation to patients with GDM is focused especially on the following actions: education, monitoring, measuring blood glucose levels, assessing vital signs, monitoring the weight of pregnant women; guidance on proper nutrition, regular exercise, importance of prenatal consultations; emotional support, so that they can overcome the physical and emotional changes resulting from pregnancy and the uncertainties that the disease brings; working together with other professionals (doctors, nutritionists and physical educators), in order to guarantee comprehensive care for pregnant women.

Thus, it is concluded that nursing plays a fundamental and necessary role in relation to the care provided to pregnant women with GDM, considering the need for humanized care, knowledge about the disease, implementation of educational actions, monitoring and psychological support in order to guarantee the quality of life of patients and their babies. Therefore, it is essential that managers and health institutions invest in the ongoing training of these professionals and in the implementation of care protocols based on scientific evidence, in order to optimize treatment results, preventing further complications.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image

generators have been used during the writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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