



SUBMISSION FLOW

Submitted: 15/12/2023

Approved: 23/06/2024

Published: 12/07/2024

e-ISSN 2965-4556

HOW TO CITE

SENA, I. V. dos A.;
MAPURUNGA, S. de O.
The Nurse's Role with
Pregnant Women with
Gestational Diabetes in
Primary Health Care. *Gestão &
Cuidado em Saúde*, Fortaleza,
v. 1, n. 1, p. e12227, 2024.
Available from:
[https://revistas.uece.br/index.
php/gestaoecuidado/article/vie
w/12227](https://revistas.uece.br/index.php/gestaoecuidado/article/view/12227).

The Nurse's Role with Pregnant Women with Gestational Diabetes in Primary Health Care

*Atuação de enfermeiros junto a gestantes com diabetes gestacional
na Atenção Primária à Saúde*

Izabella Vieira dos Anjos Sena¹

State University of Ceará, Fortaleza, Ceará, Brazil

Sheila de Oliveira Mapurunga²

I Educare College, Tianguá, Ceará, Brazil

ABSTRACT

Gestational Diabetes Mellitus (GDM) is defined by the World Health Organization as carbohydrate intolerance of varying severity that begins during the current pregnancy and does not meet the diagnostic criteria for diabetes mellitus. This study aims to observe the work of nurses with pregnant women with gestational diabetes in Primary Health Care. It is an exploratory-descriptive research study, using a quantitative approach. The research took place in the Basic Health Units of the municipality of Tianguá, Ceará, Brazil, from August to December 2020. Nurses working in the Basic Health Units, regardless of the duration of their practice, constituted the inclusion criteria. For data collection, a validated and adapted questionnaire for this research was used. Most of the participating nurses had between one and five years of practice, were female, and were on average between 25 and 45 years old. Discrepancies were identified in the screening for GDM, where a considerable number of nurses did not request the OGTT between 24 and 28 weeks, some did not provide guidance on the importance of physical activity, and there was no standardization in the procedures performed during the care of pregnant women with diabetes. Nurses need constant updates, as, according to the findings, it was noticeable that some had difficulties regarding the practice and routine protocols related to the care of pregnant women with GDM. Therefore, continuous education is recommended, as it proves to be a great ally for improving care, enabling a change in this scenario.

Keywords: Gestational Diabetes Mellitus. Nursing Care. Primary Health Care.





RESUMO

O Diabetes Mellitus Gestacional (DMG) é definido pela Organização Mundial da Saúde como intolerância a carboidratos de gravidade variável, que se inicia durante a gestação atual e não preenche os critérios diagnósticos de diabetes mellitus. Este trabalho objetiva observar a atuação de enfermeiros junto a gestantes com diabetes gestacional na Atenção Primária à Saúde. Trata-se de uma pesquisa do tipo exploratória-descritiva, por meio da abordagem quantitativa. A pesquisa ocorreu nas Unidades Básicas de Saúde do município de Tianguá, Ceará, Brasil, de agosto a dezembro de 2020. Enfermeiros atuantes nas Unidades Básicas de Saúde, independentemente do tempo de atuação constituíram os critérios de inclusão. Para coleta dos dados, utilizou-se de questionário validado e adaptado para esta pesquisa. A maioria dos enfermeiros participantes tinham entre um e cinco anos de atuação, eram do sexo feminino, com idade em média de 25 a 45 anos. Identificou-se discordância no rastreamento do DMG, em que considerável parte dos enfermeiros não solicitavam TTOG entre 24 e 28 semanas, alguns não faziam orientações sobre a importância da atividade física e não houve padronização nas condutas realizadas durante a assistência à gestante com diabetes. Enfermeiros precisam de atualizações constantes, pois, de acordo com os achados, foi perceptível que alguns apresentaram dificuldades quanto à prática e rotina de protocolos relacionadas à assistência a gestantes com DMG. Logo, recomenda-se educação permanente, que se configura como grande aliada para melhoria da assistência, possibilitando a mudança deste cenário.

Palavras-chave: Diabetes Mellitus Gestacional. Assistência de Enfermagem. Atenção Primária à Saúde.

Introduction

Gestational Diabetes Mellitus (GDM) is defined by the World Health Organization (WHO, 2017) as carbohydrate intolerance of varying severity that begins during the current pregnancy and does not meet the diagnostic criteria for diabetes mellitus. It is the most common metabolic problem in pregnancy, with a prevalence ranging from 3% to 25% of pregnancies, depending on the ethnic group, population, and diagnostic criteria used. Recent guidelines and major diabetes management protocols recommend that hyperglycemia initially detected at any point during pregnancy should be categorized and differentiated into diabetes diagnosed during pregnancy or GDM (WHO, 2017; Brasil, 2019).

The risk factors for developing GDM are diverse and include women with a Body Mass Index (BMI) over 25 kg/m², corresponding to overweight or obesity, advanced maternal age of 35 years or older, Hispanic, African-American, and/or Asian ethnicity, family history of type 1 or type 2 diabetes mellitus, previous pregnancies with macrosomia or polyhydramnios, use of hyperglycemic medications such as corticosteroids, diuretics, and thiazides, polycystic ovary syndrome, and systemic arterial hypertension (SBD, 2018).



Intervention in pregnant women with GDM can reduce the occurrence of adverse pregnancy events. The initial treatment of GDM consists of dietary guidance that allows for adequate weight gain, in addition to physical activity, respecting obstetric contraindications, with capillary blood glucose monitoring recommended, especially in pregnant women using insulin (SBD, 2019).

Pregnant women with GDM are considered high-risk due to the complexity of the disease. During nursing consultations in prenatal care, it is possible to identify more severe situations and intervene early in the risks of maternal and fetal morbidity and mortality, as well as provide the pregnant woman with knowledge about the disease, treatment, and actions to be taken (Medina *et al.*, 2017). Therefore, it is necessary for the nurse to make good use of the prenatal consultation to guide the pregnant woman about the care she should take and how to implement it.

The nurse is an essential professional in the care of GDM due to the classification of the pregnancy as high-risk (which needs to be monitored in Primary Care), requiring their involvement with the multidisciplinary team. The professional should plan and execute individualized care and be attentive to prevention methods for this complication, early detection, and active surveillance, to avoid complications and ensure maternal-fetal health and safety (Oliveira *et al.*, 2016).

Understanding effective strategies for monitoring and managing GDM and comprehending the perspectives of professionals can contribute to better glycemic control and reduce maternal-fetal complications and morbidity (Vieira *et al.*, 2023).

In this context, the objective was to observe the work of nurses with pregnant women with gestational diabetes in Primary Health Care (PHC).

1 Methodology

The study is characterized as exploratory-descriptive research conducted through a quantitative approach. The research took place in the Primary Healthcare Units (PHUs) of the municipality of Tianguá, Ceará, from August to December 2020. Inclusion criteria for the research included nurses working in the Basic Health Units of Tianguá, regardless of their length of service. Nurses who were on sick leave or vacation during the data collection period were excluded.

Initially, a survey was conducted at the municipal Health Department to gather the number of nurses working in the Basic Health Units, totaling 27 nurses. Data collection was



carried out through individual interviews, scheduled in advance according to the interviewee's availability, to avoid disrupting the workflow in the health unit. Participation was obtained from 20 nurses; one was on medical leave, two were on vacation during the data collection period, and four other professionals were unable to participate in the research. The interview utilized a questionnaire validated by Rezende (2018), from which questions relevant to this research were extracted.

The data collection instrument included questions seeking basic information about the interviewee, such as age, length of service, and gender, to identify the profile of professionals providing care to pregnant women with GDM. Subsequently, the questions focused on care methods such as reception, guidance, examination requests, and procedures for pregnant women undergoing investigation after a GDM diagnosis. The collected data were entered into Excel spreadsheets, and absolute and relative frequencies were calculated. These were then carefully evaluated and analyzed.

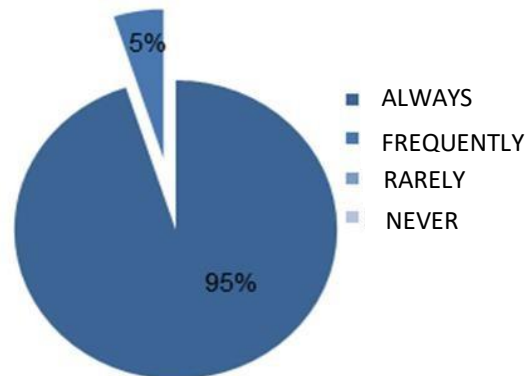
The research adhered to the ethical and legal principles outlined in Resolution No. 466/12 of the National Health Council, with approval from the Ethics Committee of the State University of Vale do Acaraú-UVA/CE, as per approval number 4.326.310.

2 Results and discussion

The interviews included the participation of 20 nurses working in Primary Health Care in Tianguá, Ceará. Of the nurses, 70% were female, and 30% were male. Among the participants, 35% were between 25 and 35 years old, another 35% were between 35 and 45 years old, 25% were between 45 and 60 years old, and only 5% were over 60 years old. Regarding the length of service, 45% of the nurses had been practicing for between one and five years, 30% had been practicing for between 15 and 25 years, 15% had been practicing for between five and ten years, 5% had been practicing for between 10 and 15 years, and another 5% had over 30 years of practice.

Of the nurses questioned about the request for fasting blood glucose tests for pregnant women at the beginning of prenatal care, 95% responded that they always requested it, and 5% of the nurses frequently requested it, as shown in Chart 1.

Figure 1. Request for fasting blood glucose test at the beginning of prenatal care.



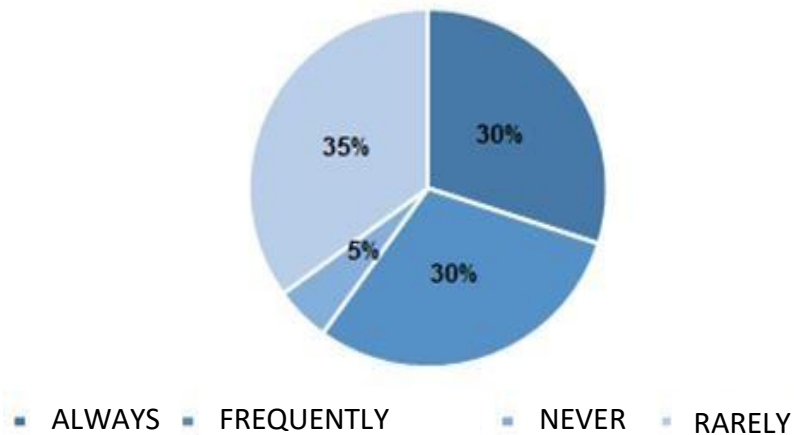
Source: prepared by the authors.

The guideline of the Brazilian Diabetes Society (2023) recommends that, at the first prenatal visit, fasting plasma glucose should be requested for pregnant women without prior knowledge of a DM diagnosis to detect diabetes (overt diabetes) and early GDM.

An integrative review on the management of GDM by nurses showed that guidelines encourage early screening of pregnant women for possible identification and diagnosis of GDM. The timing of screening varies in different guidelines, although most agree that early screening should be performed between 24 and 28 weeks of gestation. However, some guidelines recommend that this be done as early as possible, and if negative, the screening should be repeated at 24-28 weeks of gestation (Mensah *et al.*, 2019).



Figure 2. Request for OGTT for pregnant women between 24 and 28 weeks of gestation.



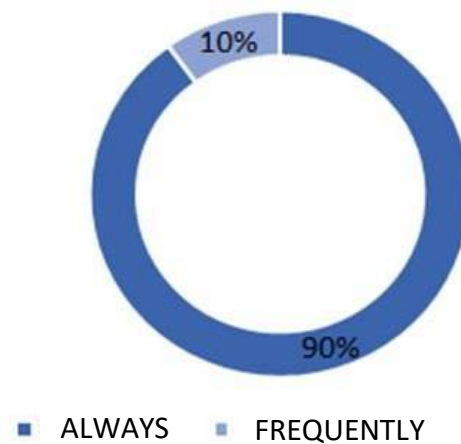
Source: prepared by the authors.

When asked about the request for the OGTT (Oral Glucose Tolerance Test) for pregnant women between 24 and 28 weeks of gestation, 35% of the interviewed nurses responded that they rarely requested it, 30% always requested it, another 30% frequently requested it, and only 5% never requested the test.

Considering this, it was observed that the responses varied, representing different practices among the interviewed nurses, indicating that they did not follow a protocol for requesting this test in the municipality. Additionally, it is concerning that 40% of the nurses did not request this critical test for screening gestational diabetes during prenatal care.

For pregnant women without a prior diagnosis of diabetes mellitus, regardless of the presence of risk factors, it is recommended that the diagnostic investigation of GDM be conducted between the 24th and 28th weeks of gestation, through an OGTT, with fasting plasma glucose measurement, 1 and 2 hours after ingesting 75 g of anhydrous glucose (SBD, 2023). The Ministry of Health emphasizes GDM screening through OGTT, considering it a routine test depending on the region's financial viability and total technical availability, aiming to detect 100% of cases and serving as a method of early screening and diagnosis (OPAS, 2017).

Figure 3. Guidance on correct insulin use in patients with GDM.



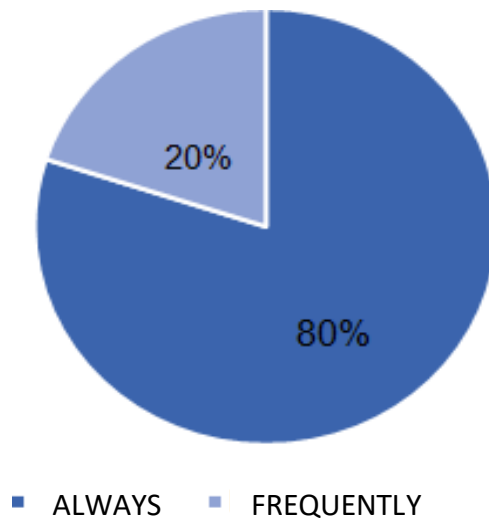
Source: prepared by the authors.

When questioned about providing guidance on the correct use of insulin for patients with GDM who need medication, 90% of the nurses responded that they always provided guidance, and 10% that they frequently provided guidance. The responses were as expected in Rezende's (2018) questionnaire, with options "always" followed by "frequently."

A study by Gomes, Tsuda, and Pace (2023) on medication therapy with diabetic adults identified that 54% of diabetic patients expressed fear and/or insecurity about self-administering insulin. Nursing consultations can be an opportunity to detect both difficulties and strengths, enabling patients to manage their DM. From this perspective, the necessity for health professionals, especially nurses, to implement educational activities, considering individual needs and available health service resources, is reinforced.

An observational study by Silva *et al.* (2023) indicated improved adherence to self-care actions and safe practices in insulin therapy after nursing consultations, demonstrating that this intervention is effective in promoting proper insulin treatment. The importance of the nurse's actions, which enable greater treatment efficacy, is emphasized.

Figure 4. Guidance on diet.



Source: prepared by the authors.

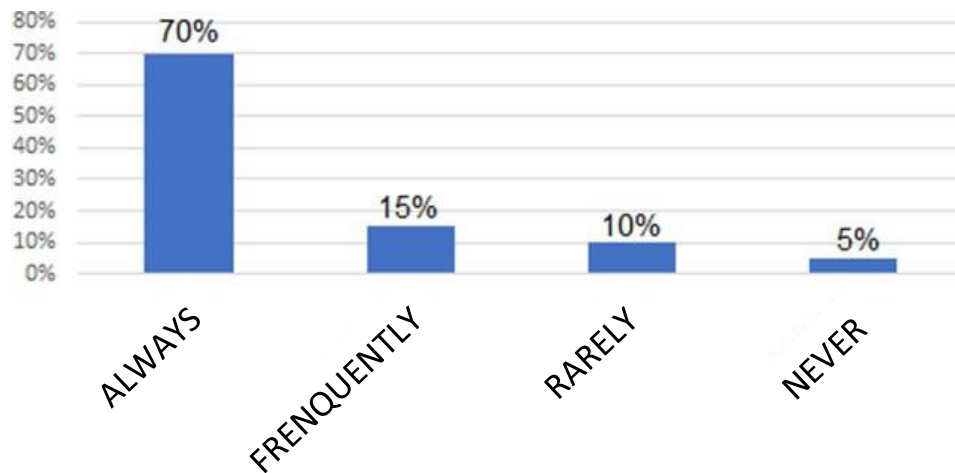
Regarding guidance on the appropriate diet based on Body Mass Index (BMI), 80% of the nurses responded that they always provided guidance, and 20% frequently provided guidance. The responses were consistent with the research, showing the effectiveness of nurses in providing dietary guidance to pregnant women with GDM.

Guidelines on managing gestational diabetes by nurses recommend that pregnant women with GDM receive nutritional counseling. The nurse should involve all necessary health professionals, preferably those with experience in GDM (Mensah *et al.*, 2019).

A study by Zeng *et al.* (2023) on continuous nursing based on information in pregnant women with diabetes found that in the group where pregnant women received dietary, exercise, and psychological interventions during hospitalization, there was control of blood glucose levels and better adherence to treatment. This study reaffirms the importance of the nurse's role in providing guidance to diabetic pregnant women.

A study conducted in Norway addressed the experiences of women with GDM regarding dietary guidance and self-monitoring of blood glucose in PHC. The dietary counseling provided by PHC midwives was sufficient and satisfactory for pregnant women; however, patients felt they received more personalized information in secondary health care compared to primary health care (Helmersen *et al.*, 2021).

Figure 5. Guidance on physical activity during pregnancy.



Source: prepared by the authors.

Em relação às orientações sobre atividades físicas, 70% dos enfermeiros entrevistados relataram que sempre orientavam, 15% orientavam com frequência, 10% raramente orientavam e 5% nunca instruíam sobre a prática de atividade física, conforme o Gráfico 5. As respostas indicaram que os enfermeiros entrevistados não possuíam padrão para essa conduta, visto que alguns profissionais responderam que nunca e raramente orientavam sobre a importância da atividade física, demonstrando a necessidade de envolvimento dos enfermeiros junto à equipe multidisciplinar para melhor orientação das gestantes diabéticas.

O estudo realizado por Huifen *et al.* (2022) mostrou que o exercício de intensidade moderada foi útil para melhorar o controle da glicemia, do uso de insulina, de ganho de peso gestacional e da pressão arterial em pacientes com diabetes gestacional. Uma revisão sistemática sobre programas de atividades físicas para gestantes identificou que qualquer tipo de atividade física de intensidade e duração suficientes podem trazer benefícios para gestantes com DMG (Laredo-Aguilera *et al.*, 2020).

Um estudo na China evidenciou que a Internet, combinada com a intervenção de enfermagem individualizada baseada em exercícios em pacientes com DMG, pode efetivamente melhorar a glicemia, reduzir a pressão arterial e a resistência à insulina, potencializando significativamente os resultados da gravidez (Chen *et al.*, 2021).

A incorporação de programas de atividades físicas adaptadas às necessidades específicas das gestantes com diabetes gestacional pode representar uma estratégia



promissora para otimizar a saúde materno-fetal. O enfermeiro pode atuar dentro da equipe multiprofissional no encaminhamento e nas orientações sobre a importância da atividade física para prevenção de complicações e melhora dos resultados maternos e fetais.

Final considerations

This research allowed for the identification of a comprehensive view of the role of Primary Care nurses in monitoring pregnant women with gestational diabetes mellitus (GDM), demonstrating the importance of these professionals in achieving quality care for high-risk pregnancies to avoid unfavorable perinatal outcomes.

One of the identified aspects is the discrepancy in GDM screening. The lack of uniformity in screening practices can result in late diagnosis, compromising proper management and endangering maternal-fetal health. In this regard, clear guidelines and evidence-based protocols should be implemented and consistently followed in all health units.

Additionally, the reported difficulties in providing guidance on the importance of physical activity suggest the need for more effective health education approaches. Pregnant women with GDM can significantly benefit from an active lifestyle and healthy habits, and it is up to healthcare professionals to provide clear and accessible guidance to promote healthy behaviors during pregnancy.

The spectrum of technical and scientific competencies of nurses in caring for pregnant women with GDM is consistent. Professionals strive to identify nursing problems during nursing consultations. However, it is evident that nurses require constant updates, as some interviewees demonstrated difficulties with the practice and routine of protocols related to the care of pregnant women with GDM.

Following this work, continuous education is recommended as a significant ally in improving care, enabling changes in the scenario, bringing training and updates for professionals, considering that science is constantly evolving and needs professionals who seek continuous study and improvements for patients.



REFERENCES

CHEN, Y. *et al.* Effect of the internet combined with exercise-based individualized nursing intervention in patients with gestational diabetes mellitus. **Diabetology & Metabolic Syndrome**, [S.l.], v. 13, n. 1, 30 out. 2021. Available from: <https://doi.org/10.1186/s13098-021-00738-0>. Cited: 12 feb. 2024.

GOMES, L. C.; TSUDA, L. C.; PACE, A. E. Conhecimento e práticas de pessoas com diabetes mellitus sobre a terapêutica medicamentosa e suas complicações agudas. **Enfermagem Brasil**, São Paulo, v. 19, n. 4, p. 290, 2020. Available from: <https://doi.org/10.33233/eb.v19i4.3100>. Cited: 12 feb. 2024.

HELMERSEN, M. *et al.* Women's experience with receiving advice on diet and Self-Monitoring of blood glucose for gestational diabetes mellitus: a qualitative study. **Scandinavian Journal of Primary Health Care**, EUA, v. 39, n. 1, p. 44-50, 2021. Disponível em: <https://doi.org/10.1080/02813432.2021.1882077>. Cited: 13 feb. 2024.

HUIFEN, Z. *et al.* Effects of moderate-intensity resistance exercise on blood glucose and pregnancy outcome in patients with gestational diabetes mellitus: A randomized controlled trial. **J Diabetes Complications**, EUA, v. 36, n. 5, p. 108186, 2022. Available from: <https://doi.org/10.1016/j.jdiacomp.2022.108186>. Cited: 7 nov. 2023

LAREDO-AGUILERA, J. A. *et al.* Physical Activity Programs during Pregnancy Are Effective for the Control of Gestational Diabetes Mellitus. **International Journal of Environmental Research and Public Health**, Switzerland, v. 17, n. 17, p. 6151, 24 aug. 2020. Disponível em: <https://doi.org/10.3390/ijerph17176151>. Cited: 12 feb. 2024.

MEDINA-PEREZ, E. A. *et al.* Diabetes gestacional. Diagnóstico y tratamiento en el primer nivel de atención. **Medicina Interna de México**, Cidade do México, v. 33, n. 1, p. 91-98, 2017. Available from: https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0186-48662017000100091.

MENSAH, G. P. *et al.* Guidelines for the nursing management of gestational diabetes mellitus: an integrative literature review. **Nursing Open**, EUA, v. 7, n. 1, p. 78-90, 2019b. Available from: <https://doi.org/10.1002/nop2.324>. Cited: 14 feb. 2024.

MINISTÉRIO DA SAÚDE (Brasil). Conselho Nacional de Saúde. 12 de dezembro de 2012. **Resolução Nº 466, de 12 de dezembro de 2012**. Plenário do Conselho Nacional de Saúde, p. 1-12, 12 dez. 2012. Available from: <https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>. Cited: 7 nov. 2023.

OLIVEIRA, E.C.; MELO, S.M.B.; PEREIRA, S.E. Diabetes Mellitus Gestacional: uma revisão da literatura. **Revista Científica Fac Mais**, v.1, n. 1. 2016. Available from: <https://editorarealize.com.br/artigo/visualizar/27830>. Cited: 7 nov. 2023.

OLIVEIRA, J. E. P.; MONTENEGRO JÚNIOR, R. M.; VENCIO, S. (orgs.). **Diretrizes da Sociedade Brasileira de Diabetes 2017-2018**. São Paulo: Clannad Editora Científica, 2017. p.383.



OPAS. Organização Pan-Americana da Saúde. Ministério da Saúde. **NBR 6023**: rastreamento e diagnóstico de diabetes mellitus gestacional no Brasil. Brasília: All Type Assessoria Editorial Ltda., 2017. Available from: <https://www.diabetes.org.br/profissionais/images/pdf/diabetes-gestacional-relatorio.pdf>. Cited: 7 nov. 2023.

REZENDE, A.A.O. **Elaboração e Validação de um questionário para avaliar conhecimentos, atitudes e práticas de Médicos e enfermeiros da atenção básica em relação ao cuidado de mulheres com Diabetes Mellitus Gestacional**. Tese (Mestrado junto ao programa de pós-graduação em Gestão Clínica), Universidade Federal de São Carlos, 2018.

SOCIEDADE BRASILEIRA DE DIABETES(SBD). **Diretrizes da Sociedade Brasileira de Diabetes, 2019-2020**. São Paulo: SBD, 2019.

SILVA, D. E. S. *et al.* Efeito da consulta de enfermagem na promoção de práticas seguras em insulinoterapia: estudo retrospectivo. **Online Brazilian Journal of Nursing**, Rio de Janeiro, v. 22, 2023. Available from: <https://doi.org/10.17665/1676-4285.20236601>. Cited: 12 fev. 2024.

VIEIRA, I. F. O. *et al.* Nursing assistance in primary health care for pregnant women with gestational diabetes: integrative review / Assistência de enfermagem na atenção primária à saúde a gestantes com diabetes gestacional: revisão integrativa. **Revista de Pesquisa Cuidado é Fundamental Online**, Curitiba, v. 15, p. 1-10, 2023. Available from: <https://doi.org/10.9789/2175-5361.rpcfo.v15.12211>. Cited: 7 nov. 2023.

WORLD HEALTH ORGANIZATION. Diagnostic criteria and classification of hyperglycaemia first detected in pregnancy. Genebra: **WHO**, 2013. Available from: https://iris.who.int/bitstream/handle/10665/85975/WHO_NMH_MND_13.2_eng.pdf. Cited: 7 nov. 2023.

ZAJDENVERG, L. *et al.* Rastreamento e diagnóstico da hiperglicemia na gestação. In: ZAJDENVERG, L. *et al.* **Diretriz Oficial da Sociedade Brasileira de Diabetes**. 2022. ed. [S. l.]: Conectando Pessoas, 2022. Available from: <https://doi.org/10.29327/557753.2022-11>. Cited: 15 fev. 2024.

ZENG, X. *et al.* Information-based continuous nursing on pregnant women with gestational diabetes mellitus. **European Review For Medical And Pharmacological Sciences**, [S.l.], v. 27, n. 18, p. 8762-8772, 2023. Available from: <https://www.europeanreview.org/article/33798>. Cited: 12 fev. 2024.



About the authors

¹ **Izabella Vieira dos Anjos Sena.** She holds a degree in Nursing from the Federal University of Paraíba (UFPB). She completed her residency in Women's Health through the Pernambuco State Health Department and is a specialist in Primary Care with an emphasis on Family Health from the Federal University of Minas Gerais (UFMG). She holds the title of Obstetric Nurse from the Brazilian Association of Obstetric Nurses (ABENFO) and a Master's degree in Family Health Strategy from the Federal University of Ceará (UFC). She is currently a Ph.D. candidate in the Graduate Program in Clinical Nursing and Health Care (PPCCLIS - UECE). Currently, she is a faculty member of the Nursing Course at UNINTA Tianguá and Coordinator of Postgraduate Studies at UNINTA Tianguá. E-mail: izabella.sena@aluno.uece.br. Lattes: <http://lattes.cnpq.br/5380447952735419>. ORCID iD: <https://orcid.org/0000-0002-9420-6178>.

² **Sheila de Oliveira Mapurunga.** She is a nurse graduated from IEducare College (FIED). E-mail: sheilamapurunga@gmail.com. Lattes: <http://lattes.cnpq.br/2042126958958702>. ORCID iD: <https://orcid.org/0009-0007-1190-205X>.