

## The Influence of the Multidisciplinary Team on the Self-Care of Women with A Previous Diagnosis of Diabetes Mellitus Who Become Pregnant

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### ABSTRACT

**Introduction:** Diabetes Mellitus (DM) is a chronic disease characterized by hyperglycemia resulting from a deficiency in insulin production or its action. It is estimated that 1 in 10 adults live with diabetes worldwide, being a leading cause of death with a total of 6.7 million.

**Objective:** To identify the adherence to self-care of women with previous DM who became pregnant and assistance from the multidisciplinary team to women with DM who become pregnant.

**Methodology:** This is a descriptive and exploratory study, carried out from June to September 2021. The study sample consisted of women with a medical diagnosis of DM1 or DM2.

**Results:** The study recorded 115 responses, among these (76) 66.1% already had a diagnosis of Gestational Diabetes Mellitus (GDM) and for this reason were excluded, leaving a total of (39) 33.9% responses.

**Conclusion:** It was possible to verify that the reception of the team with the pregnant woman was efficient and helped in self-care, but some factors interfered in this process, highlighting the difficulty to adhere to an adequate diet and socioeconomic status.

### Keywords

Diabetes, Self-care, Pregnancy.

### Introduction

Diabetes Mellitus (DM) is a chronic disease characterized by hyperglycemia resulting from a deficiency in the production of insulin or its action [1]. It is estimated that 1 in 10 adults live with diabetes worldwide, being one of the main causes of death. with a total of 6.7 million. The pathology addressed is responsible for 966 billion health expenditures in the world, with Brazil being the third country with the highest expenditure in 2021 [2].

DM can be classified as T1DM, T2DM, Gestational Diabetes Mellitus (GDM) and other etiologies. Among the subtypes of T1DM, there is type 1A, where insulin deficiency occurs due to the autoimmune destruction of pancreatic beta cells, and type 1B,

which is characterized by spontaneous insulin deficiency and its origin is unknown. T2DM is a condition caused by genetic factors and lifestyle, in which the metabolism has an insulin resistance associated with the gradual loss of this hormone [3].

It is estimated a prevalence of DM in Brazil of 10.5%, considering the age group from 20 to 79 years old, and it occupies the third position in the world in the classification of the highest prevalence rate of T1DM in people under 20 years old [2].

In general, the clinical presentation of T2DM is asymptomatic or oligosymptomatic, which makes the diagnosis difficult, which is made late, however, cases of T1DM are symptomatic, characterized by "four polys", which include polyuria, polydipsia, polyphagia and weight loss. Because it is a silent disease, chronic complications can arise, which are classified as microvascular and macrovascular [4,5].

Among the microvascular diseases, diabetic nephropathy stands out, the main cause of chronic renal failure on dialysis, diabetic neuropathy and diabetic retinopathy. Macrovascular complications can trigger acute myocardial infarction, peripheral vascular disease and stroke. Non-traumatic lower limb amputation commonly found in patients with DM is caused by diabetic neuropathy and vascular complications [4-6].

In addition, because it is often a silent disease, it is important to be aware of the risk factors that increase the chances of developing T2DM, among the main ones are family history and life habits, such as sedentary lifestyle, diet, increased abdominal circumference, advanced age, non-intake of vegetables and fruits and use of antihypertensive drugs [7].

Thus, the diagnosis of DM is made through the clinical evaluation of the patient and laboratory examination, which can be performed through fasting plasma glucose, oral glucose tolerance test (OGTT) and glycated hemoglobin (HbA1c). It is necessary that two tests are altered for the diagnosis. The diagnosis of DM is confirmed by the following parameters: fasting plasma glucose greater than or equal to 126 mg/dl, OGTT equal to or greater than 200 mg/dl and HbA1c greater than or equal to 6.5% [8].

After confirming the diagnosis, it is important to start treatment, which consists of maintaining adequate control of glucose levels. The measurement can be done using a glucometer or other device. It is important to seek appropriate habits in relation to food and physical activity, because in the case of T2DM, changes in lifestyle may be sufficient [5].

Thus, the literature points to the need to understand the factors that interfere with adherence to self-care in patients with DM, since adherence to treatment is unprofitable by not performing physical exercises, lack of care with the feet, ineffective knowledge about disease, inadequate diet, glycemic monitoring and inefficient consultations, which corroborates the appearance of complications and comorbidities [9].

The study emphasizes that the self-care of pregnant women with a previous diagnosis of DM can be more efficient due to the long experience related to the knowledge about DM and because they have skills regarding the management and adequate treatment [10].

According to data from the International Diabetes Federation (IDF), in 2021, 21.1 million (16.7%) of women had some form of hyperglycemia during pregnancy, with 80.3% diagnosed with GDM, 10.6% had previous diabetes and 9.1% due to T1DM or T2DM detected for the first time in pregnancy. Hyperglycemia in pregnancy is a problem today, both because of the risk of worse perinatal outcomes and the development of future pathologies, being a major challenge for women diagnosed with DM [11]. Among the risks to the fetus, respiratory distress syndrome, hypoglycemia, hyperbilirubinemia and fetal macrosomia stand out, in addition to the high risk of developing obesity, T2DM

and cardiovascular diseases in the future. Maternal may present hypertensive disorders, occurrence of polyhydramnios, need for cesarean delivery and delay in initiating breastfeeding [12].

Thus, these complications call attention to the need to intensify the health care of the mother and baby, through a multidisciplinary team, from the preconception period to the follow-up after delivery. Satisfactory glycemic control during pregnancy is essential in order to increase the probability of a favorable gestational outcome, thus reducing perinatal morbidity and mortality and maternal morbidity [13].

In this context, it is extremely important that the nursing team play its role as an educator, being a facilitator of comprehensive care for the individual, since health education is a teaching-learning resource so that, in this way, there is an improvement in the quality of life. Prenatal care for diabetic pregnant women demands actions that promote health and encourage women to actively experience their pregnancy, which means placing it at the center of care [14].

Based on the above, the study aimed to identify the adherence to self-care of women with previous DM who became pregnant and assistance from the multidisciplinary team to women with DM who become pregnant. As a guiding question for the study: What factors interfere with self-care in women with a previous diagnosis of T1DM and T2DM and what is the influence of the multidisciplinary team on self-care?

## Methodology

This is a descriptive and exploratory study, carried out from June to September 2021. The study sample consisted of women with a medical diagnosis of DM1 or DM2 and who agreed to participate in the study by signing the Free Term and Term of Informed Consent (FLCT). Women diagnosed with GDM were excluded.

The collected data were obtained through a self-administered questionnaire created on the Google Forms platform and disseminated on social networks in Brazil: Facebook, Instagram and WhatsApp. The questionnaire consisted of 30 questions, 05 of which were about sociodemographic data (age, profession, marital status, education and state of residence) and 25 questions about knowledge about DM and factors that hinder treatment adherence. The answers obtained were accumulated in an Excel software spreadsheet.

This study complies with national and international standards of ethics in research involving human beings and was approved by the Research Ethics Committee of UNIEURO, protocol 4,800,872.

## Results and discussion

The study recorded 115 responses, among these (76) 66.1% already had a diagnosis of Gestational Diabetes Mellitus (GDM) and for this reason were excluded, leaving a total of (39) 33.9% responses. Among them, the majority (14) 35.9% were aged between 25 and 30 years old, most were from the Southeast region

(18) 46.1%, with a predominance of complete high school (13) 33.3% according to table 1.

**Table 1:** Sociodemographic data.

Variable	n (%)
Age	
18 to 24 years	7 (17,9)
25 to 30 years	14 ( 35,9)
31 to 35 years	8 (20,5)
36 to 40 years	8 (20,5)
41 or more	2 (5,1)
Region	
Southeast	18 (46,1)
South	10 (25,6)
Midwest	8 (20,5)
North East	3 (7,6)
North	0 (0)
Schooling Degree	
Incomplete elementary school	1 (2,6)
Complete primary education	3 (7,7)
Incomplete high school	5 (12,8)
Complete high school	13 (33,3)
Incomplete Higher Education	8 (20,5)
Complete Higher Education	9 (23,1)

Source: prepared by the authors based on research data

With regard to socioeconomic conditions, (32) 82.1% stated that this factor interfered with self-care, and (35) 89.7% of the women found it difficult to control their DM during pregnancy and (4) 10, 3% did not experience any difficulties. Dong-Woo Choi et al (2019) conducted a study with 13,893 patients diagnosed with DM2 from 2004 to 2012, where they can observe that DM2 patients who have low socioeconomic status showed higher rates of hospitalization and mortality due to diabetes complications than those with a better socioeconomic status [15].

In this context, although it is not possible to fully explain the outcome of socioeconomic deprivation due to diabetes, it is believed that social, economic and medical factors may play an important role. Regarding the feelings of pregnant women who became pregnant with the diagnosis of DM, it was evidenced that (15) 38.5% felt anxious, (21) 53.8% sad, (30) 77% fearful, (35) 89.7% worried and (02) 5.1% were not worried. A study was carried out at the Maternity School of the Federal University of Rio Janeiro, with 17 adult puerperal women diagnosed with previous or gestational DM, in which DM was associated with a situation that was difficult to resolve, something worrying and capable of affecting the life of the pregnant woman drastically, therefore, pointed out as something terrifying [10].

From the analysis of the data, it was shown that there was no influence of the level of education for a good control of DM, since (17) 94.4% of the women who had only high school had difficulties and (16) 94.1 % of those who had higher education also presented. Thus, it is important that the multidisciplinary team pays increasing attention to consultations and resolves existing doubts, in addition to promoting educational activities in health units, thus strengthening the relationship of trust between patients and professionals.

Relating the difficulties of self-care with good DM control, it was observed that (14) 35.9 % had difficulties in checking blood glucose several times a day, (28) 71.8 % in adhering to a good diet, (20) 51.3% in performing physical activity, (07) 18% in using medication; (04) 10.2% had no difficulties and (01) 2.6% others, with this, it was evidenced that food was the greatest difficulty for these women. According to Table 2.

On the other hand, in a study, 67% of patients were able to succeed in treatment using only dietary measures, without the need for medication during the gestational period. In addition, daily blood glucose monitoring helped control for a good management of the disease in pregnant diabetic women [16].

**Table 2:** Difficulty in controlling DM.

Variable	N (%)
Difficulties in:	
Check blood glucose	14 (35,9)
Adhere to good nutrition	28 (71,8)
Perform physical activity	20 (51,3)
Use medication	07 (18)
Had no difficulties	04 (10,2)
Others	01 (2,6)

Source: prepared by the authors based on research data

With regard to the signs and symptoms of DM, (24) 61.5% say they do not know how to recognize them and (15) 38.5% know how to identify them, in addition (37) 94.9% of the women state that they DM brings risks to the baby and in relation to the restriction of breastfeeding, (20) 51.3% stated that they could not inform. A study carried out showed that previous or gestational DM bring maternal and fetal risks, with the most frequent complications being fetal macrosomia, prematurity, jaundice, neonatal hypoglycemia, large for gestational age (LGA) newborns, sepsis and fetal death [17].

In addition, the Brazilian Society of Diabetes (2019), states that there is no restriction on breastfeeding and backs on the importance of encouraging the practice of exclusive breastfeeding for more than 6 months of life, since it is an effective intervention and should be encouraged. by the multidisciplinary team, in addition to providing countless benefits to the baby [5].

Concerning the knowledge related to the differentiation between T1DM, T2DM and GDM, (20) 51.3% stated that they did not know how to distinguish them, while (19) 48.7% knew how to differentiate them. Of those who claim to know how to distinguish them, (01) 5.3% had incomplete elementary school, (01) 5.3% had completed elementary school, (02) 10.5% incomplete high school, (8) 42.1% complete secondary education, (03) 15.8% incomplete higher education and (03) 15.8% complete higher education. As shown in Table 3.

In a study carried out by Ramos KA and Prudêncio FA (2020), it was noted that the level of education was considered relatively low, 50% had incomplete elementary education. It can be observed that the testimonies were deficient and superficial, as most reported not knowing what the disease actually was, even the lack of knowing

the difference between T1DM and T2DM. The lack of knowledge of the concept can be explained by a low level of instructions to patients and the lack of actions in health education for this public [18].

**Table 3:** Association of the education and knowledge variable.

Variable	n (%)
Education	
Incomplete elementary school	01 (5,3)
Complete primary education	01 (5,3)
Incomplete high school	02 (10,5)
Complete high school	08 (42,1)
Incomplete Higher Education	03 (15,8)
Complete Higher Education	03 (15,8)

Source: prepared by the authors based on research data

As for the professionals that pregnant women consulted during prenatal care, (39) 100% consulted with a doctor, (12) 30.8% with a nutritionist, (16) 41% with a nurse and (03) 7.7% included other types of professionals. As shown in table 04. Having a multidisciplinary team of professionals in the clinical management of women with diabetes optimizes glycemic monitoring, medication regimens and lifestyle. In addition, it enables planning throughout the gestational and post-gestational period, thus reducing risks and ensuring quality health care [19,20].

**Table 4:** Professionals that pregnant women consulted during prenatal care.

Variable	n (%)
Consultation with professionals	
Doctor	39 (100)
Nutritionist	12 (30,8)
Nurse	16 (41)
Others	03 (7,7)

Source: prepared by the authors based on research data

Regarding the reception of the multidisciplinary team with the pregnant woman, (37) 94.9% say they were welcomed and this reception favored (33) 84.7% in self-care during pregnancy. In contrast to a study carried out with North American women diagnosed with Pre-Gestational Diabetes Mellitus (DMPG), it was evidenced that the health teams in which they were treated were not welcoming, which hindered the ideal clinical management. Most women found interactions with professionals difficult and point to the support of the healthcare team as fundamental during pregnancy and, in the absence of this support, they were irritated, shocked and frustrated [20].

It was identified through the guidelines of the multidisciplinary team that, (38) 97.4% claim to have received information about food; (32) 82% about checking blood glucose; (28) 71.8% about physical activity; (18) 46.1% on the correct use of medication; (04) 10.2% on breastfeeding and (03) 7.7% others, as shown in Table 5. In view of the exposed data, (34) 87.2% consider the effectiveness of these guidelines.

Thus, the role of the multidisciplinary team is important to optimize treatment from diagnosis and thus promote health education

practices, enable good metabolic control, prevent complications and ensure women's health and quality of life. The establishment of a link is fundamental for the effectiveness of the guidelines for the pharmacological and non-pharmacological treatment of DM [21,22].

**Table 5:** Guidelines of the multidisciplinary team.

Variable	n (%)
Guidelines	
Food	38 (97,4)
Glycemic check	32 (82)
Physical activity	28 (71,8)
Correct use of medications	18 (46,1)
Breastfeeding	04 (10,2)
Others	03 (7,7)

Source: prepared by the authors based on research data

## Conclusion

This study addressed the importance of a multidisciplinary intervention for the self-care of women who become pregnant and have a previous diagnosis of diabetes mellitus. Qualified assistance allows these women to feel welcomed and well cared for, facilitating the self-care process during pregnancy. In addition, DM is a public health problem and when not properly treated, it can bring complications to the mother-child binomial during the gestational period.

It was possible to verify that the reception of the team with the pregnant woman was efficient and helped in self-care, but some factors interfered in this process, highlighting the difficulty of adhering to adequate food and socioeconomic status. In addition, it was observed that, despite the multidisciplinary team assisting in the process, most women had a lack of knowledge, which interfered with good adherence to treatment. With this, it is necessary to introduce continuing education in health units, emphasizing the nurse, as he is taught since graduation to be a facilitator of care, so that he can disseminate knowledge and thus practice quality health education.

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