



Effect of Nursing Intervention on Maternal and Infant Outcomes in Patients with Gestational Diabetes Mellitus¹

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Abstract

Objective: This study aimed to analyze the impact of nursing intervention on maternal and infant outcomes in gestational diabetes mellitus. **Methods:** A total of 108 cases of gestational diabetes mellitus at our hospital between January 2020 and December 2021 were randomly assigned to either the experimental group or the control group, each comprising 54 cases. The control group received routine nursing intervention, while the experimental group received comprehensive nursing intervention. The effects of the interventions were analyzed. **Results:** The rate of natural delivery in the experimental group was higher than that in the control group, and there was a greater improvement in blood glucose levels and psychological state compared to the control group ($P < 0.05$). **Conclusion:** Comprehensive nursing intervention can help maintain healthy blood glucose levels in patients with gestational diabetes mellitus. Furthermore, it can alleviate patients' psychological distress, improve their compliance, and thereby enhance their overall health while reducing the incidence of adverse events.

Keywords

Gestational Diabetes Mellitus, Maternal and Infant Outcomes, Comprehensive Nursing, Patient Satisfaction

Gestational diabetes is a common complication during pregnancy, leading to abnormal sugar metabolism in the patient's body post-pregnancy, resulting in elevated blood sugar levels. This condition increases the risk of miscarriage, premature birth, and other adverse events [1, 2]. Additionally, pregnant women are more susceptible to infection and postpartum hemorrhage during delivery, which can significantly impact maternal and infant outcomes. Regular prenatal check-ups are crucial for patients with gestational diabetes to monitor the progression of their condition. Moreover, the provision of comprehensive and systematic nursing intervention can effectively help patients manage blood sugar levels and reduce the occurrence of high-risk events to ensure the safety of both mothers and infants [3]. This study presents an analysis of the application effects of comprehensive nursing intervention for gestational diabetes patients admitted to our hospital.

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1. General information and methods

1.1 General information

The random number method was used to divide 108 patients with gestational diabetes admitted to our hospital from January 2020 to December 2021 into groups, with 54 cases in the experimental group and the control group. The average age of the experimental group was (28.18±4.39) years old; The average age of the group was (28.26±4.53) years old, and there was no significant difference in general data, $P>0.05$.

1.2 Method

(1) Control group

Patients in the control group received routine nursing intervention, provided routine oral health guidance, understood the changes in blood sugar levels of the patients, informed the patients of the correct diet and exercise methods, and reminded the patients to undergo regular prenatal check-ups, etc.

(2) Experimental group

The experimental group received comprehensive nursing intervention as follows: (a) Conduct detailed nursing assessment on patients based on the doctor's diagnosis results, and develop a targeted comprehensive nursing intervention model for patients based on the nursing assessment results, integrating psychological care, health education, diet and exercise, and prenatal care etc., to provide nursing intervention to the patient. (b) Provide efficient psychological counseling for patients' negative emotions, help them reduce their fear and anxiety, inform patients that negative attitudes have a significant impact on the growth and development of the fetus, and guide patients to actively and correctly face their own diseases. Inform the patient of the correct way to vent negative emotions, obtain the cooperation of the patient's family, provide efficient psychological counseling to the patient, guide the family member on how to communicate with the patient correctly, and provide the patient with more care and attention so that the patient can feel the warmth of his family. Understand the patient's daily preferences and try to use some activities that the patient prefers to help distract the patient. At the same time, it can also relieve the patient's psychological pressure. (c) Understand the patient's comprehensive information such as weight, weight, gestational age, and daily dietary preferences and tastes, designate a targeted diet plan for the patient, ensure the diversity and effectiveness of the diet plan, and guide the patient and family members on how to correctly replace the diet Relevant foods in the plan. Provide patients with targeted exercise plans, and guide patients to choose the correct way to exercise during pregnancy. Organize patients with gestational diabetes to learn pregnancy yoga. During the process of patients learning and exercising, they are required to be accompanied by nursing staff or family members throughout the process to protect them. Safety for pregnant women. During exercise, pay attention to the patient's changes to ensure that the exercise intensity is appropriate, and stop the patient in time if there is any abnormality. (d) Instruct patients and their families to correctly self-monitor blood sugar, and inform them to record blood sugar changes correctly. If abnormalities occur, they should go to the hospital for examination in time, follow up with patients regularly, and remind them to have prenatal check-ups on time.

1.3 Observation indicators

(1) Compare the pregnancy outcomes between the two groups. (2) Compare blood sugar levels. (3) Compare psychological states.

1.4 Statistical analysis

Use SPSS24.0 software for data statistics and organization. Measurement data are represented by ($\bar{x} \pm s$). Count data are tested using chi-square. $p<0.05$ means the difference is statistically significant.

2. Results

2.1 Comparison of pregnancy outcomes between the two groups

In this study, there were 54 patients in the experimental group and the control group. The pregnancy outcome data of the two groups of mothers were statistically analyzed, as follows: In the experimental group, 47/54 (87.04%) had natural delivery, 2/54 (3.70%) had premature delivery, and 5/54 (9.26%) had cesarean section; In the control group, 38/54 (70.37%) had natural delivery, 5/54 (9.26%) had premature delivery, and 11/54 (20.37%) had cesarean section. The comparison results of the incidence rate of spontaneous delivery between the two groups of patients are as follows: $\chi^2=4.4747$, $P=0.0344$, the experimental group was higher than the control group, $P<0.05$.

2.2 Compare blood sugar levels

In this study, there were 54 patients in the experimental group and the control group. The blood sugar levels of the two groups of mothers were statistically analyzed, as follows:

Before nursing, the fasting blood glucose of the experimental group was (7.12 ± 0.85) mmol/L, the 2-h postprandial blood glucose was (8.04 ± 0.58) mmol/L, and the glycated hemoglobin was $(8.47 \pm 1.03)\%$; the fasting blood glucose of the control group was (7.00 ± 0.74) mmol/L, Blood glucose 2 hours after meal (8.13 ± 0.64) mmol/L, glycosylated hemoglobin $(8.30 \pm 1.11)\%$, there was no significant difference between groups, fasting blood glucose ($t=0.7825$, $p=0.4357$), blood glucose 2 hours after meal ($t=0.7657$, $p=0.4455$), glycosylated hemoglobin ($t=0.8250$, $p=0.4112$), $P>0.05$.

After nursing, the fasting blood glucose of the experimental group was (5.04 ± 0.47) mmol/L, the 2-h postprandial blood glucose was (6.74 ± 0.52) mmol/L, and the glycated hemoglobin was $(6.40 \pm 0.87)\%$; the fasting blood glucose of the control group was (5.96 ± 0.39) mmol/L. The 2h postprandial blood glucose (7.28 ± 0.45) mmol/L and the glycated hemoglobin $(7.37 \pm 0.80)\%$ were better than those of the control group. Fasting blood glucose ($t=11.0696$, $p=0.0000$) and 2h postprandial blood glucose ($t=5.7704$, $p=0.0000$), glycosylated hemoglobin ($t=6.0310$, $p=0.0000$), $P<0.05$.

2.3 Comparing psychological states

In this study, there were 54 patients in the experimental group and the control group. The psychological status of the two groups of mothers was statistically analyzed, as follows: Before nursing, the experimental group had SAS (54.86 ± 4.07) points and SDS (56.79 ± 4.87) points; the control group had SAS (54.43 ± 4.28) points and SDS (57.00 ± 4.62) points. The comparison results of mental status between groups before nursing were SAS ($t=0.5350$, $p=0.5938$) and SDS ($t=0.2299$, $p=0.8186$). The difference was not significant, $P>0.05$. After nursing, the experimental group had SAS (42.03 ± 3.86) points and SDS (43.17 ± 4.05) points; the control group had SAS (45.39 ± 3.82) points and SDS (46.08 ± 4.19) points. The comparison results of the nursing mental state between groups were SAS ($t=4.5466$, $p=0.0000$) and SDS ($t=3.6696$, $p=0.0004$). The experimental group was better than the control group, $P<0.05$.

3. Discussion

Gestational diabetes has a high incidence rate among pregnant women at this stage. The occurrence of this disease will have many adverse effects on the health of the pregnant woman and the fetus. Therefore, efficient adjustment and treatment are needed during pregnancy to ensure the safety of mothers and babies. Comprehensive nursing intervention for pregnant women during pregnancy can help them realize the importance of the disease more comprehensively and systematically, and at the same time give them sufficient attention to themselves, so as to improve the compliance of pregnant women and thereby maintain good blood sugar levels [4]. Affected by the condition, pregnant women will have certain worries about themselves and the condition of their fetuses, resulting in tension, anxiety, and even depression. Nursing staff provide efficient psychological counseling for pregnant women's bad mentality, combined with comparisons between pregnant women. Comprehensive information analysis helps relieve psychological stress. Obtaining support from family members allows patients to feel the care and care of their families and helps pregnant women build confidence in treatment [5]. Targeted diet and health guidance based on the different situations of pregnant women can appropriately adjust the dietary status and blood sugar levels of pregnant women. A diverse diet plan can prevent pregnant women from being irritable and resistant to being affected by a single diet during the period of regulating blood sugar. Coupled with correct pregnancy exercise, it can effectively reduce the patient's blood sugar level, maintain a stable state, and also play a very important role in promoting natural childbirth [6, 7]. Pregnant women can avoid injuries by taking good sports protection and maintaining appropriate exercise regularly every day to improve their health. Learning the correct self-monitoring method of blood sugar can detect abnormal blood sugar changes in a more timely manner and make adjustments, record blood sugar changes, and conduct regular prenatal checkups. Nursing staff can help patients adjust their diet and exercise plans based on their blood sugar changes [8]. The natural delivery rate of the experimental group was higher than that of the control group, and the improvement of blood sugar level and mental state was better than that of the control group, $P<0.05$.

4. Conclusion

In summary, psychological care can help patients maintain a good attitude, reduce the probability of negative emotions, relieve patients' anxiety, cooperate with treatment with a good attitude, improve compliance, and accelerate the relief of symptoms and recovery from the disease.

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