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Information-based continuous nursing on pregnant women with gestational diabetes mellitus

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Abstract. – OBJECTIVE: Gestational diabetes mellitus (GDM) is a serious pregnancy complication, and women with undiagnosed diabetes mellitus can develop chronic hyperglycemia during pregnancy. The purpose of this study is to investigate the impact of information-based continuity of care on glucose levels, health awareness, and maternal and infant outcomes in pregnant women with GDM, thereby providing a basis for the clinical implementation of effective interventions for GDM to reduce or avoid adverse outcomes due to GDM.

PATIENTS AND METHODS: One hundred and sixty cases of pregnant women with GDM who underwent treatment in the obstetrics and gynecology department of our hospital from June 2019 to September 2021 were randomly selected as the study population and divided into the control group (n=80) and the study group (n=80). Women in the control group were received with conventional nursing intervention, and those in the study group were obtained with information-based continuity of care on the basis of the control group. Basic clinical data were collected. The levels of fasting blood glucose (FBG), 2h postprandial glucose (2hPG), knowledge of health education, treatment compliance scores, and changes in delivery outcomes were compared between the two groups. According to the maternal blood glucose control level, 160 pregnant women with GDM were divided into the better control group (143 cases) and the poor control group (17 cases). The risk factors affecting the level of maternal glycemic control in gestational diabetes were analyzed.

RESULTS: After the intervention, the levels of FBG and 2hPG were significantly lower in both groups than those before the intervention, while the levels of FBG and 2hPG in the study group were notably lower than those in the control group. The health education knowledge score and treatment compliance score after the intervention were significantly higher than those before the intervention, and the health education knowledge score and treatment compliance score in the study group were observably higher than those in the control group ($p<0.01$). The adverse pregnancy outcomes of pregnant women in the study group were significantly reduced compared with those in the control group ($p<0.05$). Logistic regression analysis showed that body mass index (BMI), dietary control, literacy, and information-based continuity of care were all influential factors for maternal glycemic control level ($p<0.05$). Among the influencing factors, dietary control and continuity of care had clinical value in predicting maternal glycemic control levels in gestational diabetes.

CONCLUSIONS: Continuous nursing based on informatization can effectively control the blood glucose level of pregnant women with GDM, improve the treatment compliance of pregnant women and the awareness rate of gestational diabetes knowledge so as to reduce the occurrence of adverse pregnancy outcomes and improve the health level. In addition, BMI and dietary control are independent risk factors that affect the blood glucose control level of pregnant women. Relevant intervention measures should be formulated according to the relevant influencing factors to effectively control the blood glucose level of pregnant women with GDM and improve maternal and infant outcomes.

Key Words:
Information platform, Continuous nursing, Gestational diabetes care, Application effect.

Introduction

Gestational diabetes mainly occurs in the middle and late pregnancy. With the increase of gestational age, the fetus has an increased demand for nutrients and obtains glucose from the mother through the placenta. In order to maintain nor-

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mal glucose metabolism, the maternal insulin requirement must increase accordingly. Therefore, abnormal glucose tolerance occurs in pregnant women with limited insulin secretion after pregnancy due to the inability to compensate for this physiological change during pregnancy, which leads to the occurrence of gestational diabetes mellitus (GDM). According to relevant statistics, over 15% of pregnant women worldwide are in hyperglycemia during pregnancy, of which 85% of pregnant women have gestational diabetes[1]. The incidence rate of gestational diabetes in China is around 18%[1]. Currently, China has become the largest diabetes country in the world, with an increasing overall trend year by year. It has been demonstrated that the hyperglycemic environment of pregnant women with GDM will have different effects on pregnant women themselves and their fetuses[2]. For women with GDM, the risk of gestational hypertensive disorders, postpartum hemorrhage, and premature rupture of membranes is significantly increased compared to women with normoglycemia during pregnancy[3]. At present, more attention is paid to the pre-pregnancy condition of pregnant women with GDM in clinic, while less attention is focused on the related rehabilitation treatment and health guidance after pregnancy, thereby resulting in the lack of professional guidance and poor blood sugar control ability for pregnant women after discharge from hospital. Therefore, the corresponding nursing intervention for pregnant women plays an important role in strengthening their blood sugar control. However, the traditional nursing model cannot cope with the increasing number of pregnant women. Therefore, in order to improve medical quality, changing the service model has become an important event in the current obstetric nursing work.

Continuing nursing is a kind of service that continues to provide nursing after pregnant women are discharged from the hospital. It ensures pregnant women get health care services with continuous nursing to better evaluate the risk factors and properly deal with various emergencies after pregnancy[4,5]. However, the effect of continuous nursing on the blood sugar control level and health awareness of pregnant women with gestational diabetes is not clear, and there is no relevant report on the influencing factors of the blood sugar control level of pregnant women.

In this study, pregnant women with GDM treated in our hospital were selected as the research objects, and they were subjected to continuous nursing based on information technology. Through the network information platform, a convenient communication platform was provided for pregnant women with GDM to realize dynamic management of pregnant women with GDM, which can explore the impact of this nursing method on blood glucose, health awareness, and maternal and infant outcomes in patients GDM, and to provide theoretical basis and scientific guidance for establishing an effective and feasible continuous nursing model for patients with GDM.

Patients and Methods

Study Design

A total of 160 pregnant women with GDM who were treated in our hospital from June 2019 to September 2021 were retrospectively selected as the research subjects. The patients were randomly divided into the study group and the control group according to different nursing methods (80 cases in each group). Pregnant women in the control group received routine nursing intervention. Pregnant women in the study group received information-based continuous care on the basis of the control group. The changes in fasting blood glucose (FBG) level, 2 h postprandial blood glucose level, health education awareness, treatment compliance score, and delivery outcome were observed in the two groups. According to the blood glucose control level of pregnant women, they were further divided into the better control group and the worse control group. Finally, the risk factors affecting the blood glucose control level of pregnant women with GDM were analyzed by ROC curve.

Clinical Information

The patients were randomly divided into the study group and the control group according to different nursing methods, with 80 cases in each group.

Inclusion criteria: (1) All pregnant women conformed to the standard of diagnosis and treatment for GDM[6]. The diagnosis was confirmed by oral glucose tolerance test (Oral glucose was purchased from Shanghai Yanjin Biotechnology Co., Ltd., No. 9138 Beiqing Road, Qingpu District, Shanghai, China; product number: Js11050-25 g; brand YOYOBIO); (2) The FBG of pregnant women exceeded 7.0 mmol/L, and the blood glucose exceeded 11.0 mmol/L one hour after taking sugar; (3) The maternal age was over 20 years old; (4) Pregnant women and their families had informed consent and signed the informed con-

sent; (5) Medical records were complete. Participants could cooperate with treatment and could use WeChat or telephone to finish the post-hospital follow-up after discharge.

Exclusion criteria: (1) Pregnant women who had symptoms of diabetes, such as polydipsia, polydipsia, polyuria or weight loss before pregnancy or those who had made a definite diagnosis as diabetes. (2) Pregnant women who took antibiotics and other drugs or sugary foods before participating in the study; (3) Pregnant women who had inflammatory diseases such as inflammatory bowel disease, hypertension and autoimmune diseases. (4) Pregnant women with severe insufficiency of heart function or liver and kidney function; (5) Pregnant women were accompanied by mental illness and were unable to cooperate with treatment.

Methods

(1) Pregnant women in the control group received routine nursing intervention. Pregnant women were guided to follow the doctor's advice for symptomatic treatment and were explained all precautions during delivery to pregnant women. During hospitalization, pregnant women were examined, and corresponding psychological interventions were carried out for the problems of pregnant women. The details of psychological interventions were as follows: explained in detail to the mother the labor process, uterine contractions and delivery, the specific clinical manifestations of each stage of labor, and the adverse reactions and precautions that may occur after childbirth. They realized that childbirth was a normal physiological process with reduced tension. Routine examination was carried out before delivery, and possible adverse reactions should be informed, thereby guiding pregnant women to treat the delivery with the most positive and healthy attitude. In the process of delivery, lying-in women were guided for the cooperation methods: in the first stage of labor, women with vaginal labor could use yoga balls under the guidance of nurses to speed up the opening of the uterus and relieve contraction pain. After cervix dilation in the second stage of labor, the mother strictly followed the requirements of the midwife. Pregnant women were also guided to hold their breath, use abdominal pressure downward force, plus the cooperation of the fetus, and push the fetus to the cervical mouth again and again. If the method was appropriate and the fetus was not large, the fetus could be delivered in half an hour without a lateral incision. The placenta was delivered in the third stage of labor, and the mother could relax at this time. After delivery, lying-in women were encouraged to breastfeed their babies as soon as possible. Lying-in women were encouraged to carry out rehabilitation training and maintain a happy mood. After the lying-in women were discharged from the hospital, they were informed of precautions such as diet, activities and medication and followed up through WeChat or telephone.

(2) Pregnant women in the study group received information-based continuous care on the basis of the control group.

Establishment of an information-based continuous nursing team. According to the actual situation, medical staff with rich clinical experience were selected to form an intervention group. The medical staff received a one-week collective training to enhance team awareness and professional knowledge. Then, the medical staff conducted the nursing intervention plan. Pregnant women were given diet intervention, exercise intervention, and psychological intervention during hospitalization as follows.

a. Dietary intervention: pregnant women were given food with high protein, high fiber, and less or no high sugar, high fat, and high calorie. In addition, pregnant women were guided to have meals a day but less food at each.
b. Exercise intervention: pregnant women were guided to take appropriate exercise, such as yoga and postprandial walking. Also, pregnant women did not take strenuous exercise. Pregnant women were also guided to carry out reasonable and moderate exercise in a comfortable, tidy, and quiet environment, including the relaxation exercises of the head, limbs, and other muscles. They were also guided to follow the music to complete a series of relaxation training to achieve the purpose of soothing emotions.
c. Psychological intervention: the precautions related to gestational diabetes and other precautions related to the delivery period were introduced to pregnant women by the medical staff. Explained in detail to the mother the labor process, uterine contractions and delivery, the specific clinical manifestations of each stage of labor, and the adverse reactions and precautions that may occur after childbirth.

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d. Discharge intervention: after discharge, lying-in women continued to use the network platform to continue nursing intervention during hospitalization. Additionally, gestational diabetes-related health education knowledge was pushed on the network platform, and notices about holding gestational diabetes-related lectures were sent regularly. Meanwhile, the problems encountered by lying-in women were answered in a timely manner by using calculation or query tools on the platform. Also, a first-level warning was issued when the reported data were abnormal, and a questionnaire survey on the basic knowledge of gestational diabetes was designed to evaluate the mastery of lying-in women.

Outcome Measures

(1) Collection of basic clinical information: the basic clinical information of pregnant women in two groups was collected, including the age, BMI, gestational weeks, height, monthly family income, education level, mode of delivery, newborn gender, and fertility circumstance.

(2) The level of FBG and 2 h postprandial blood glucose (2hPG) was recorded before and after the intervention.

(3) Health education awareness and treatment compliance score: the self-made health education guidance questionnaire was used to evaluate the awareness of health education before and after intervention. The scale included 10 items, and each item was scored according to 0 points for unknown knowledge, 1 point for partial knowledge, and 2 points for knowledge. The total score ranged from 0 to 20. The higher the score was, the higher the awareness of pregnant women on health education for GDM was. The compliance questionnaire was used to evaluate the treatment compliance of pregnant women in two groups before and after intervention. The scale included 7 items. The patients were scored 1 if they could not do it at all, scored 2 if they occasionally did it, and scored 3 if they often did it. The higher the score was, the higher the treatment compliance of pregnant women.

(4) Comparison of pregnancy outcomes: the delivery outcomes of pregnant women in the two groups were compared, including premature delivery, postpartum hemorrhage, low birth weight, and neonatal asphyxia.

(5) Analysis of influencing factors of blood glucose level control: if the blood glucose level of pregnant women was lower than 7.2 mmol/L and the 2 hPG level was lower than 9 mmol/L, it was regarded as the better control group (143 cases). If the glycemic control level of pregnant women was higher than 8.8 mmol/L and the 2hPG level was higher than 11.1 mmol/L, it was regarded as the worst control group (17 cases). The risk factors of glycemic control in pregnant women with GDM were analyzed.

Statistical Analysis

SPSS 22.0 software (SPSS Inc., Armonk, NY, USA) was used in this study for the statistical data analysis and $p<0.05$ was considered as the statistical significance.

The enumeration data between groups were compared using χ^2 text and were expressed in [n (%)]. The measurement data between two groups were compared using independent sample *t*-test and were expressed in ($x\pm s$). Logistic binary regression analysis was used to analyze the risk factors of glycemic control in pregnant women with GDM. Receiver operating characteristic curve (ROC) was used to analyze the clinical value of influencing factors in predicting the level of glucose control in pregnant women with gestational diabetes.

Results

General Profile Selection Process

A total of 246 pregnant women with GDM was included in this study. By screening based on the inclusion and exclusion criteria, 45 patients with pre-pregnancy diabetes and 18 with infectious diseases were excluded. In addition, 12 cases with missing baseline information and 11 cases with missing follow-up data were excluded, and 160 pregnant women with GDM were finally included. The general data selection process is shown in Figure 1.

Comparison of Basic Clinical Information Between Two Groups

There was no significant difference between the two groups in clinical basic data, including maternal age, body mass index (BMI), gestational weeks, height, monthly family income, educational level, delivery mode, and fertility circumstance ($p>0.05$, Table I).

Comparison of FBG and 2hPG Levels Between the Two Groups Before and After Intervention

There was no significant difference in the levels of FBG and 2hPG between the two groups before

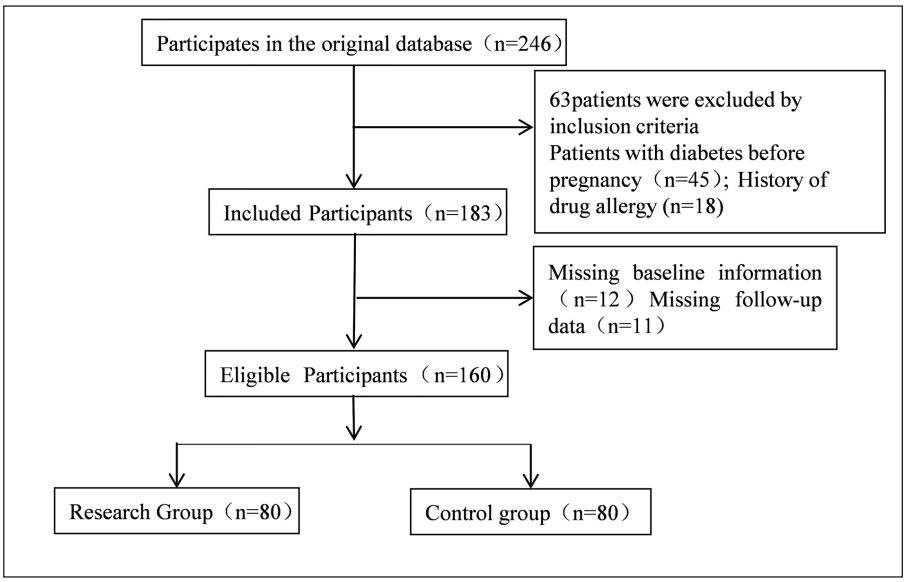

Figure 1. Flow chart of general information selection.

intervention (p>0.05). After the intervention, the levels of FBG and 2hPG in the two groups were significantly lower than those before the intervention, and the levels in the study group were much lower than those in the control group (p<0.01, Table II).

Comparison of Health Education Awareness and Treatment Compliance Between Two Groups of Pregnant Women Accompanied by Gestational Diabetes Mellitus

Before the intervention, there was no significant difference in the scores of health education awareness and treatment compliance between the two groups of GDM (p>0.05). After the intervention, the scores of health education awareness and treatment compliance in the two groups were significantly higher than those before the intervention (p<0.05), and the scores in the study group were much higher than those in the control group (p<0.01, Table III).

Comparison of Pregnancy Outcomes Between Two Groups of Pregnant Women Accompanied by Gestational Diabetes Mellitus

Compared with the control group, the premature delivery, postpartum hemorrhage, low birth

Table I. Comparison of basic clinical information between two groups ($\bar{x}$±s), [n (%)].

Groups	The study group (n=80)	The control group (n=80)	χ^2/t	p
Age (year)	32.18±6.20	34.24±7.96	1.826	0.070
BMI (kg/m^2)	23.32±3.68	23.85±2.84	1.020	0.309
gestational weeks (week)	28.23±1.83	28.54±1.75	1.095	0.275
Height (cm)	163.52±5.38	162.62±6.52	0.952	0.342
Monthly family income (CHY)			1.667	0.197
≤4,000	28 (35.00)	36 (45.00)		
>4,000	52 (65.00)	44 (55.00)		
Educational level (%)			0.700	0.705
Bachelor's degree or above	13 (16.25)	17 (21.25)		
Junior college	36 (45.00)	35 (43.75)		
High school and below	31 (38.75)	28 (35.00)		
Delivery mode (%)			0.626	0.731
Cesarean section	15 (18.75)	17 (21.25)		
Natural childbirth	44 (55.00)	39 (45.75)		
Both are acceptable	21 (26.25)	24 (30.00)		
Fertility circumstance (%)			1.026	0.311
Primipara	57 (71.25)	51 (63.75)		
Multiparity	23 (28.75)	29 (36.25)		

Table II. Comparison of FBG and 2hPG levels between the two groups before and after intervention ($\bar{x}$±s).

Groups	Cases	FBG (mmol/L)		2 h PG (mmol/L)	
		Before the intervention	After the intervention	Before the intervention	After the intervention
The control group	80	8.52±1.29	7.42±0.89	12.35±2.01	9.40±2.18
The study group	80	8.73±1.16	5.84±1.78	12.42±1.78	7.51±2.13
t		1.083	7.101	0.233	5.547
p		0.281	<0.001	0.816	<0.001

Note: FBG: fasting blood glucose; 2hPG: 2h postprandial blood glucose.

Table III. Comparison of health education awareness and treatment compliance between two groups of pregnant women accompanied by gestational diabetes mellitus ($\bar{x}$±s).

Groups	Cases	The scores of health education awareness		The scores of treatment compliance	
		Before the intervention	After the intervention	Before the intervention	After the intervention
The control group	80	6.23±1.25	11.33±2.18	8.75±1.26	14.25±2.17
The study group	80	6.57±1.18	16.75±1.47	8.44±1.30	18.22±2.69
t		1.769	18.438	1.532	10.274
p		0.079	<0.001	0.128	<0.001

weight, and neonatal asphyxia in the study group were significantly reduced (p<0.05, Table IV and Figure 2).

Single Factor Analysis of Glycemic Control in Pregnant Women Accompanied By Gestational Diabetes Mellitus

The results of univariate analysis showed that there were significant differences in BMI, diet control, education level and nursing methods between the better control groups and the worse control group (p<0.05, Table V).

Binary Logistic Regression Analysis of Blood Glucose Control Level in Pregnant and Lying-In Women with Gestational Diabetes Mellitus

Taking the factors with statistical significance in Table V as independent variables, the glycemic control level of pregnant women accompanied

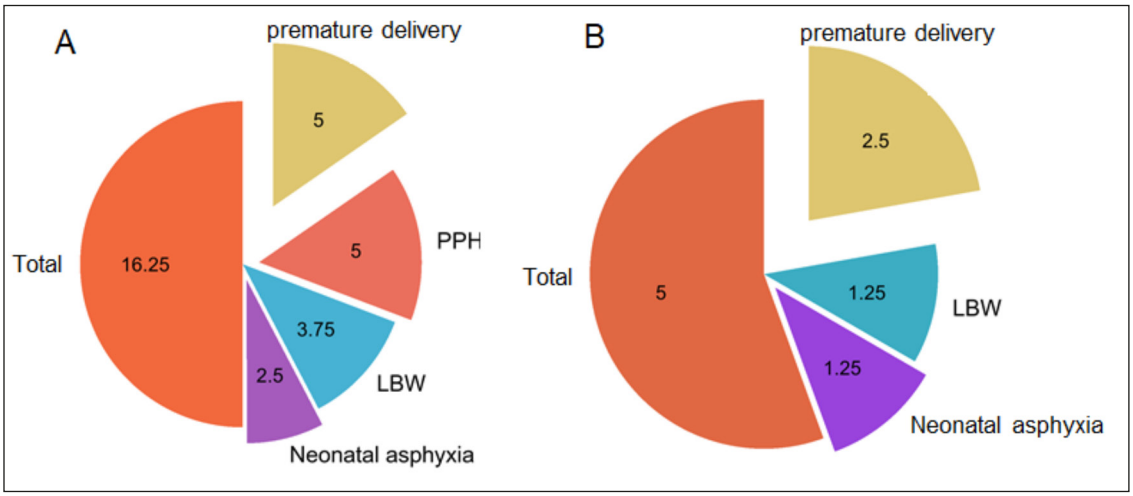

Figure 2. Comparison of pregnancy outcomes between two groups of pregnant women accompanied by gestational diabetes mellitus cases. **A**, The control group. **B**, The study group. PPH: postpartum hemorrhage; LBW: low birth weight.

Table IV. Comparison of pregnancy outcomes between two groups of pregnant women accompanied by gestational diabetes mellitus cases (%).

Groups	Cases	Premature delivery	Postpartum hemorrhage	Low birth weight	Neonatal asphyxia	Total
The control group	80	4 (5.00)	4 (5.00)	3 (3.75)	2 (2.50)	13 (16.25)
The study group	80	2 (2.50)	0 (0.00)	1 (1.25)	1 (1.25)	4 (5.00)
χ^2						5.331
p						0.021

by gestational diabetes was used as the dependent variable to conduct binary Logistic regression analysis. The results showed that BMI and alimentary control were the risk factors affecting the glycemic control level of pregnant women, while education level and informatization-based continuing nursing were the protective factors ($p<0.05$, Table VI).

ROC Curve Analysis of the Predictive Value of Various Factors for Glycemic Control in Pregnant Women Accompanied by Gestational Diabetes Mellitus

The results of ROC curve analysis showed that the areas under the curve of BMI, diet control, educational level, and information-based nursing were 0.682, 0.721, 0.654, and 0.795, respectively, and the sensitivity and specificity were 62.61%, 79.41%, 57.58%, and 96.21%, respectively, as well as 83.66%, 65.31%, 92.74%, 66.69%, severally. Among the influencing factors, dietary control and continuous nursing have certain clinical value in predicting the blood sugar control level of pregnant women with gestational diabetes mellitus (Table VII and Figure 3).

Discussion

GDM is a common pathological pregnancy with endocrine abnormalities during pregnancy, which occurs in the second trimester of pregnancy with high progesterone levels. Studies[7,8] at home and abroad show that GDM may increase the incidence of fetal malformation, neonatal hypoglycemia, and other complications, and also enhance the risk of type 2 diabetes and metabolic syndrome after childbirth. More importantly,

Table V. Single factor analysis of glycemic control in pregnant women accompanied by gestational diabetes mellitus (%). ($\bar{x}$±s), [n (%)].

Groups	The better control group (n=143)	The worse control group (n=17)	χ^2/t	p
Age (year)	30.49±5.43	32.34±5.37	1.330	0.186
BMI (kg/m^2)	23.52±2.45	25.74±3.51	3.358	0.001
gestational weeks (week)	27.47±3.31	28.51±2.28	1.259	0.210
Alimentary Control	3.18±0.84	1.71±0.96	6.718	< 0.001
Monthly family income (CHY)			0.889	0.345
≤4,000	50 (34.97)	4 (23.53)		
> 4,000	93 (65.03)	13 (76.47)		
Educational level (%)			6.850	0.033
Bachelor's degree or above	29 (20.28)	1 (5.88)		
Junior college	66 (46.15)	5 (29.41)		
High school and below	47 (32.87)	11 (64.71)		
Fertility circumstance (%)			0.083	0.774
Primipara	96 (67.13)	12 (70.59)		
Multiparity	47 (32.87)	5 (29.41)		
Continuous nursing based on informatization			7.964	0.005
yes	77 (53.85)	3 (17.65)		
no	66 (46.15)	14 (82.35)		

Table VI. Binary Logistic regression analysis about glycemic control level in pregnant women accompanied by gestational diabetes mellitus.

Index	B value	Standard error	Wald value	*p*-value	OR value	95% CI	
						Lower limit	Upper limit
BMI	1.858	0.641	8.193	0.013	6.521	2.057	15.836
Alimentary control	1.970	0.648	7.932	0.002	6.651	1.846	16.525
Education level	-1.658	0.602	7.540	0.001	0.818	0.781	1.035
Informatization based continuing nursing	-2.124	1.025	7.841	0.002	0.172	0.861	1.127

B value: regression coefficient. Abbreviations: SE: standard error; Wald value: chi-square value; 95% CI: 95% confidence interval.

Table VII. ROC curve analysis of the predictive value of various factors for glycemic control in pregnant women with gestational diabetes mellitus.

	Area under curve	Standard error	Susceptibility (%)	Specificity (%)	*p*-value	95% CI	
						Lower limit	Upper limit
BMI	0.682	0.057	62.61	79.41	0.001	0.571	0.794
Alimentary control	0.721	0.047	57.58	96.21	< 0.001	0.629	0.814
Education level	0.645	0.049	83.66	65.31	0.008	0.459	0.740
Informatization based continuing nursing	0.795	0.044	92.74	66.69	< 0.001	0.709	0.882

95% CI: 95% confidence interval.

the impact of gestational diabetes on postpartum is still ongoing. Lying-in women should not only carry out strict blood sugar control during pregnancy but also continue to follow-up and intervene after delivery[9,10]. Therefore, it is particularly important to explore a convenient, fast and eco-

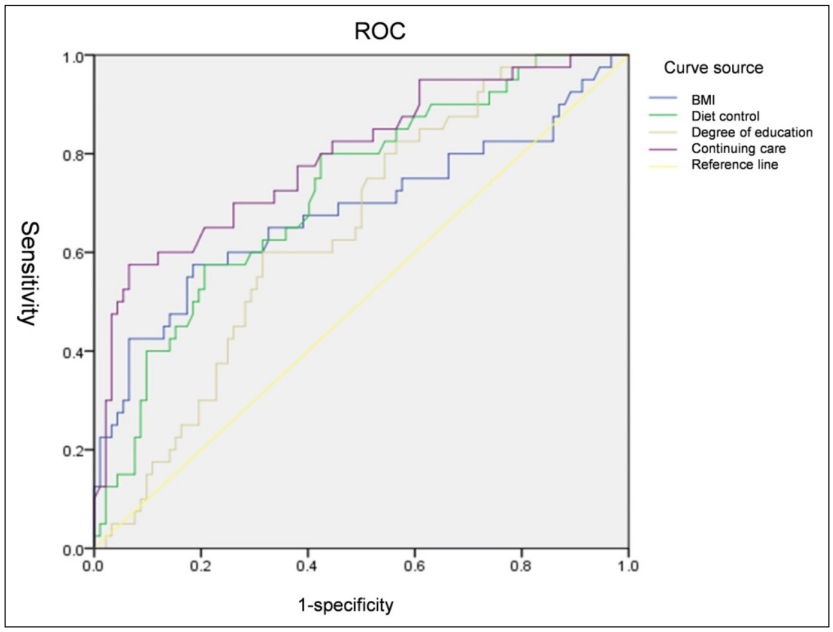

Figure 3. ROC curve analysis chart.

nomical whole-course health management mode for GDM. Here, pregnant women in the study group received continuing nursing based on the information platform. The results showed that continuing nursing based on information platforms could effectively reduce the blood glucose level of pregnant women accompanied by GDM and improve the cognition and treatment compliance of pregnant women to diabetes. It has been reported that continuing nursing for breast cancer patients also effectively improves the awareness rate of disease-related knowledge and treatment compliance of pregnant women[11]. The above study suggested that timely health education and care could better manage pregnant women accompanied by GDM and might prevent the occurrence of adverse outcomes.

Studies[12,13] have found that the offspring of gestational diabetes mothers are more susceptible to obesity, impaired glucose tolerance, and diabetes even in adolescence. If blood glucose is not controlled properly, the incidence of complications during delivery, fetus, and infant complications will increase. The incidence of neonatal birth weight, hypoglycemia, and macrosomia will be significantly reduced when the blood glucose of pregnant women is well controlled. In this study, the adverse outcomes of pregnant women were counted. The results showed that the adverse pregnancy outcomes of pregnant women in the study group were significantly lower than those in the control group. The previous study[14] has reported that systemic diabetes diet adjustment programs and treatment nursing intervention can significantly reduce the incidence of preeclampsia, proteinuria, premature delivery, premature rupture of membranes, postpartum infection, neonatal asphyxia, macrosomia neonatal pneumonia. The above results showed that effective control of maternal blood glucose played an important role in improving adverse outcomes.

The present study showed that BMI and alimentary control were the risk factors affecting the glycemic control level of pregnant women, while education level and informatization-based continuing nursing were the protective factors based on the binary Logistic regression analysis. The reason may be that with the increase of BMI, a large amount of adipose tissue accumulates in the patient's body to induce the occurrence of insulin resistance. Thus, the incidence of gestational diabetes in pregnant and lying-in women is higher. It has been reported that, by searching multiple databases, overweight or obese pregnant women have a significantly higher risk of gestational diabetes and a significantly higher incidence of adverse pregnancy outcomes compared with underweight or normal-weight pregnant women[15]. The educational level of pregnant and lying-in women directly affects the compliance of pregnant and lying-in women with nursing intervention. The higher the educational level, the higher the compliance of pregnant women with intervention, and the better the degree of glycemic control. In addition, diet control is an important part of blood sugar control. Compliance behavior and diet are directly related to the patient's cooperation in the treatment process, which in turn affects the quality of the patient's blood sugar control level. Pregnant women should be given a high-protein, high-fiber diet, more light diets such as soy products and fish, low-sugar foods, and less or no high-sugar, high-fat, and high-calorie foods[16]. By analyzing whether dietary intervention is associated with improved blood sugar or improved birth weight in pregnant women with gestational diabetes, it is found that compared with the control group, the fasting and postprandial blood glucose of the modified diet intervention are significantly reduced, and the birth rate is notably decreased. Thus, modified dietary interventions are thought to have beneficial effects on maternal blood glucose and birth weight. The above results show that maternal weight, diet, and so on are closely related to gestational diabetes and pregnancy outcomes[17]. However, it will not only aggravate the condition of pregnant women but also induce the occurrence of other pregnancy complications without effective glycemic control. Pregnant women should improve their self-management ability to effectively control blood glucose levels and improve their prognosis.

Conclusions

Information-based continuous nursing could effectively control the blood sugar level of pregnant women with GDM and improve maternal treatment compliance and awareness of GDM, thereby reducing the occurrence of adverse pregnancy outcomes and improving health. In addition, BMI and dietary control were independent risk factors affecting maternal blood glucose control, and relevant interventions should be formulated according to the relevant influencing factors to effectively control the blood glucose level of pregnant women with GDM and improve mater-

nal and infant outcomes. This study described the status quo of continuous nursing care in GDM and the related factors that affect the level of blood sugar control in patients and provided relevant evidence for clinical medical staff for the nursing and blood sugar management of patients with GDM. In addition, since pregnant women had little understanding of information management platforms, the sample size and research time should be increased in the later stage. In addition, effective measures for maternal blood sugar control should be formulated according to relevant influencing factors to effectively improve pregnancy outcomes. However, due to the limitations of time and conditions, there are still many influencing factors that are still unclear. Additionally, since the patient's disease course is in the process of continuous development, further research is needed on the impact of continuous nursing on pregnancy outcomes.

Conflict of Interest

The Authors declare that they have no conflict of interests.

Ethics Approval

This study was approved by the Medical Ethics Committee of Hunan Provincial Maternal and Child Health Care Hospital (Approval No. 202134) and was conducted in accordance with the Helsinki Declaration and its latest amendments.

Informed Consent

Pregnant women and their families signed the informed consent.

Data Availability

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Authors' Contribution

Y.-N. Li and H. Shi confirmed the authenticity of all the raw data and edited the manuscript, X. Zeng, S. Zhou, Z.-Y. Chen, X.-Z. Jia and L.-Q. Yang collected data and processed the data. J. Liu, L.-Y. Liu, M. Zou and X.-P. Zhou conducted the statistics. All authors read and approved the final manuscript.

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