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Study on the Construction of Whole-course Nursing Objective Management System for Patients with Type 2 Diabetes

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Abstract: *Objective:* To explore the effect of a whole-course nursing objective management system on disease control and quality of life in patients with type 2 diabetes, and to propose strategies for constructing such a system for these patients. *Methods:* Ninety patients with type 2 diabetes admitted to the Department of Endocrinology of the hospital from January 2024 to June 2024 were selected. The control group (n = 45) received routine nursing care, while the observation group (n = 45) received whole-course nursing. Indicators such as glucose metabolism and compliance behavior were measured before and after care, and the health and quality of life of patients in both groups were evaluated. *Results:* A comparison of blood glucose levels and compliance behavior showed that the observation group had lower blood glucose levels than the control group ($P < 0.05$). Additionally, the compliance behavior score of the observation group was higher than that of the control group ($P < 0.05$). *Conclusion:* The holistic nursing model demonstrates significant nursing effects for patients with type 2 diabetes. This approach not only assists in blood sugar control, prevents disease progression, and reduces complications, but also enhances patients' knowledge of health management, aiding in their recovery.

Keywords: Patients with type 2 diabetes; Whole nursing; Management system by objectives; Construction path

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1. Introduction

Type 2 diabetes mellitus (T2DM) is a chronic condition characterized by abnormal insulin secretion and is classified as an endocrine and metabolic disease that requires lifelong treatment. The complexity of its treatment often results in patients struggling to manage their behavior during the home-care phase following discharge. The lack of professional nursing supervision and guidance during this stage frequently leads to elevated blood glucose levels and the development of complications, which significantly impact the health of patients with type 2 diabetes.

The whole-process nursing management model integrates in-hospital care with out-of-hospital home-based continuous care. This patient-centered approach emphasizes comprehensive guidance during both the admission

and discharge phases. It includes providing patients with essential health knowledge, daily exercise routines, and health monitoring advice, thereby forming an efficient and high-quality closed-loop nursing service system.

This study analyzes the effects of whole-course nursing within the care services provided to patients with type 2 diabetes. It also explores strategies for constructing a comprehensive nursing objective management system to further improve the whole-course nursing service model and assist patients in achieving better disease control.

2. Materials and methods

2.1. General information

Ninety patients with type 2 diabetes admitted to the Department of Endocrinology of the hospital from January 2024 to June 2024 were included in this study. All patients met the WHO diagnostic criteria for diabetes. The patients were divided into an observation group and a control group based on their admission dates. The observation group consisted of 45 patients (23 males and 22 females), with 6 patients experiencing complications such as diabetic foot and vision loss. The mean age of this group was 68.28 ± 8.23 years. The control group included 45 patients (15 males and 30 females), with an average age of 70.61 ± 6.08 years; 8 patients in this group experienced complications such as diabetic foot and hypertension. There were no statistically significant differences in age, gender, or condition between the two groups ($P > 0.05$).

2.2. Methods

Ninety patients with type 2 diabetes were divided into an observation group and a control group. The control group received routine nursing care, while the observation group was provided with whole-process nursing. Data on patients' blood glucose levels and health awareness were compared between admission and discharge to clarify the advantages of the whole-process nursing model and to construct a comprehensive whole-process nursing objective management system.

2.2.1. Routine nursing in the control group

The nursing staff in the endocrinology department conducted blood glucose tests for hospitalized patients and collected basic information, such as details of daily medication, disease duration, and common medication side effects. Patients were provided with explanations about the causes and mechanisms of type 2 diabetes, treatment methods, and daily precautions [1]. Dietary guidance was also emphasized, with recommendations for a low-sugar, low-fat diet, adherence to the principle of eating small, frequent meals, and avoidance of spicy and stimulatory foods. Patients and their families were advised to regularly monitor blood glucose levels and incorporate appropriate exercise [2].

2.2.2. Comprehensive nursing in the observation group

The whole-process nursing care was divided into two stages: in-hospital care and post-discharge care, with tailored interventions for each stage.

(1) In-hospital care

(a) Psychological care: Nursing staff observed and inquired about patients' clinical symptoms, provided information on treatment methods and precautions, and emphasized dietary guidelines for type 2 diabetes. Attention was given to psychological and emotional changes, with counseling offered as needed [3].

(2) Post-discharge care

(a) Blood glucose monitoring and education: Before discharge, nursing staff conducted blood glucose tests, provided oral medication and insulin injection guidance, and distributed a type 2 diabetes home care manual. Follow-up questions regarding rehabilitation were also addressed.

(b) Follow-up care: Nursing staff made telephone follow-ups one-month post-discharge to inquire about recent blood glucose tests, clinical symptoms, and medication adherence. Specific guidance was provided on oral hypoglycemic drugs and insulin administration [4].

(c) Integration with community care: Patients were reminded to visit community hospitals for HbA1c and blood routine tests. A combination of community, discharge, and home-based nursing was emphasized to improve the whole-process nursing management system and help patients control their disease and enhance their quality of life [5].

2.3. Observation indicators

The compliance behavior and blood glucose changes of the 90 patients at admission and discharge were compared. This analysis aimed to identify differences between routine nursing and whole-process nursing, highlighting the importance of the latter in improving disease control, health awareness, mental well-being, and quality of life in patients with type 2 diabetes.

2.4. Statistical analysis

Data analysis was conducted using SPSS 22.0 software. The compliance behavior and blood glucose changes of the 90 patients were analyzed using t and χ^2-tests. A P-value of < 0.05 was considered statistically significant.

3. Results

3.1. Comparison of compliance behavior scores between the two groups at admission and discharge

The compliance behavior of patients in the control and observation groups was evaluated based on five parameters: dietary control as directed by the doctor, timely and quantitative eating, regular exercise, appropriate medication adherence, and self-monitoring of blood glucose. The data revealed that the quality of care in the whole-course nursing mode was significantly higher than that of the conventional nursing mode ($P < 0.05$), as presented in **Table 1**.

Table 1. Comparison of compliance behavior scores between the two groups [n (%)]

Items	Control group				Observation group			
	Upon admission	Upon discharge	χ^2	P	Upon admission	Upon discharge	χ^2	P
Control diet as directed by the doctor	28 (43.02)	31 (47.62)	0.279	> 0.05	29 (43.02)	61 (91.02)	34.392	< 0.01
Eat regularly and quantitatively	14 (21.54)	16 (20.35)	0.173	> 0.05	14 (20.91)	52 (76.02)	40.871	< 0.01
Exercise regularly	32 (48.23)	30 (52.13)	1.524	> 0.05	30 (47.72)	59 (88.02)	14.072	< 0.01
Take medication regularly and correctly	18 (46.69)	32 (49.02)	6.136	< 0.05	18 (26.87)	52 (86.35)	43.723	< 0.01
Self-monitor blood glucose	4 (6.15)	4 (11.27)	0.887	> 0.05	6 (8.96)	30 (44.72)	20.092	< 0.01

3.2. Comparison of blood glucose changes at admission and discharge between the two groups

The fasting and postprandial blood glucose levels of the two groups were compared at admission and discharge. The data indicated that the blood glucose levels of patients receiving whole-course nursing care were more stable, suggesting better disease control. The results are summarized in **Table 2**.

Table 2. Comparison of blood glucose changes at admission and discharge between the two groups [*n* (%)]

Groups	Number of cases	Upon admission	Upon discharge	χ^2	*P*
Control group	45	65 (100).	41 (63.05)	27.033	<0.01
Observation group	45	67 (100).	5 (7.56)	111.697	<0.01

4. Discussion

4.1. Strengthening diabetes health education during hospitalization and improving the whole-course nursing objective management system

Diabetes, as a chronic and incurable condition, requires long-term management. The prognosis depends on treatment effectiveness, and scientific and effective nursing guidance plays a crucial role in preventing or delaying complications. Early intervention has also shown significant benefits [6]. Based on the treatment data of 90 patients with type 2 diabetes admitted to the Endocrinology Department of the hospital, it is evident that the whole-course nursing model significantly improves prognostic outcomes, home nursing, and case management. Thus, it is imperative to develop a comprehensive nursing objective management system that integrates admission, discharge, and home nursing guidance into a closed-loop nursing service to enhance disease control and patient recovery [7].

Endocrinology nurses should focus on health education for patients with type 2 diabetes. This includes explaining the causes of diabetes, medication management, injection therapies, complications, and dietary precautions to patients and their families. Incorporating diabetes education into routine nursing care enhances health awareness, supports self-management, and helps patients better control their condition [8]. Additionally, insulin administration techniques should be demonstrated and explained in detail, including injection methods, rotation of injection sites, dosage adjustments, and timing. Patients and their families should also be educated on blood glucose meter operation and encouraged to record fasting and postprandial blood glucose levels. This information aids in understanding the condition and informs subsequent clinical treatment.

4.2. Providing comprehensive discharge health guidance and encouraging adherence to medical advice

Nursing staff should offer detailed health guidance to patients upon discharge, including instructions on daily diabetes care, oral and injectable medications, and dietary precautions. Distributing blood glucose monitoring forms and urging patients to record their glucose levels at home can facilitate ongoing health management [9].

Developing a diabetes health manual that systematically explains the disease, monitoring methods, glycated hemoglobin (HbA1c) values, medication precautions, and dietary guidelines can serve as an invaluable resource for patients post-discharge. For instance, the manual can include guidelines on recognizing and managing hypoglycemia, conducting self-monitoring of blood glucose, and adhering to a diet that emphasizes whole grains

such as whole wheat and buckwheat noodles while avoiding high-sugar fruits. This enhances patients' health awareness and supports disease management [10].

Personalized nursing services should also be provided, particularly for patients with severe conditions or complications. These services can include instructions on daily disinfection and care for diabetic foot ulcers, monitoring of blood lipids and blood pressure, and guidance on eye care. Such targeted care highlights the risks of complications and encourages consistent monitoring and timely hospital visits [11].

4.3. Implementing home nursing guidance and enhancing the quality of nursing services

The whole-course nursing objective management system encompasses admission, discharge, and home nursing guidance, requiring continuous follow-up to address patients' rehabilitation challenges and improve the quality of care [12]. Nursing staff should establish comprehensive nursing files for patients with type 2 diabetes to facilitate home care post-discharge. For instance, follow-up calls one month after discharge can inquire about recent blood glucose monitoring, dietary habits, exercise routines, and any new symptoms. Patients can also be encouraged to undergo HbA1c testing at nearby community hospitals to assess blood glucose control over the past three months [13].

Additionally, nursing staff can conduct health education sessions at community healthcare facilities. These sessions can cover the symptoms of type 2 diabetes, standard fasting and postprandial blood glucose values, medication and dietary guidelines, insulin administration techniques, and blood glucose monitoring procedures. Such initiatives not only address patient queries but also emphasize the importance of seeking timely medical intervention. These efforts collectively enhance nursing service quality and strengthen the whole-course nursing objective management system for type 2 diabetes patients [14].

5. Conclusion

In conclusion, the whole-course nursing model demonstrates significant efficacy in disease control, delaying complications, and improving self-management and health awareness in type 2 diabetes patients. Accordingly, nursing staff should actively develop and implement a comprehensive nursing objective management system that integrates admission, discharge, and home care. Addressing patient concerns promptly, promoting adherence to medical advice, and encouraging regular exercise and medication use can enhance patient outcomes, improve satisfaction with nursing services, and contribute to the broader goal of promoting public health and building a healthy nation [15].

Disclosure statement

The author declares no conflict of interest.

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