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The Impact of Comprehensive Nursing Based on Protection Motivation Theory on Treatment Compliance and Quality of Life in Elderly Patients with Hypertension

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Abstract: *Objective*: To explore the effect of comprehensive nursing based on protection motivation theory in elderly patients with hypertension. *Methods*: The study period was from August 2023 to May 2025. During this period, 40 elderly patients with hypertension who visited the hospital were selected and divided into an observation group (comprehensive nursing based on protection motivation theory, n=20) and a control group (routine nursing, n=20) based on a random number table method. Nursing indicators were compared between the two groups. *Results*: After nursing, the diastolic blood pressure (80.12 ± 2.31 mmHg) and systolic blood pressure (136.05 ± 3.47 mmHg) in the observation group were significantly different from those in the control group ($P < 0.05$). The scores of health behaviors (nutrition, exercise, health responsibility, and psychological comfort) in the observation group were higher than those in the control group ($P < 0.05$). After nursing, the scores of compliance and negative emotional indicators in the observation group were better than those in the control group ($P < 0.05$). The scores of psychological function (66.31 ± 5.84), physical function (66.57 ± 6.28), material function (61.85 ± 6.21), and social function (69.51 ± 7.25) in the observation group were higher than those in the control group ($P < 0.05$). *Conclusion*: During the treatment of elderly patients with hypertension, the application of a comprehensive nursing program based on protection motivation theory is beneficial for regulating blood pressure levels, significantly improving health behaviors and quality of life, alleviating negative emotions, and improving treatment compliance to some extent. This approach is feasible for promotion.

Keywords: Protection motivation theory; Comprehensive nursing; Hypertension; Compliance; Quality of life

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1. Introduction

Hypertension can affect cardiovascular health and even induce a series of complications such as renal failure,

stroke, and heart disease [1]. Elderly patients, who often have multiple chronic diseases, need to rely on various methods to control their blood pressure and optimize their quality of life. However, reasonable blood pressure management cannot rely solely on medication but also requires corresponding nursing interventions in daily life to adjust patients' lifestyles [2]. The Protection Motivation Theory, a psychological theory, suggests that individuals' motivation to protect their health depends on their perception of the severity of threats to their health, susceptibility, self-efficacy, and the effectiveness of coping strategies [3]. Implementing comprehensive nursing based on this theory in the treatment of elderly patients with hypertension can enable them to form a more comprehensive understanding of the disease, improve their self-management ability and cooperation with treatment, and ultimately achieve the goal of improving quality of life [4]. Therefore, it is essential to conduct in-depth research and analyze the clinical value of comprehensive nursing based on Protection Motivation Theory in the clinical treatment of elderly patients with hypertension.

2. Materials and methods

2.1. Clinical data

The study selected 40 hypertensive patients who are treated in the hospital from August 2023 to May 2025. These patients are divided into two groups using a random number table method. In the control group, there are 12 male patients and 8 female patients, with ages ranging from 62 to 78 years old. The median age is (67.79 ± 2.43) years old. In the observation group, there are 11 male patients and 9 female patients, with the maximum age of 77 and the minimum age of 61. The average age is (67.75 ± 2.47) years old. There was no statistically significant difference in the basic characteristics between the two groups ($P > 0.05$).

2.2. Inclusion and exclusion criteria

2.2.1. Inclusion criteria

(1) Patients diagnosed with hypertension; patients aged 60 years or older.

(2) Patients with complete clinical data.

2.2.2. Exclusion criteria

(1) Patients with allergies to the study medications.

(2) Patients with severe chronic diseases.

(3) Patients with renal failure.

2.3. Methods

In the control group, patients received routine nursing care, which involved regular monitoring of blood pressure levels to ensure they remained within a safe range. Patients are reminded and supervised to take medication as prescribed, particularly regarding medication dosage and timing. Knowledge about the disease, including potential risks and key points of daily blood pressure management, is imparted to the patients. Through scientific guidance, patients were encouraged to develop healthy habits such as smoking cessation, limited alcohol consumption, and regular exercise, as well as maintaining a healthy diet. Patient health status and medication compliance are monitored through phone calls or clinic visits, and any treatment issues are promptly addressed.

The observation group received comprehensive nursing care based on the Protection Motivation Theory. The nursing interventions included:

(1) Personalized education: Tailored health education programs are designed based on individual patient differences. These programs covered topics such as disease triggers, treatment options, and complication risks. The educational content is updated every half month, and each session lasted for about half an hour.

(2) Psychological support and motivation enhancement: Psychological counseling is provided to understand patients' concerns and feelings about their disease. Using the threat assessment and coping efficacy components of the Protection Motivation Theory, patients are encouraged to actively participate in their treatment, enhancing their self-efficacy. These sessions are conducted every half month.

(3) Behavioral goal setting: Patients are involved in setting healthy behavioral goals, such as gradually increasing physical activity and improving dietary habits. These activities are organized monthly to promote healthy lifestyle habits.

(4) Medication compliance monitoring: Electronic monitoring tools or phone follow-ups are used to oversee patients' medication adherence, ensuring they took the correct dosages on time. Monthly systematic evaluations of medication status are conducted for timely feedback.

(5) Self-management of blood pressure: Patients are educated on the proper use of household blood pressure monitors and record-keeping after measuring. Nurses reviewed these records every half month via phone or clinic visits to inform subsequent treatments.

(6) Creating a social support network: Monthly support group meetings are held where patients could share treatment experiences, discuss problems, and encourage each other. Nurses provided resources to help patients build a stronger family and community support system.

(7) Emotional management training: Patients are organized every half month to learn about emotional management and coping with stress, enabling them to accurately identify and manage negative emotions.

(8) Assessment and feedback: Monthly health assessments focused on blood pressure control effectiveness, improvement in healthy behaviors, medication adherence, and quality of life. Based on these assessments, subsequent clinical nursing interventions are adjusted.

2.4. Evaluation indicators

Evaluate changes in patients' blood pressure levels, healthy behaviors, treatment adherence, negative emotions, and quality of life.

2.5. Statistical analysis

Data processing: SPSS 23.0 statistical software; Data description: Measurement data is ($\bar{x}$ false±s); Difference test: Measurement data is t; $P < 0.05$ is used as the basis for statistical difference expression.

3. Results

3.1. Study on blood pressure levels before and after nursing in observation group and control group

Before nursing, there were no significant differences between groups, $P > 0.05$. After nursing, there were significant differences in diastolic blood pressure and systolic blood pressure between the two groups, $P < 0.05$. (**Table 1**)

Table 1. Comparison of changes in blood pressure levels between the two groups ($\overline{x} \pm s$ false)

Group	*n*	Diastolic BP (mmHg)		Systolic BP (mmHg)	
		Before nursing	After nursing	Before nursing	After nursing
Observation group	20	150.62 ± 5.84	80.12 ± 2.31	150.46 ± 6.24	136.05 ± 3.47
Control group	20	150.66 ± 5.86	87.49 ± 3.02	150.44 ± 6.22	149.52 ± 4.35
T-value		0.0216	8.6686	0.0102	10.8258
P-value		0.9829	0.0000	0.9920	0.0000

3.2. Analysis of changes in health behavior scores of two groups of patients

After nursing, the observation group's scores for various health behavior indicators were significantly better than the control group, $P < 0.05$. (**Table 2**)

Table 2. Comparison of health behavior scores before and after nursing in observation group and control group ($\overline{x} \pm s$ false)

Group	*n*	Nutrition score (points)		Exercise score (points)	
		Before nursing	After nursing	Before nursing	After nursing
Observation Group	20	16.89 ± 2.33	23.14 ± 3.21	16.17 ± 2.35	19.98 ± 2.74
Control Group	20	16.85 ± 2.35	19.42 ± 2.83	16.14 ± 2.32	17.89 ± 2.63
T-value		0.0541	3.8876	0.0406	2.4610
P-value		0.9572	0.0004	0.9678	0.0185
Group	***n***	**Health responsibility score (points)**		**Psychological well-being score (points)**	
		Before nursing	**After nursing**	**Before nursing**	**After nursing**
Observation group	20	18.14 ± 2.51	22.51 ± 2.84	16.17 ± 2.17	23.04 ± 3.18
Control group	20	18.12 ± 2.55	20.21 ± 3.11	16.15 ± 2.14	19.42 ± 2.82
T-value		0.0250	2.4423	0.0293	3.8090
P-value		0.9802	0.0194	0.9767	0.0005

3.3. Comparison of treatment adherence and negative emotion scores before and after nursing in observation group and control group

Before nursing, there were no significant differences in relevant indicators between the two groups, $P > 0.05$. After nursing, the MMAS-8 score and HADS score of the observation group were better than those of the control group, $P < 0.05$. (**Table 3**)

Table 3: Study on Changes in Treatment Adherence and Negative Emotion Scores of Two Groups of Patients ($\overline{x} \pm s$ false)

Group	*n*	MMAS-8 Score (points)		HADS Anxiety Score (points)		HADS Depression Score (points)	
		Before Nursing	After Nursing	Before Nursing	After Nursing	Before Nursing	After Nursing
Observation group	20	5.27 ± 1.05	7.54 ± 0.24	12.38 ± 2.11	7.11 ± 1.24	12.16 ± 2.12	7.44 ± 1.35
Control group	20	5.24 ± 1.02	6.38 ± 0.51	12.35 ± 2.15	9.92 ± 1.33	12.14 ± 2.15	10.15 ± 1.81
T-value		0.0917	9.2037	0.0445	6.9109	0.0296	5.3673
P-value		0.9275	< 0.0001	0.9647	< 0.0001	0.9765	< 0.0001

3.4. Comparison of changes in quality of life between two groups of patients

After nursing, various quality of life indicators in the observation group were significantly better compared to the control group, $P < 0.05$. (**Table 4**)

Table 4. Analysis of quality of life before and after nursing in observation group and control group ($\overline{x} \pm s$ false)

Group	*n*	Psychological function (points)		Physical function (points)	
		Before nursing	After nursing	Before nursing	After nursing
Observation group	20	51.49 ± 5.34	66.31 ± 5.84	53.28 ± 5.21	66.57 ± 6.28
Control group	20	51.52 ± 5.31	57.26 ± 5.44	53.24 ± 5.26	57.74 ± 6.11
T-value		0.0178	5.0710	0.0242	4.5069
P-value		0.9859	0.0000	0.9808	0.0001
Group	***n***	**Material function (points)**		**Social function (points)**	
		Before nursing	**After nursing**	**Before nursing**	**After nursing**
Observation group	20	51.32 ± 5.22	61.85 ± 6.21	55.32 ± 5.36	69.51 ± 7.25
Control group	20	51.34 ± 5.24	55.17 ± 5.81	55.35 ± 5.31	59.42 ± 5.64
T-value		0.0121	3.5129	0.0178	4.9125
P-value		0.9904	0.0012	0.9859	0.0000

4. Discussion

Hypertension has a significant impact on the daily lives of elderly patients and can even lead to various negative psychological emotions [5]. Incorporating Protection Motivation Theory into comprehensive nursing not only focuses on the physical health of patients but also considers behavioral changes and improvements in mental health [6]. Active adoption of health education, behavioral intervention, and psychological support in nursing measures can lead to more impressive control of blood pressure [7]. Comprehensive nursing based on Protection Motivation Theory emphasizes evaluating the extent of patients' perceived health threats and provides necessary support and encouragement to enable them to make changes independently, which is more conducive to strengthening patients' self-management abilities [8].

In the study, the blood pressure levels of the observation group were lower than those of the control

group, with $P < 0.05$. This confirms that integrated care incorporating protection motivation theory has a more pronounced effect on blood pressure management. The main reason is that the intervention methods adopted are more conducive to strengthening patients' cognition of the disease and enhancing their self-efficacy [9]. Based on continuous health monitoring and regular feedback to patients, follow-up treatment plans can be adjusted accordingly, enhancing the precision of care and ensuring the effectiveness of blood pressure control [10]. The health behavior indicators of the observation group were also better than those of the control group, with $P < 0.05$. The reason is that educational support can formulate measures in multiple aspects, such as psychology, diet, and physical activity, motivating patients to form healthy habits [11–13]. The treatment adherence and negative emotional indicators of the observation group were better than those of the control group, with $P < 0.05$. This indicates that this nursing model enables patients to form correct cognitions about the role of treatment plans through health education and psychological intervention, resulting in improved emotions. The scores of various quality of life indicators in the observation group were higher than those in the control group, with $P < 0.05$. This demonstrates the value of this nursing model in improving patients' quality of life [14].

5. Conclusion

Overall, integrating protection motivation theory into integrated care and applying it to the clinical treatment of elderly hypertensive patients can more effectively control blood pressure, improve patients' negative emotions and quality of life, gradually form healthy behaviors, and enhance their cooperation in treatment.

Disclosure statement

The authors declare no conflict of interest.

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