

# Exploring the Effects of Health Education and Chronic Disease Management Nursing in the Management of Hypertension in Elderly Patients in the Community

Yuhong Lin\*

Guangxi Qinzhou Health School, Qinzhou 535001, Guangxi Province, China

\*Corresponding author: Yuhong Lin, 290205134@qq.com

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**Abstract:** *Objective:* To explore the effects of health education and chronic disease management nursing in elderly community patients with hypertension, in order to provide scientific evidence for improving the health management level of these patients. *Methods:* Sixty-four elderly hypertension patients treated at this hospital between March 2022 and March 2024 were selected and randomly divided into two groups, with 32 patients in each group. One group received conventional management, designated as the control group, while the other group received a combined management strategy involving health education and chronic disease management, designated as the experimental group. The study compared the management outcomes of the two groups to evaluate the value of the combined management approach in elderly hypertensive patients in the community. *Results:* The study found that the experimental group showed significantly lower systolic blood pressure (SBP), diastolic blood pressure (DBP), and scores on the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) compared to the control group, with statistically significant differences ( $P < 0.05$ ). Additionally, the experimental group demonstrated significantly higher scores in disease cognition levels regarding awareness of normal blood pressure ranges, prevention of complications, identification of high-risk factors, and healthy lifestyle practices, with statistically significant differences ( $P < 0.05$ ). Moreover, the experimental group showed significantly better rates of self-management behaviors, such as quitting smoking and alcohol, self-monitoring of blood pressure, dietary control, regular medication adherence, and consistent exercise, compared to the control group, with statistically significant differences ( $P < 0.05$ ). *Conclusion:* This study indicates that a combined management model integrating health education and chronic disease management effectively improves the emotional state of elderly hypertensive patients in the community, significantly enhances their disease cognition levels, and boosts their self-management abilities. Furthermore, this model can effectively lower patients' blood pressure, thereby achieving better health management outcomes for elderly hypertensive patients in the community.

**Keywords:** Community hypertension; Elderly; Health education; Chronic disease management

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## 1. Introduction

With the intensification of population aging, the incidence of chronic diseases among the elderly is showing a significant upward trend. Among these, hypertension, as one of the most prevalent and threatening chronic diseases, poses a serious challenge to the health of the elderly. The causes of hypertension are numerous, including genetic predisposition, adverse living environments, unhealthy lifestyles, high blood lipid levels, and side effects of medications. The primary clinical manifestation of the disease is persistently elevated blood pressure above normal levels. Without effective control, hypertension may lead to damage to vital organs such as the heart, brain, liver, and kidneys. In more severe cases, it may cause kidney failure, heart failure, stroke, and other serious conditions, posing a significant threat to the patient's life and health<sup>[1]</sup>. However, hypertension often has no obvious symptoms in its early stages, resulting in a relatively low rate of early medical consultation. Common early symptoms may only include fatigue. When emotional fluctuations or excessive fatigue occur, blood pressure may gradually increase, and the patient may experience severe headaches, dizziness, nausea, and vomiting. As the disease progresses, these uncomfortable symptoms gradually worsen, their frequency significantly increases, and organ damage within the body also intensifies.

Currently, clinical medicine has not yet found a cure for hypertension, and treatment primarily focuses on controlling blood pressure levels and disease progression. In addition to necessary medication, maintaining a positive emotional state and a healthy lifestyle significantly promotes disease treatment. These non-pharmacological interventions can enhance the effectiveness of antihypertensive measures, stabilize blood pressure levels, reduce risk factors, and lower the incidence of complications, thus effectively safeguarding patients' lives and health. However, elderly patients have certain unique characteristics. They often have a generally lower level of disease awareness, reduced learning capacity, and a lack of self-management awareness. Additionally, elderly patients commonly exhibit more unhealthy lifestyle habits, and their adherence to medication therapy is often poor. These factors collectively result in a relatively low rate of blood pressure control among elderly patients<sup>[2]</sup>. In response to this, the present study designed a combined management plan tailored to the characteristics of elderly patients, aiming to introduce an efficient chronic disease management strategy in conjunction with health education. This approach seeks to enhance patients' awareness of their disease and self-management abilities, reduce risk factors, and achieve better management outcomes.

## 2. Materials and methods

### 2.1. General information

This study included 64 elderly hypertensive patients admitted between March 2022 and March 2024, who were randomly divided into two groups of 32 patients each. In the control group, there were 19 males and 13 females, with an average age of  $(70.25 \pm 5.89)$  years and an average disease course of  $(10.85 \pm 1.75)$  years. In the experimental group, there were 20 males and 12 females, with an average age of  $(69.88 \pm 6.15)$  years and an average disease course of  $(11.05 \pm 1.45)$  years. A comparison of general information between the two groups, such as gender, age, and disease course, showed no statistically significant differences ( $P > 0.05$ ), indicating that the data were comparable.

Inclusion criteria: The study subjects had complete data, and the study protocol had been approved by the ethics committee, ensuring no ethical violations during the study; patients were diagnosed with hypertension; the age was 60 years or older; they were fully informed about the study and consented to participate; they were

conscious and capable of making subjective judgments; they had no dementia or other cognitive impairments; no other serious diseases; they were able to complete the entire study process as required; they had no organic diseases; they had no mental disorders; cognitive function was normal.

## 2.2. Methods

Patients in the control group received routine management, including an annual comprehensive physical examination, treatment adjustments based on the examination results, and routine health education. On this basis, the experimental group implemented more refined health education and chronic disease management measures:

(1) Health education:

- (a) Form a professional education team: Establish a team composed of professionals, with team members learning about disease knowledge and treatment methods together, improving personal communication and presentation skills to ensure the adoption of more effective educational methods, thereby enhancing the effectiveness of health education.
- (b) Strengthen interactive communication: Team members should communicate with elderly patients with a positive and friendly attitude and a smile. They should patiently inquire and gather information to assess health status, pay attention to individual differences, and formulate personalized health education plans. For patients with lower education levels, use images and simple language for explanations; for those with higher education levels, combine professional terminology with video and written materials to improve understanding and acceptance.
- (c) Promote healthy habits: Pay attention to patients' daily habits, as hypertension is closely related to unhealthy lifestyles. The education team should motivate patients to actively participate in treatment through success stories and guide them in correcting bad habits and properly using medication. For dietary management, encourage family involvement, cooperate with nutritionists to create personalized meal plans, control sugar and salt intake, and promote a light diet. Regarding medication treatment, educate patients about the importance of medication adherence, regular blood pressure monitoring, and timely medical consultation for any abnormalities. Exercise guidance should focus on recommending aerobic activities, such as walking and jogging, to enhance physical fitness and stabilize blood pressure. For smoking and alcohol consumption, explain the hazards and provide guidance on quitting to help patients establish a healthy routine.

(2) Optimized chronic disease management strategies:

- (a) Improve patient records: Record detailed patient information and multiple contact methods for follow-up and management.
- (b) Upload vital signs data to the management system every 30 days, perform graded evaluations to ensure that doctors are promptly aware of the condition, and adjust treatment plans accordingly. Management staff should regularly update medical records, and if the condition worsens, promptly upload information to higher-level medical institutions for an expert team to develop a treatment plan. Nurses should conduct regular follow-ups, thoroughly assess patients' physical and mental health, and provide professional advice. During follow-ups, nurses should listen patiently, pay attention to the needs of the elderly, especially their emotional and psychological needs, and use psychological counseling techniques to help alleviate negative emotions.

### 2.3. Quality evaluation

- (1) A comprehensive analysis of blood pressure levels, negative emotional states, disease knowledge, and self-management abilities was conducted.
- (2) Blood pressure was assessed using systolic blood pressure (SBP) and diastolic blood pressure (DBP).
- (3) For the evaluation of negative emotions, anxiety and depression were assessed using the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS), respectively. Lower scale scores indicated a reduction in anxiety or depression, reflecting an improvement in emotional status<sup>[3]</sup>.
- (4) Self-management behaviors were observed in both groups, including smoking cessation, alcohol cessation, blood pressure monitoring, dietary control, regular medication, and regular exercise. Patients who achieved a compliance rate of over 80% were defined as having good self-management behaviors, and the good behavior rate was calculated for both groups<sup>[4]</sup>.
- (5) The Hypertension Knowledge Scale was used to evaluate disease knowledge in both groups, covering areas such as normal blood pressure ranges, complications, high-risk factors, and healthy lifestyles. Each item was scored out of 100, with higher scores indicating a greater understanding of the corresponding knowledge.

### 2.4. Statistical analysis

Data processing was performed using SPSS 22.0 software. Categorical data were presented as percentages (%) and analyzed using the chi-squared ( $\chi^2$ ) test. Measurement data were expressed as mean  $\pm$  standard deviation (SD), and the results were analyzed using the *t*-test. A *P* value of less than 0.05 is considered a statistically significant difference.

## 3. Results

### 3.1. Comparison of blood pressure and negative emotion scores between the two groups

The experimental group had lower values and scores in SBP, DBP, SAS, and SDS compared to the control group. The differences between the two groups were statistically significant ( $P < 0.05$ ). Detailed data are shown in **Table 1**.

**Table 1.** Comparison of blood pressure and negative emotion scores between the two groups (mean  $\pm$  SD)

Group	<i>n</i>	SBP (mmHg)	DBP (mmHg)	SAS (points)	SDS (points)
Control group	32	133.0 $\pm$ 6.7	86.0 $\pm$ 7.1	47.0 $\pm$ 3.8	53.0 $\pm$ 4.1
Experimental group	32	118.0 $\pm$ 5.4	80.0 $\pm$ 5.8	42.0 $\pm$ 2.8	48.0 $\pm$ 3.1
<i>t</i>		10.04	3.68	5.17	5.57
<i>P</i>		0.00	0.001	0.00	0.00

### 3.2. Comparison of disease awareness levels between the two groups

The experimental group scored significantly higher than the control group in terms of disease awareness, including understanding normal blood pressure ranges, complication management, high-risk factor identification, and healthy lifestyle. The differences between the two groups were statistically significant ( $P < 0.05$ ). Detailed information is shown in **Table 2**.



**Table 2.** Comparison of disease awareness levels between the two groups (mean  $\pm$  SD, score)

Group	<i>n</i>	Normal blood pressure range	Complications	High-risk factors	Healthy lifestyle
Control group	32	75.6 $\pm$ 4.9	76.6 $\pm$ 6.9	73.8 $\pm$ 7.1	74.1 $\pm$ 5.9
Experimental group	32	84.0 $\pm$ 5.1	84.6 $\pm$ 7.2	85.2 $\pm$ 6.1	83.3 $\pm$ 6.1
<i>t</i>		6.50	4.11	6.64	5.96
<i>P</i>		0.00	0.00	0.00	0.00

### 3.3. Comparison of self-management between the two groups

The experimental group performed better in terms of self-management, including quitting smoking and drinking, blood pressure monitoring, diet control, regular medication, and regular exercise. The good performance rate in the experimental group was significantly higher than in the control group, and the differences between the two groups were statistically significant ( $P < 0.05$ ). Detailed data are shown in **Table 3**.

**Table 3.** Comparison of self-management between the two groups [*n* (%)]

Group	<i>n</i>	Quit smoking or drinking	Blood pressure monitoring	Diet control	Regular medication	Regular exercise
Control group	32	23 (71.9)	22 (68.8)	24 (75.0)	25 (78.1)	22 (68.8)
Experimental group	32	29 (90.6)	29 (90.6)	31 (96.9)	31 (96.9)	30 (93.8)
$\chi^2$		4.32	5.46	7.93	6.67	7.68
<i>P</i>		0.04	0.02	0.06	0.01	0.01

## 4. Discussion

Using conventional management as a basic intervention method has relatively limited effectiveness in patient education and is insufficient to significantly enhance patients' awareness of hypertension. It also struggles to correct patients' unhealthy lifestyle habits. Furthermore, due to patients' over-reliance on caregivers, once they return to independent living, their ability to prevent and control risk factors is often low. As management duration extends, patient fatigue gradually increases, and medication adherence significantly declines, which negatively affects clinical treatment outcomes. Some patients also mistakenly believe that their blood pressure is controlled within a safe range, leading to arbitrary adjustments in medication without fully recognizing the serious consequences this may entail <sup>[5]</sup>.

The application of a combined model (integrating chronic disease management with health education) has proven to be highly effective, in addressing the shortcomings of traditional management. This model is more refined and efficient, enhancing patients' awareness of their disease, fully meeting their needs, alleviating negative emotions, stabilizing blood pressure, and reducing the occurrence of abnormal discomfort <sup>[6]</sup>. In terms of health education, establishing a professional team significantly improves educational efficiency. Additionally, personalized education programs based on patients' specific conditions, combined with health plans tailored to their lifestyle habits, help correct unhealthy behaviors and foster healthy living habits. Chronic disease management, through the establishment of detailed personal health records and improvements in the management system, greatly enhances management efficiency and also motivates caregivers' active

participation in chronic disease management, ensuring patients receive superior care services<sup>[7]</sup>. This study reveals that, compared to traditional management methods, the combined management model has a more significant effect in reducing SBP and DBP, while also markedly lowering scores on the SAS and the SDS. It enhances patients' awareness of their disease and substantially improves their self-management proficiency<sup>[8]</sup>. These data clearly show that this combined model can comprehensively meet the physical and mental health needs of elderly patients in the community, effectively alleviate negative emotions, reduce emotional fluctuations<sup>[9]</sup>, relieve anxiety and depression, significantly enhance patients' health awareness, improve their self-management abilities, lower health risks, and stabilize blood pressure within safe levels, achieving effective control of blood pressure.

## 5. Conclusion

Overall, the combined application of health education and chronic disease management holds great significance in clinical practice. It not only significantly improves patients' disease awareness and self-management abilities<sup>[10]</sup>, but also effectively improves emotional states, promotes blood pressure reduction, and achieves more excellent treatment outcomes.

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## Disclosure statement

The authors declare no conflict of interest.

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