Observation on the Effect of Health Education in Health Management of Chronic Disease Patients

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Abstract

Objective: By the end of 2021, the aging rate of China's population is 18.9%, and the prevalence rate of chronic diseases in the elderly population is increasing year by year, and chronic diseases have become the main causes of death and health threats of Chinese residents. Therefore, how to manage this huge group well is crucial. This paper analyzes the value of health education in the process of health management for patients with chronic diseases. Methods: 102 patients with chronic diseases treated from January 2021 to December 2021 were divided into control group and experimental group by random number table method. The control group was given routine health management while the experimental group was given health education based on the control group, and the implementation effect was analyzed. Results: After management, the scores of chronic disease knowledge in the experimental group were significantly higher than those in the control group, and the dimensions of ESCA were higher than those in the control group, and P < 0.05; Conclusion: The implementation of health education in the process of chronic disease health management is helpful to improve patients' self-care ability and better control disease progression.

Keywords

Chronic Disease Patients, Health Education, Health Management, Implementation Effect

1. Introduction

Chronic diseases refer to a general term encompassing various non-communicable illnesses that can accumulate over an extended period and cause damage to the

morphology of the disease. Presently, chronic diseases have emerged as the primary health threat, particularly among the elderly population. The most prevalent chronic diseases include hypertension and diabetes [1]. According to relevant data, in 2018, the total number of diagnosed chronic disease patients in China was approximately 300 million. Among them, the age group under 65 accounted for 50% of the total, and the number of deaths attributed to chronic diseases constituted 86.6% of the total mortality [2]. According to WHO survey data, the global population of individuals aged 60 and above is projected to increase from 12% to 22% between the years 2015 and 2050 [3]. It is anticipated that by the year 2035, this population is expected to exceed 400 million [4]. 80% of the elderly population suffers from at least one chronic disease, and 50% of the elderly have at least two or more chronic diseases [5]. For patients with chronic diseases, targeted medication is crucial in controlling the progression of the illness. The effectiveness of disease control is also significantly influenced by the patient's understanding of the condition, health behaviors, and a rational diet. Therefore, implementing health education is essential in the management process to address these factors. The following is a summary of the effects of implementing health education in the health management process for patients with chronic diseases in this article.

2. Materials and Methods

2.1. General Information

Sample Size Calculation Formula:

$$N = Z2 \times \left[P \times (1-P) \right] / E2$$

In the formula, Z represents the critical value, calculated as 1.96 for a 95% confidence level; E represents the margin of error, calculated as 10%; and P represents the probability, calculated as 0.5. Therefore

$$N = 19.62 \times 0.5 \times 0.5 / (0.12) \approx 96$$

Hence, the minimum sample size is approximately 96 cases.

After confirming the research sample, participants with chronic illnesses were recruited from my local community between January 2021 and December 2021. The individuals were informed about the significance and objectives of this study, and their consent was obtained. Following their full understanding and agreement to participate, a total of 102 chronic disease patients were successfully enrolled in the research. The application of a random number table was used to divide the participants into a control group and an experimental group, with each group comprising a total of 51 patients.

Inclusion criteria: All patients were diagnosed based on the corresponding diagnostic criteria for the relevant chronic illness, with an age of 60 years or older. They all possessed normal communication and comprehension abilities, clear consciousness, and engaged in daily activities independently. Additionally, all participants were well-informed about the details of the study and voluntarily

signed an informed consent form before the commencement of the research.

Exclusion criteria: Patients with severe complications of chronic diseases, language expression disorders, altered consciousness, hearing impairments, and similar conditions were excluded from the study.

2.2. Method

All patients received symptomatic treatment based on the diagnosed type of chronic illness. The control group received routine health management, which included informing patients about medication usage and dosage, scheduling regular check-ups, and advising prompt medical attention in case of any physical discomfort. In contrast, the experimental group underwent health education in addition to the routine health management provided to the control group. The implementation steps were as follows:

2.2.1. Establish a Health Education Group

The group will be composed of 2 to 3 specialized nurses from our cardiology department, ensuring that all members have years of experience in the health management of chronic cardiovascular diseases.

2.2.2. Collect Patient Information and Assess Health Needs

Members of the health education group will gather basic information about patients and establish individual health records. The contents of the records include basic patient information, time of diagnosis, type of chronic illness, names of medication treatments, etc. Based on these records, the health needs of the patients will be assessed to understand their specific health requirements. Upon this assessment, targeted health education methods and content will be determined to address the identified needs.

2.2.3. Determine the Methods of Health Education

Common methods of health education include: 1) Face-to-face guidance: Members of the health education group provide health education to patients in an easily understandable manner. 2) Telephone tracking follow-up refers to the practice of periodically (usually once a month) communicating with patients or their family members via phone to inquire about recent dietary habits, lifestyle, any perceived abnormalities in their health, and other related information. 3) Distributing health education materials involves providing patients with information related to chronic illnesses. This type of health education model is typically suitable for patients with reading abilities. 4) Regularly organizing patient participation in health lectures involves bringing together chronic disease patients from the hospital during a specific period. These health lectures feature experts who explain relevant knowledge. Patients are encouraged to raise their questions, fostering an environment for mutual exchange of experiences among the patients. 5) Participating in self-management groups involves organizing recently diagnosed chronic disease patients into smaller groups of 4 to 6 individuals. Each group is led by a patient with strong communication skills and a rela-

tively younger age. Members of the group mutually supervise each other, working together to effectively manage their chronic conditions. It is important to note that the diverse age and educational backgrounds of patients result in varying levels of understanding and cognitive abilities. Therefore, when implementing health education, it is crucial to tailor the approach to the specific circumstances of each patient, choosing the most effective methods. For instance, for older patients with lower educational levels, prioritizing face-to-face guidance and telephone tracking follow-ups as the primary health education methods may be more suitable. For patients with higher educational levels, distributing promotional materials and participating in self-management groups are examples of health education methods that may be more effective.

2.2.4. Health Education Content

1) Behavioral guidance involves inquiring about the lifestyle, dietary habits, and exercise routines of individuals with chronic illnesses. Timely identification of any erroneous behaviors is essential, with the goal of guiding patients to cultivate correct awareness and actions. Encouraging patients to rest on time, emphasizing personal hygiene, and tailoring appropriate exercise programs based on the physical condition of chronic illness patients are crucial aspects. For younger patients, activities like swimming and running may be recommended, while for older individuals, options such as the Eight Brocades or Tai Chi can be suggested. Engaging in regular physical activity aims to enhance the body's immune system and control the progression of chronic illnesses. 2) Psychological guidance is essential for individuals with chronic illnesses, especially elderly patients who often lack understanding of their conditions and may struggle with emotional control skills. The absence of these skills contributes to significant emotional fluctuations, which, in turn, can impact the management of chronic illnesses and affect the prognosis of patients. Therefore, during the medical examination process, it is crucial for the health awareness and care team to emphasize to patients the importance of emotional control. This involves providing detailed information about the connection between emotions and chronic diseases, aiming to prevent the occurrence of easily angered emotions in daily life. Additionally, patients are encouraged to maintain a positive mindset, learn to approach their medical conditions correctly, and reduce the likelihood of negative emotions. 3) Dietary guidance involves making appropriate adjustments to the dietary structure of patients based on their daily eating habits. For individuals with chronic illnesses, dietary goals should focus on the "three regulars, four highs, three lows, and two abstains." The three regulars refer to regular timing, quality, and quantity of meals. Nutrient-rich foods, particularly those high in protein, vitamins, fiber, and unsaturated fatty acids, should be emphasized. It is important to prioritize low-fat, low-calorie, and low-sodium foods. For individuals with diabetes, reducing the intake of high-sugar foods is also recommended, while those with high cholesterol should avoid animal fats and increase consumption of legumes, vegetables, and fruits. Patients are advised to quit smoking

and limit alcohol intake. The primary objective of dietary structure adjustments is to control the progression of the disease, ensuring a balanced and nutritious diet. This helps patients supplement various nutrients and, when combined with medication, aims to control the development of chronic illnesses. 4) Medication health guidance involves informing patients about the importance of taking medications on time and in the prescribed dosage. To ensure that patients accurately understand the correct usage of various medications, community healthcare professionals can have patients repeat the instructions for each type of medication. Timely reinforcement is necessary if any errors are identified. For older patients, it is crucial to leverage the role of family members in supervision to ensure medication adherence. Patients should be informed about the potential adverse reactions of common medications used in the treatment of chronic illnesses. They should be cautioned to be vigilant about any adverse reactions and seek immediate medical attention if any significant side effects are observed. 5) Disease monitoring guidance involves reminding patients to attend follow-up appointments at the hospital on time and adjusting treatment plans based on clinical examination results.

2.3. Observation Indicators

1) Comparing demographic data between two patient groups.

2) Comparing the self-care abilities of two groups of patients before and after management, with evaluation based on the Chinese version of the Self-Care Ability Scale (ESCA). The scale comprises four dimensions: self-care responsibility (6 items), self-concept (8 items), health knowledge (17 items), and self-care skills (12 items), totaling 43 items. Each item is scored on a scale of 0 to 4, with a maximum total score of 172. The scores are positively correlated with the patient's self-care ability. The results can be categorized into three levels: high, medium, and low. In this study, the Cronbach's α coefficient for the scale is 0.929 [6]. See the appendix.

2.4. Statistical Methods

The statistical analysis and data interpretation were conducted using the SPSS 25.0 statistical software. The number of cases for patients is denoted by "n". Count data is presented as percentages, and the chi-square test (χ^2) was employed. Continuous data is expressed as means, and the t-test was used. When the p-value is less than 0.05, it indicates a significant difference.

3. Result

3.1. Comparison of Demographic Data between Two Patient Groups

Control Group: There were 28 male and 23 female participants, aged 44 to 88 years (mean age 71.54 ± 5.47 years). The distribution of chronic diseases in this group included 18 cases of hypertension, 18 cases of diabetes, 4 cases of coronary heart disease, 6 cases of hyperlipidemia, and 5 cases of other conditions.

Experimental Group: There were 27 male and 24 female participants, aged 52 to 93 years (mean age 71.50 ± 5.41 years). The distribution of chronic diseases in this group included 17 cases of hypertension, 18 cases of diabetes, 5 cases of coronary heart disease, 6 cases of hyperlipidemia, and 5 cases of other conditions.

Statistical analysis of basic demographic data for the two groups was conducted using data analysis software, yielding a p-value > 0.05, indicating comparability between the groups, as shown in Table 1.

3.2. Comparison of ESCA Scores in Various Dimensions between the Two Patient Groups before and after Health Education

Before the intervention, there were no statistically significant differences (P > 0.05) between the experimental group and the control group in terms of self-care responsibility, self-concept, health knowledge, and self-care skills. After different health education interventions, the experimental group showed higher scores in the dimensions of self-care responsibility, self-concept, health knowledge, and self-care skills compared to before health education, and this difference was statistically significant (P < 0.05). However, the control group exhibited no significant differences (P > 0.05) in the scores for self-care responsibility, self-concept, health knowledge, and self-care skills compared to before health education. As shown in Table 2.

Table 1. Comparison of demographic data of two patient groups.

General information		Experimental group	Control group	X^2/t	P
Gender	Male	27	28	0.124	>0.05
	Female	24	23		
Average age		71.50 ± 5.41	71.54 ± 5.47	0.054	>0.05
Types of chronic diseases	Hypertension	17	18		
	Diabetes	18	18		
	Coronary heart disease	5	4	0.157	>0.05
	Hyperlipidemia	6	6		
	Other	5	5		

Table 2. Comparison of ESCA Scores in various dimensions between the two patient groups before and after health education [($\overline{x} \pm s$), scores].

Dimension	Group	Pre-education	Post-education	P
Sense of self-care responsibility	Experimental group	10.21 ± 2.36	17.83 ± 3.54	<0.05
	Control group	10.18 ± 2.31	10.51 ± 2.42	>0.05
Self-concept	Experimental group	13.11 ± 4.24	23.15 ± 4.24	<0.05
	Control group	13.08 ± 4.21	14.07 ± 3.12	>0.05
Health knowledge	Experimental group	30.05 ± 9.15	48.04 ± 8.45	<0.05
	Control group	30.08 ± 9.11	31.54 ± 8.78	>0.05
Self-care skills	Experimental group	72.45 ± 15.24	121.54 ± 18.24	<0.05
	Control group	72.41 ± 15.18	73.65 ± 16.21	>0.05

From Table 2, it can be observed that health education plays a role in enhancing the self-care responsibility, self-concept, health knowledge, and self-care skills of patients with chronic diseases. Here, self-care responsibility refers to the sense of responsibility individuals have for their own health and well-being, manifested by actively taking actions to maintain and promote their health. Strong self-care responsibility emphasizes an individual's responsibility for their health and a willingness to take corresponding responsibilities and obligations. In self-care management, self-concept encompasses an individual's perception and evaluation of their physical and psychological conditions, as well as their understanding and positioning of their professional roles and responsibilities. Self-concept helps individuals understand their needs, capabilities, and limitations, enabling them to develop personalized self-care plans. Simultaneously, self-concept also assists individuals in establishing correct values and professional attitudes, enhancing professional identity and satisfaction, thus enabling them to provide high-quality nursing services for patients. Health knowledge in self-care management refers to the relevant knowledge individuals need to understand in order to maintain and promote their own health. This knowledge includes but is not limited to healthy diet, moderate exercise, disease prevention and control, mental health, medication use and safety, personal hygiene, health monitoring, and more. Self-care skills in self-care management refer to the relevant skills individuals need to possess to maintain and promote their own health. These skills encompass basic nursing operations, self-care skills, self-regulation skills, health management skills, and communication abilities. By utilizing the means of health education, patients' self-management abilities in the aforementioned aspects have been effectively enhanced, leading to better control of their medical conditions.

4. Discussion

Chronic diseases, abbreviated as non-communicable diseases, mainly include diabetes, chronic obstructive pulmonary disease (COPD), cardiovascular diseases, malignant tumors, and others. Particularly in recent years, with the intensification of the aging trend in society, the incidence of chronic diseases continues to rise, posing a significant threat to public health [7]. The diagnosed cases of chronic diseases have been increasing, showing a trend toward younger age groups, highlighting the importance of effective nursing management for this population in contemporary society. Clinical studies have found that the occurrence and progression of chronic diseases are closely associated with patients' unhealthy lifestyles. Additionally, some patients lack accurate knowledge about chronic diseases and engage in unscientific behaviors, leading to the continuous progression of chronic diseases and the onset of various complications, thereby increasing the difficulty of clinical treatment. Therefore, for patients with chronic diseases, it is crucial to not only actively treat the conditions but also utilize effective means to enhance patients' awareness of the diseases. Health education, in-

cluding oral education, health record creation, distribution of promotional materials, and posting slogans, is a method aimed at educating individuals on specific content to improve their awareness and correct misconceptions and lifestyle habits. The effectiveness of applying health education in chronic disease management has been confirmed. Intervention research by Liang Ruirui [8] found that patients who received health education for six months showed significant improvements in their knowledge of diabetes basics, dietary knowledge, medication knowledge, and exercise knowledge. Their execution abilities in various health behaviors significantly improved, and anxiety levels markedly decreased. Similarly, a study on patient self-behavior intervention by Peng Zhongju [9] also confirmed that after implementing relevant interventions, there were noticeable changes in patients' behaviors, a significant improvement in self-care behavior scores, and effective enhancement in daily dietary, exercise, and behavioral habits, promoting overall patient health.

In the preceding text, the effectiveness of implementing health education in the health management process of patients with chronic diseases was analyzed, and a comparison was made with patients undergoing routine health management. The results revealed that after management, the experimental group's awareness scores regarding chronic disease knowledge were significantly higher than those of the control group, and the ESCA scores were also higher, with a significance level of $P < 0.05$. This is primarily attributed to the health education model, which, based on an assessment of patients' conditions and cultural backgrounds, understands their health needs. Subsequently, flexible application of health education methods is employed to conduct disease-related educational activities for patients. This approach helps patients develop a correct understanding of the fundamental knowledge of chronic diseases, acquire basic self-care skills, correct unhealthy lifestyle habits, and reduce the negative impact of these factors on the disease. Ultimately, it facilitates better promotion of disease recovery [10].

5. Conclusion

In summary, in recent years, with the continuous intensification of the aging trend in China, the incidence of chronic diseases has been steadily increasing. The occurrence, progression, and control of chronic diseases are significantly associated with patients' awareness of relevant chronic diseases and their self-care abilities. Implementing targeted health education for patients with chronic diseases has shown remarkable effects in helping patients develop a correct understanding of chronic diseases and enhancing their self-care abilities. This, in turn, contributes to better control of the progression of diseases.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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