



Evaluation of the Application Effect of "Yilian Family Medical Health Service Platform" in the Health Education for Cardiovascular Patients

*Xiaohe XU, *Li QU*

Department of Cardiology, The Second Hospital of Dalian Medical University, Dalian 116001, P.R. China

***Corresponding Author:** Email: qyequ6@163.com

(Received 16 Jan 2020; accepted 11 Apr 2020)

Abstract

Background: To explore the effect of the "Yilian Family Medical Health Service Platform" used by cardiology nurses on the health education of cardiovascular patients.

Methods: Overall, 380 patients with coronary heart disease were selected from the Second Hospital of Dalian Medical University, Dalian China in 2019. They were divided into control group (190 cases) and observation group (190 cases) according to the method of digital random allocation. The traditional discharge health education model was used in control group, that is, oral education before discharge. Based on traditional health education, the "Yilian Family Medical Health Service Platform" was recommended in the observation group. Patients could use the platform to communicate and consult with the family doctor team. The awareness of disease and medication, compliance, incidence of rehospitalization, and satisfaction with nursing work were compared in the two groups after discharge from the hospital.

Results: The experimental group was significantly better than the control group in terms of disease awareness, medication adherence, return visits, and rehospitalization ($P < 0.05$).

Conclusion: The "Medical Federation Family Medical Health Service Platform" could be used by nurses as a continuation of health education for patients with cardiovascular disease after discharge from the hospital. It can promote patient recovery, improve medication compliance, reduce the rate of rehospitalization, and obviously improve patients' satisfaction to the nursing staff.

Keywords: Medical association; Family medicine; Health education; Cardiovascular disease

Introduction

Cardiovascular disease is a type of disease with a high incidence in the elderly, such as heart disease, hypertension, coronary heart disease, etc., which are mostly chronic diseases, and often co-exist with multiple diseases. It seriously threatens the physical and mental health and life safety of patients (1).

In the context of a rapidly accelerating society, the development of cardiovascular disease in China is becoming increasingly serious, which

not only harms the physical and mental health of patients, but also brings multiple negative impacts on patients' families and society (2). Cardiovascular disease has long course, different prognosis, and even requires repeated hospitalizations. The disease itself is not the worst threat; most of the patients die from the lack of understanding of the disease and unhealthy lifestyles (3).



It is not enough only to receive the treatment and recover in hospital without disease-related health education, such as the popularization of knowledge about medication, lifestyle, diet, and follow-up consultations. To achieve better treatment results, patients' knowledge to the disease is essential. Pre-hospital health education for patients with cardiovascular disease through systematic education activities could improve patient health awareness, reduce or eliminate risk factors of disease, and improve patient compliance and self-discipline after discharge. Patients should develop a lifestyle with regular inspections and exercise (4).

In order to further improve the health education for patients with cardiovascular disease, this study applied the "Yilian Family Medical Health Service Platform" for pre-discharge health education among 360 patients in the 1st department of the Second Affiliated Hospital of Dalian Medical University, Dalian China.

Materials and Methods

Overall, 360 cases of coronary heart disease patients were randomly selected. They were admitted to the Second Affiliated Hospital of Dalian Medical University, Dalian China in 2019. All patients were clearly diagnosed with coronary heart disease, without cognitive impairment, serious damage to liver function or kidney function. Patients could use smartphones and WeChat independently. Exclusion criteria: Patients with cognitive impairment, unable to live on their own, with other cardiovascular diseases, and infections were excluded.

Subjects were randomly divided into control group (180 cases) and observation group (180 cases) according to the admission sequence. There were 85 males and 75 females aged 46 to 78 yr with an average age of (60.34 ± 3.12) yr in the control group. There were 91 females and 69 males aged 48 to 75 yr with an average age of (61.41 ± 2.13) yr old in the observation group. The general data of the two groups were statisti-

cally processed. When $P > 0.05$, there was no significant difference.

This study was approved by the Ethics Committee of the Second Affiliated Hospital of Dalian Medical University, Dalian China.

Methods

The traditional discharge health education model was used in the control group, that is, oral education before discharge, including self-condition monitoring, medication guidance, dietary guidance, activity guidance, and follow-up guidance according to the health education list, patiently and carefully answering questions raised by patients, and study heart Vascular disease related health materials. On the basis of traditional health education, the observation group instructed patients to use the "Medical Federation Family Medical Health Service Platform" to communicate and consult with the family doctor team including:

- 1) Uniform training of doctors and nurses in each group of the department. The purpose, function, and the way how to use the "Yilian Family Medical and Health Service Platform" would provide health education to patients before discharge after mastering them.

- 2) The responsible nurses would explain the functions of the "Yilian Family Medical and Health Service Platform" to discharged patients. With specific usage methods and procedures, the nurses could guide and assist patients to complete the personal information improvement of the "Medical Health Service Platform for Medical Union", complete the attention and binding of the medical team, and ensure that patients will use this function after being discharged.

- 3) Establishing health education group, establish a WeChat group of discharged patients, uniformly manage discharged patients, regularly push health knowledge, remind the time of follow-up, and dynamically ask patients for review. The various inspection indicators at the time prompt online communication and consultation with the family doctor team to ensure that the health problems are resolved in time.

4) Establishing a logbook of online consultations between discharged patients and family doctors, register health problems for consultation, and family doctor feedback management opinions, and the extent to which the patient received treatment.

Evaluation indicators compared the two groups' awareness rate of disease, medication compliance, incidence of rehospitalization, and satisfaction with nursing work 6 months after discharge. ① Cognition of disease: Applying self-made health knowledge questionnaire to patients. For evaluation, the questionnaire is divided into 10 questions, one correct answer is worth 1 point, a perfect score of 10 is full grasp, 6-9 is partially grasped, and less than 6 is scored without grasp. Mastery rate = (total number of cases-no mastery examples) (Number) ÷ Total number of cases x 100% ② Drug compliance: Adopt the WeChat punch-in record method and take the time to

take the medication to the patient group every day.

The statistical method used SPSS statistical software (Chicago, IL, USA) to process the data. The independent *t* test was used for the difference test of measurement data and the difference test was used for count data. *P* < 0.05 was considered statistically significant.

Results

Comparison of the degree of disease awareness before and after intervention between the two groups

Before the discharge, the two groups of patients answered the questionnaires and recorded the scores. The scores were not statistically different. They were evaluated again 6 months after discharge. The score in the experimental group was significantly higher than that in the control group (Table 1).

Table 1: Comparison of disease knowledge grasp rate before and after two interventions (example)

Group	Number of cases	Fully grasp N(%)		Partially mastered N(%)		Not mastered N(%)		Mastery of disease %	
		Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention
Test group	180	45 (25%)	105 (58.33%)	75 (41.67%)	48 (26.67%)	60 (33.33%)	47 (26.11%)	66.7%	73.9%
Control group	180	51 (28.33%)	69 (38.33%)	66 (36.67%)	60 (33.33%)	63 (35%)	51 (28.33%)	65%	71.6%

Comparison of medication compliance between the two groups of patients

There was no statistical difference in medication compliance between the two groups of patients, and the experimental group was significantly higher than the control group after intervention (*P* < 0.05) (Table 2).

Comparison of rehospitalization rates between the two groups

The incidence of rehospitalization in the two groups during the 6-month follow-up period was significantly lower in the experimental group than that in the control group (Table 3).

Table 2: Comparison of medication compliance between the two groups of patients

Group	Before Intervention	After Intervention
Study Group (n = 180)	41.88±2.07	19.17±1.14
Control group (n = 180)	41.51±2.11	29.55±1.26
<i>t</i>	0.702	46.923
<i>P</i>	0.806	0.000

Comparison of the satisfaction of two groups of patients on nursing work

Both groups of patients received routine health guidance from the nurses before discharge, and

the experimental group was instructed by the nurses on how to use the "Medical Federation Family Medical Health Service Platform" and introduced the family doctors before discharge.

Table 3: Comparison of rehospitalization rates between the two groups

<i>Group</i>	<i>Number of Readmissions N(%)</i>
Experimental group (n = 180)	32 (17.78%)
Control group (n = 180)	78 (43.33%)

The study regularly promoted health knowledge, and regularly followed up two groups of patients after discharge. The experimental group was sig-

nificantly more satisfied with the nursing work than the control group (Table 4).

Table 4: Comparison of satisfaction between two groups of patients on nursing work

<i>Group</i>	<i>Very satisfied N(%)</i>	<i>Quite satisfied N(%)</i>	<i>Dissatisfied N(%)</i>
Experimental group (n = 180)	118 (65.57%)	60 (33.33%)	2 (1.11%)
Control group (n = 180)	98 (54.44%)	54 (30%)	28 (15.56%)
<i>X²</i>		24.701	
<i>P</i>		<0.001	

Discussion

In recent years, health education has played an important role in the management of patients with chronic diseases, and its influence has gradually received attention. With the development of society and economy, people's health awareness has been continuously strengthened, and higher requirements have been placed on health management (5).

With the aging of Chinese society, it is particularly important to strengthen patients' awareness of the disease and improve their medication compliance. Cardiovascular disease is a type of heart disease that seriously endangers the physical and mental health of the Chinese population. The method is important, but the health management of this group of people has a long way to go. WeChat is an instant messaging software based on the smartphone platform and a free application with intelligent and instant messaging services (6), the "Yilian Family Medical Health Service Platform" in this study is an "Internet +

Medical Health" intelligent medical platform initiated by Director Qu Peng of the Second Affiliated Hospital of Dalian Medical University, Dalian China, which can be used on WeChat platforms. "The Medical Union Family Medical Health Service Platform" aims at providing patients with full-process health management in and out of the hospital, a continuous system of prevention, treatment, rehabilitation, health promotion and other health services.

A series of measures, including the care and support from medical staff, are conducive to patients' postoperative medication and follow-up, and could enhance the initiative of patients in compliance with medical treatment (7), enhance the effect of health education.

Conclusion

The "Medical Federation Family Medical Health Service Platform" used by nurses is a continuation of health education for patients with cardiovascular disease after discharge from the hospital.

It has an effect on promoting patient recovery, improving medication compliance, reducing re-hospitalization rate, and improving nursing job satisfaction.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

There is no financial source of this study.

Conflicts of interest

The authors declare that there is no conflict of interest.

References

1. Racodon M, Porrovecchio A (2019). [A therapeutic patient education health network for cardiovascular disease]. *Soins*, 64(837): 18-21. [In French]
2. Eshah NF (2018). Investigating cardiovascular patients' preferences and expectations regarding the use of social media in health education. *Contemp Nurse*, 54(1): 52-63.
3. Sun YQ, Jiang AL, Chen SM, et al (2017). Quality of life and self-care in elderly patients with cardiovascular diseases: The effect of a Traditional Chinese Medicine health educational intervention. *Appl Nurs Res*, 38: 134-140.
4. Papas MA, Stolz N, Orsega-Smith E, et al (2018). The Importance of Inclusion for Cardiovascular Health Promotion Programs in Delaware. *Health Promot Pract*, 19(2): 256-266.
5. Fredericks S, Guruge S (2015). Promoting Immigrant Women's Cardiovascular Health Redesigning Patient Education Interventions. *ANS Adv Nurs Sci*, 38(4): E13-E20.
6. Ferretti F, Gris A, Mattiello D, et al (2014). Impact of a health education program on the elderly's knowledge about cardiovascular diseases. *Rev Salud Publica (Bogota)*, 16(6): 807-820.
7. Commodore-Mensah Y, Himmelfarb CR (2012). Patient education strategies for hospitalized cardiovascular patients: a systematic review. *J Cardiovasc Nurs*, 27(2): 154-174.