Study on the effect of automatic closed-loop health education system based on doctor's advice and structured assessment on the health behavior of elderly bedridden patients.

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Abstract

Objective: To study the application value of automatic closed-loop health education system based on doctor's advice and structured evaluation on the treatment of elderly patients in bed.

Methods: A total of 236 elderly bedridden patients admitted to our hospital from March 2017 to July 2018 were enrolled in the study. They were randomly divided into study group and routine group according to the digital table method, with 118 cases in each group.

Results: The average bed rest time, daily average time to get out of bed, and daily bed activity time in the study group were significantly better than the conventional group at 1 month, 3 months, and 6 months, $p<0.05$. Academic significance; there was no significant difference in self-efficacy scores between the two groups at 1 month after discharge, $p>0.05$, the difference was not statistically significant. The self-efficacy scores of the study group at 3 months and 6 months after discharge were significantly better than the conventional group, $p<0.05$, and the differences were statistically significant.

Conclusion: The elderly patients with bedridden use a closed-loop health education system based on automatic feedback based on doctor's advice and structured assessment. The complication rate can be significantly reduced and has high clinical value.

Keywords: Automatic, Feedback, Closed loop, Health education, Elderly bedridden patients.

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Introduction

Through health education, people can help people understand which behaviors are affecting health, and can consciously choose behavioral lifestyles that are beneficial to health [1]. Health education improves people's health behaviors and lifestyles, thereby affecting their health and, to some extent, achieving disease prevention, health promotion and risk factors for improving quality of life. Systematic social education activities make it possible to assess educational outcomes [2]. Therefore, health education is an integral part of disease treatment. As time goes by, mobile phone push has become a hot spot [3-5].

The closed-loop health education system based on the automatic feedback of medical advice and structured evaluation is based on the intelligent nursing system of our hospital and the automatic closed-loop educational branch system linked with his system. It has certain application value in in-hospital treatment and follow-up treatment in hospital, mainly through the use of the Internet to form a form of care services [6].

Older bedridden patients need to stay in bed for a long time due to illness, so they are prone to pneumonia, stress injuries and falls. Patients with this disease can reduce the incidence of complications within a certain range [7] after routine treatment such as turning over, raising the bed, and physical therapy on the chest. The aim of this study was to analyze the effects of an automated closed-loop health education system based on medical order and structured assessment on elderly bedridden patients, as reported below.

Materials and Methods

General information

A total of 236 discharged bedridden patients admitted to our hospital from March 2017 to July 2018 were enrolled in the study group. The randomized digital table method was divided into the regular group of the study group, 118 cases in each group. There were 68 male patients in the study group and 50 female patients; the age ranged from 62 to 79 years old, with an average age of (65.88 ± 9.16) years; 24 patients had specialist and above cultural level, and 42 patients had high school literacy. 52 patients had junior high school and primary school literacy; 26 patients with hypertension, hyperglycemia and

hyperlipidemia, 28 patients with two diseases, 64 patients with one disease; 46 patients with more than 3 years in the history of smoking, 72 patients had no history of smoking.

There were 68 male patients and 50 female patients in the regular group; the age ranged from 64 to 75 years old, with an average age of (68.01 ± 10.3) years; 18 patients with college degree or above, and the total number of patients with high school literacy. In 38 cases, a total of 44 patients had a junior high school and primary school education level; 32 patients with hypertension, hyperglycemia, and hyperlipidemia had a total of 32 patients, and a total of 28 patients with any of the above diseases, combined with one of the diseases.

A total of 58 patients were included; a total of 52 patients had a history of smoking for more than 3 years, and the remaining 66 patients had no history of smoking. The gender, age, combined disease, education level, and smoking status of the two groups were compared. There was no significant difference between the two groups, $p>0.05$. The difference was not statistically significant and comparable. The study was approved by the Medical Ethics Committee of the hospital, and all patients who participated in the study signed informed consent.

Inclusion criteria: patients and their families volunteered to participate in the study; patients with MMSE scale screening cognitive ability scores above 10; ages 65 to 85 years; patients can only live indoors, stay in bed all day, or stay in bed More than 1 month; scored ≤ 61 by Barthel index.

Exclusion criteria: suffering from mental illness, language communication disorder; suffering from heart, lung, kidney and other important money cans systemic critical illness; poor treatment compliance, not in line with hospital treatment.

Method

Regular health education measures were given to patients in the routine group. For example, the nursing staff conducts one-on-one, face-to-face direct teaching of the inpatients, and the patients are followed up by telephone, WeChat platform or outpatient review at 1 month, 3 months, and 6 months after surgery. The study group patients implemented a closed-loop health education system based on the automatic feedback of the doctor's and structured assessment based on the regular group. Establish a platform. Based on the hospital's smart care, we can build a module that can be linked with his and smart care and manage the operation APP.

Nursing staff can carry out manual health education push for patients through computer disease system, mobile phone, PDA and other tools, such as patients' eating and dressing. Video, push the gastroscope to check the patient's precautions, push the fall assessment to high-risk patients to push the anti-fall knowledge, etc.; the hospitalized patients pay attention to the hospital WeChat public number, the public number QR code in the nurse mobile phone patient's name in the upper right corner, so It can be automatically pushed according to the doctor's advice, nursing care, and evaluation content. After the push, the nurse can see whether the patient is learning from the platform, whether or not he has any questions, and answer, according to the patient's situation, push the appropriate content, observe from the platform, ask the patient's learning situation and the difficult points, timely Reply.

The health education list and effect evaluation form can be automatically formed, and the comprehensive health education situation and effect evaluation of the patient can be obtained. The nursing staff can push and monitor the patient at any time to form a closed-loop quality management; when running the health management system, select one person respectively. Literature review and data collection for geriatric clinicians and clinical nurses with a seniority of more than 3 years. Video shooting and other work, the head nurse is responsible for reviewing and revising; the tube bed nurse implements a dynamic responsibility system for the patient in charge; the nurse who holds the nurse qualification certificate and has the capacity of the single tube bed downloads the hospital management software and provides instructions for use.

The patient's condition is relatively stable. When the patient is admitted to the hospital, the responsible nurse of the tube bed is responsible for the patient's concern about the hospital WeChat public number; according to the patient's condition, it can push the fixed health education program such as admission education, visiting instructions, condition notification, and prevention of falls; the tube bed nurse can pass the patient itself. The situation is manually applied by electronic case system, mobile phone, pda end and other tools; after the patient is discharged from the hospital, the responsible nurse can continue to manually push health education, through the online dynamics of the patient to understand the patient's condition recovery, compliance, and healthy living attitude.

The “Health Status Questionnaire” was sent at 3 months, 3 months, and 6 months after discharge from the hospital; quality control of the health education platform: the results of the health education of the tube bed nurses before going to work every day. The assessment, team leader and head nurse monitor the second level, and the nursing department directly forms health in the background. Push through reports and infertility patients, reading rate, response rate, satisfaction rate and answer questions.

Observation indicators

Self-designed health behavior questionnaires were used to conduct health behavior surveys at 3, 3, and 6 months postoperatively. Two groups of patients were evaluated with a self-efficacy test with a confidence of 0.91. Self-efficacy at 1 month, 3 months, and 6 months after discharge.

Evaluation criteria

The self-designed health behavior questionnaire included four daily activities: daily average bed activity time, daily average breathing exercise time, daily average bed activity time, and absolute bed rest time. The daily average absolute bed is divided into 24 hours, more than 12 hours, less than 8 hours and 3 time periods, and is scored by 3 to 1 points using the Likert 4 point classification method. The score range is 6 to 24 points, 24-20 is good, 19-15 is medium, and 14-4 is poor. This

questionnaire has good credibility after long-term pre-investigation and multiple revisions.

The self-efficacy test table has 6 items of friends, each of which is scored according to 1-10 points. The average score of 1-4 items reflects the "condition management self-efficacy" of management fatigue, pain, and depression. The average score of 5-6 the reaction, exercise, medication and other overall management of disease self-efficacy.

Statistical processing

Statistical data were analyzed using SPSS 20.0 software. Mean ± standard deviation was used to express ((x ± s) measurement data, t test, % to count data, and χ 2 test data comparison. P<0.05, the difference was statistically significant.

Results

Comparison of health behavior scores between the two groups

By comparison, the scores of the study group's bed activity rate, daily average get out of bed activity rate, and daily average respiratory exercise at 1 month, 3 months, and 6 months after discharge were compared with those of the conventional group. Significantly better than the conventional group, the health behavior scores at the above time points were (10.21 ± 3.55), (15.55 ± 3.51), (21.36 ± 1.89), p<0.05, and the difference was statistically significant (Table 1).

Table 1. *Comparison of health behavior scores between the two groups (x ± s).*

Group	Number of cases	1 Month after surgery	3 Months after surgery	6 Months after surgery
Research group	118	10.21 ± 3.55	15.55 ± 3.51	21.36 ± 1.89
Regular group	118	8.99 ± 3.45	9.54 ± 3.22	13.55 ± 5.12
t	-	6.451	9.125	10.357
P	-	0.05	0.05	0.05
Note: p<0.05, the difference was statistically significant.				

Comparison of self-efficacy scores of the two groups of patients

The self-efficacy scores of the two groups were discharged at 1 month, 3 months, and 6 months after surgery. There was no significant difference in the index between the two groups at 1 month after surgery (8.98 ± 3.12). The scores were (8.91 ± 3.08) points, p>0.05, and the difference was not statistically significant. The self-efficacy scores of the study group were significantly better than those of the conventional group at 3 months and 6 months after surgery. The scores of the group were (25.66 ± 8.12), (46.58 ± 12.22), p<0.05, the difference was statistically significant (Table 2).

Table 2. *Comparison of self-efficacy between the two groups (x ± s).*

Group	Number of cases	1 Month after surgery	3 Months after surgery	6 Months after surgery
Research group	118	8.98 ± 3.12	25.66 ± 8.12	46.58 ± 12.22
Regular group	118	8.91 ± 3.08	13.55 ± 4.56	21.55 ± 7.89
t	-	2.18	6.58	8.33
P	-	0.05	0.05	0.05
Note: p<0.05, the difference was statistically significant.				

Discussion

Older bedridden patients need to stay in bed for a long time, so the incidence of complications such as pneumonia and pressure injury is significantly increased [8].Health education is a systematic, systematic and systematic social education activity that enables people to consciously adopt healthy behaviors and lifestyles, eliminate or mitigate risk factors that affect health, prevent diseases, promote health, and improve the quality of life. And evaluate the educational effect [9].

Therefore, health education is an indispensable part of the treatment of the disease. Continuous development over time, mobile phone push has become a hot spot, more practice in the past is the main means of mobile phone push at this stage is through a third-party isolated platform, mobile app, but the shortcomings in the implementation of this method are patients, care All personnel need to download the app independently, which will form an isolated island of information, which cannot be connected with the hospital's his, doctor's and evaluation systems.

This study adopts a closed-loop health education system based on automatic feedback based on doctor's advice and structured assessment. The patient only needs to pay attention to the hospital WeChat public number. The system can automatically push health education according to the doctor's advice and evaluation score. The nursing staff also manually pushes the patient through the system, thereby improving the patient's acceptance of health education. The advantage is that manual push can be performed anytime and anywhere, which simplifies the push process and improves the efficiency of the care workers.

In addition, patients can continue to use the WeChat public account after discharge, so that health education can be extended to the family environment to achieve the purpose of continuing education and tracking of patients [10-12].

By comparison, the health behaviors of the study group were better than the conventional group at 1 month, 3 months, and 6 months after surgery; the self-efficacy at 3 months and 6 months after surgery was better than that of the conventional group.

In the process of managing patients in clinical work, there is often a situation of loss of post-discharge after discharge.

However, after adopting a closed-loop health education system based on automatic feedback based on doctor's advice and structured assessment, patients can continue to pay attention to the public number and maintain an interactive platform with nursing staff. Ask about the health status of the day by asking for it; the nursing staffs manually recommend videos such as the patient's own situation [13].

The patients who performed the system in this study did not have complications such as falls, and ensured the patient's life safety. The Health Education Module, in conjunction with the Internet Care Platform, provides timely guidance on issues that cannot be resolved by patients, providing patients with the care they need to ensure quality of care and medical safety [14].

Conclusion

In the elderly bedridden patients, the self-efficacy scores of the closed-loop health education system based on the automatic feedback of the doctor's advice and the structured evaluation are improved, the quality of life is improved, and the clinical value is high.

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