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The Impact of the Medical-Nursing Integration Model Management on the Rehabilitation of Stroke Patients

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Abstract

Objective: Under the concept of health management, this study aims to explore the effect of medical-nursing integration management on stroke patients after discharge, in order to improve the rehabilitation effect of middle-aged and elderly stroke patients. **Methods:** A total of 40 stroke patients discharged from hospital were selected and randomly divided into a control group (20 cases) and management group (20 cases). The control group received conventional home care management, while the observation group implemented home management based on the medical-nursing integration model. The Activities of Daily Living (ADL) scale was used to evaluate the daily living ability and medication compliance of patients in both groups at 0, 3, and 6 months after discharge, and satisfaction surveys were conducted during the management period. **Results:** The study showed that after 6 months of medical-nursing integration management, the daily living ability and medication compliance of patients in the management group were higher than those in the control group, with statistically significant differences (all $P < 0.001$). In addition, the satisfaction surveys indicated that the satisfaction of patients, caregivers, and medical staff in the management group was significantly improved (all $P < 0.05$). **Conclusion:** This study indicates that medical-nursing integration management and care can effectively improve the rehabilitation effect of stroke patients, with high application value, and provides a reference for the rehabilitation treatment of middle-aged and elderly stroke patients.

Keywords

Integrated Medical-Nursing Care, Stroke, Middle-Aged and Elderly, Quality of Life

1. Introduction

Stroke, commonly known as "cerebral apoplexy", is an acute cerebrovascular disease. It is caused by sudden rupture of cerebral blood vessels or vascular occlusion, which leads to interruption of cerebral blood flow and subsequent damage to brain tissues, including ischemic and hemorrhagic types [1]. After the onset of the disease, patients often experience cognitive function problems, such as slow response, as well as decline in abilities like self-care in daily life, learning and memory, spatial discrimination, and language expression. They may also be accompanied by psychological symptoms such as anxiety and depression. In severe cases, patients may even gradually develop dementia [2]. At present, with the accelerating process of population aging in China, the incidence rate of stroke is increasing year by year, bringing huge pressure to families and society [3] [4].

The integration of medical and nursing care is a new type of elderly care model that combines medical services with elderly care, achieving the goal of treating diseases when ill and recuperating when healthy [5]. It not only includes the popularization of health knowledge, health examination, disease prevention, rehabilitation care, long-term nursing and other contents for patients, but also covers daily life care, spiritual comfort, cultural and sports activities, psychological counseling, safety guarantee and hospice care [6]. At present, this model in China is still in the pilot exploration stage. This study intends to explore the impact on the daily living ability of stroke patients and their satisfaction after the implementation of the integration of medical and nursing care management, hoping to improve the quality of life of stroke patients, enhance their sense of happiness, reduce the occurrence of related complications, and alleviate the pressure on medical care.

2. Methods

2.1. Study Subjects

A total of 40 stroke patients who were treated and discharged from a tertiary hospital in Ma'anshan City, Anhui Province were selected for this study. They voluntarily participated in the study after being informed. The patients were randomly divided into a control group (20 cases) and management group (20 cases). The control group adopted a conventional home-based management model, while the observation group implemented a home-based management model integrating medical and nursing care. The Activities of Daily Living (ADL) scale was used to comprehensively evaluate the daily living ability and medication compliance of patients in both groups at 0, 3, and 6 months after discharge. In addition, satisfaction surveys were conducted during the management period to comprehensively understand the effectiveness of the medical-nursing integration management model in health management for stroke patients.

2.2. Inclusion and Exclusion Criteria for Patients

1) Inclusion criteria:

i) Patients with stroke aged ≥50 years who meet the clinical diagnostic criteria

for cerebrovascular diseases;

ii) Patients with first-episode stroke who received treatment in the hospital;

iii) Patients with clear consciousness and ability to conduct basic communication;

iv) Patients whose family members provide care for ≥4 hours per day;

v) Patients who voluntarily accept home care;

vi) Patients with complete clinical data and home care data.

2) Exclusion criteria:

i) Patients with comorbid mental diseases;

ii) Patients with severe heart failure, pulmonary infection, urinary tract infection or gastrointestinal bleeding;

iii) Patients with recurrent stroke.

2.3. Overview of the Medical-Nursing Integration Model

1) Establishment of a medical-nursing integration service team: The service team consists of staff from elderly care institutions and medical personnel from community hospitals cooperating with the institutions, including elderly care institution managers, elderly care workers, doctors, nurses, rehabilitation therapists, psychological counselors, etc.

2) Establishment of an information platform for the management of stroke patients integrating medical and nursing care: Elderly care institutions and cooperating community hospitals share all elderly care information and diagnosis and treatment information resources related to stroke and its complications.

3) Medical services provided by general practitioner teams (general practitioners, nurses, health managers, and public health physicians): Specific services include weekly follow-up by general practitioners to understand each patient's symptoms and rehabilitation progress; one-on-one guidance on lifestyle, medication, and rehabilitation assessment.

4) Health education sessions held once a month, covering content such as the etiology, diagnosis, treatment, prevention, and daily measurement of stroke and its complications.

5) Monthly follow-up, nursing guidance, and psychological counseling provided by health managers.

6) Organized by general practitioners, monthly discussion sessions are held for team members to exchange experiences and insights on rehabilitation training, aiming to jointly improve self-management skills.

2.4. Management Methods and Evaluation Indicators

1) Control group: The conventional home care management model was adopted, which involved conducting a pre-discharge health assessment for stroke patients, providing guidance and suggestions on home care to patients and their families. Management staff answered questions via telephone and conducted regular follow-ups on rehabilitation status once a month.

2) Management group: Implementing home care management based on the medical-nursing integration model, where managers adopt regular health assessment, conduct on-site training guidance, and carry out rehabilitation monitoring.

3) Activities of Daily Living (ADL) assessment: It includes 10 items such as eating, washing, dressing, using the toilet, bathing, walking, bladder control, rectal control, bed-chair transfer, and going up and down stairs, with a full score of 100. A higher score indicates better daily living ability of the patient. According to the assessment results, patients can be divided into 5 levels: Level 0: 100 points, able to take care of oneself without others' help; Level I: 61 - 99 points, mild functional impairment, basically able to take care of oneself; Level II: 41 - 60 points, moderate functional impairment, needing certain help in life; Level III: 21 - 40 points, severe functional impairment, obviously dependent on others in life; Level IV: 0 - 20 points, completely dependent on others in life.

4) Assessment of medication adherence: The Morisky Medication Adherence Scale (MMAS) was employed to conduct inquiries and scoring among patients regarding specific aspects, including "omission of medication", "discontinuation of medication due to symptom improvement", "discontinuation of medication due to symptom exacerbation", "non-adherence to prescribed medication regimens", "medication timing", and "dosage adjustment". The outcomes were presented in a positively oriented manner to comprehensively demonstrate the changes in medication adherence between the two patient groups.

2.5. Data Analysis

Data in this study were sorted using Excel and statistically analyzed with SPSS 27.0 software. Experimental results were expressed as Mean ± SD (*i.e.*, mean ± standard deviation), and t-test was used for comparison, with a significance level of $\alpha = 0.05$.

3. Results

3.1. Assessment of Activities of Daily Living (ADL) in Stroke Patients

The results showed that before the implementation of medical-nursing integration management, there were no statistically significant differences in ADL scores between the two groups of patients (all $P > 0.05$). After 3 and 6 months of management, the scores of the 10 items (including eating, washing, dressing, using the toilet, bathing, walking, bladder control, rectal control, bed-chair transfer, and going up and down stairs) in the management group were all higher than those in the control group, with statistically significant differences (all $P < 0.001$), as shown in Table 1.

3.2. Evaluation of Medication Compliance in Stroke Patients

The medication compliance of the two groups of patients was evaluated at discharge and 6 months after management. The results showed that at 6 months of

integrated medical and elderly care management, the medication compliance of the management group was higher than that of the control group, and the difference was statistically significant (all P < 0.001), as shown in Table 2.

Table 1. Comparison of ADL scores between the two groups during management (x ± s, points).

Time	control group (n = 20)	management group (n = 20)	t	P
At discharge	42.5 ± 5.8	43.1 ± 6.2	0.382	>0.05
3 months later	53.2 ± 7.1	68.5 ± 8.3	6.745	P<0.001
6 months later	58.6 ± 7.5	80.2 ± 6.9	10.521	P<0.001

Table 2. Comparison of medication compliance between the two groups of patients after 6 months of integrated medical and elderly care management (x ± s, points).

Time	control group (n=20)	management group (n = 20)	t	P
At discharge	4.2±1.1	4.3±1.0	0.324	>0.05
6 months later	4.5±1.2	6.8±0.9	8.762	<0.001

3.3. Satisfaction Survey of Key Participants in the Integrated Medical and Elderly Care Management

A satisfaction survey was conducted on two groups of patients, caregivers and medical staff under the integrated medical and elderly care management system. The results showed that compared with the control group, the satisfaction of all three groups was significantly increased (all P < 0.05), as shown in Table 3.

Table 3. Survey on Satisfaction with Home Management of Two Groups of Patients (N).

Group	Patients	caregivers	medical staff
control group (20 cases)	9	8	7
management group (20 cases)	15*	16*	17*

By χ^2 test, compared with the control group, *$P < 0.05$.

4. Discussion

Stroke is a central nervous system disease with high incidence, mortality and recurrence rates. It has now become the second leading cause of death worldwide after ischemic heart disease [7], with the highest incidence among the elderly [8]. At present, the phenomenon of separation of medical care and elderly care is widespread in China's elderly care model, resulting in many elderly stroke patients lacking long-term and effective medical care. However, in recent years, with the proposal of the new elderly care model of "integration of medical care and elderly care", it has played a key role in solving the current predicament of separation of medical care and elderly care [9].

The rehabilitation efficacy of patients with stroke sequelae is constrained by multiple factors. In addition to the increased risk of death with age (the mortality rate of patients over 70 years old exceeds 70%), underlying diseases and the progression of the disease also have a significant impact on rehabilitation outcomes. Clinical practice shows that hemorrhagic stroke patients with a history of hypertension, epilepsy, organ dysfunction or metabolic disorders often have poor rehabilitation effects; ischemic stroke patients with deep coma, multiple complications and extensive infarction also face a poor prognosis [10]. Given the limitations of stroke treatment methods, prevention has become the key to reducing morbidity and mortality, and the post-care of patients with sequelae is also crucial for improving the quality of life. As an innovative measure in the medical field, the application scope of medical-nursing integration is constantly expanding, and the rehabilitation effect of patients intervened by it has been widely recognized by medical practitioners [11].

In studies on the impact of the medical-nursing integration model on stroke patients, relevant researchers implemented team-based management of medical-nursing integration for patients in the recovery phase of acute cerebral infarction, and found that it could effectively improve patients' neurological function, limb motor function, enhance self-care ability, reduce the incidence of complications and adverse events, and improve satisfaction [12]; in the process of long-term care for disabled patients after cerebral ischemia in medical-nursing integration institutions, it was found that the construction of the medical-nursing integration model could effectively improve the rehabilitation level of disabled patients, thereby significantly improving their psychological state [13]. This study takes patients with sequelae of stroke as the subjects and conducts the practice of home care management under the medical and elderly care integration model. The results showed that for the patients in the management group who adopted this model, their ADL scores all significantly improved after 6 months of management. Specifically, they demonstrated more abundant personal energy, smoother fulfillment of family roles, clearer language expression, stronger activity ability, more stable emotions, more positive personality, better self-care ability, higher social participation, and better medication compliance. However, for the benchmark group of patients who did not adopt this model, the improvement in prognosis was not significant. In terms of the recognition of this model, the satisfaction of patients and caregivers in the management group with the rehabilitation effect and care services, as well as the satisfaction of medical staff with the rehabilitation progress of patients, were all higher than those in the control group. This result confirms that the medical and elderly care integration model can effectively improve the self-care ability of middle-aged and elderly stroke patients and has high application value. However, this study still has some limitations, such as a small sample size and a tight research schedule, which may have a certain impact on the research results. Nevertheless, this study still aims to provide some preliminary references for the rehabilitation treatment of elderly stroke patients, the improve-

ment of their quality of life, the reduction of complications, the alleviation of their medical burden, and the increase of their happiness index.

5. Conclusion

This study found that the medical-nursing integration model significantly improved the self-care ability and medication compliance of middle-aged and elderly stroke patients, facilitated rehabilitation treatment, and enhanced the satisfaction of patients, caregivers, and medical staff. However, it is undeniable that the quality of home care management for patients with stroke sequelae is also affected by many potential factors, such as the type of sequelae, gender differences, the rationality of care, and the implementation intensity of rehabilitation measures. This requires further improvement of the content settings and supervision methods of the home care management mechanism in the future, so as to provide a more solid guarantee for improving the quality of life of patients with stroke sequelae.

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Conflicts of Interest

There is no conflict of interest in this study.

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