



Comprehensive Continuing Nursing in Cerebral Stroke Patients Discharged from Hospital

Min Zhang*, Yang Yu, Yujun Chen, Guihong Fan

ABSTRACT

To explore the effect of comprehensive continuing nursing on the compliance, ability of daily living and quality of life of cerebral stroke patients discharged from hospital. A total of 98 cerebral stroke patients receiving treatment in our hospital from July 2015 to July 2017 are selected and divided into experimental group and control group according to the random number table method and there are 49 patients in each group. The control group receives routine continuing nursing of cerebral stroke while the experimental group receives comprehensive continuing nursing on this basis. After the intervention, the compliance of patients is evaluated using the morisky compliance scale; the ability of daily living of patients is evaluated using the Barthel's index scale; the quality of life of patients is evaluated using the quality of life comprehensive assessment scale. The compliance rate in the experimental group is 43 cases (87.76%), which is far higher than that in the control group (65.31%) and the data difference between the groups is statistically significant ($P < 0.05$). The total independence rate of patients in the experimental group is 37 cases (75.51%), which is much higher than 26 cases in the control group (53.06%) and the data difference between the groups is statistically significant ($P < 0.05$). The total score of patients in the experimental group is (225.59±29.77), which is higher than that of the control group (201.27±24.02) the data difference between the groups is statistically significant ($P < 0.05$). Comprehensive continuing nursing can effectively improve the compliance, ability of daily living and quality of life of patients discharged and is worthy of clinical promotion.

Key Words: Comprehensive Continuing Care, Cerebral Stroke, Compliance, Quality of Life

DOI Number: 10.14704/nq.2018.16.6.1677

NeuroQuantology 2018; 16(6):889-893

889

Introduction

Cerebral stroke, also known as cerebrovascular accident or stroke, is a common acute cerebrovascular disease, which mainly includes subarachnoid hemorrhage, cerebral hemorrhage and cerebral infarction. It often occurs in males over 40 years old and has a high recurrence rate, disability rate and lethality rate (Agunloye and Owolabi, 2014). With the development of medical technology, the lethality rate of cerebral stroke has been controlled to a certain extent, but patients with cerebral stroke are still plagued by multiple complications and high recurrence rate. It can only be improved through long-term of continuous treatment. Therefore, patients with

cerebral stroke still need regular medical care services for a relatively long period of time after discharge, assisting patients to perform rehabilitation at home (Zirak *et al.*, 2014). The definition of continuing nursing of American Aging Association is that the medical institution systematically designs the nursing behavior of patients to enable the patients to continuously receive high-quality and persistent nursing after the conversion of nursing sites. In the early 1990s, some medical institutions in the United States began to try to carry out continuous nursing in clinical nursing and achieved certain results (Ellison *et al.*, 2013). At present, a large number of medical institutions in China have

Corresponding author: Min Zhang

Address: The First Affiliated Hospital of Qiqihar Medical University, Heilongjiang 161000, China

e-mail ✉ 11420866982@qq.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 7 March 2018; **Accepted:** 3 May 2018



started exploring and researching continuing nursing. However, most of the continuing nursing still stays in the strengthening of pre-discharge education or strengthening telephone return visit. The continuing nursing method is simple and researches on the comprehensive continuing nursing are scarce (Nagae *et al.*, 2013). This study combines the comprehensive continuing care and nursing of patients with cerebral stroke care and has achieved certain results. The report is as follows.

Data and method

General data

A total of 98 cerebral stroke patients receiving treatment in our hospital from July 2015 to July 2017 are selected, including 63 males and 35 females, aged from 42 to 78 years old. Their mean age is (56.82 ± 6.23) years old. These patients are divided into experimental group and control group according to the random number table method and there are 49 patients in each group. The experimental group includes 31 male patients and 18 female patients, with an average age of (55.92 ± 6.38) years old; the control group includes 32 male patients and 17 female patients with an average age of (57.28 ± 6.10) years old. Inclusion criteria: 1: All patients are patients with cerebral stroke diagnosed for the first time; 2: Patients and their family members are informed of this study and agreed to participate in this study. Exclusion criteria: 1: The patients have multiple history of cerebral stroke diagnosis; 2: The patients have mental disorders, aphasia, deafness and other diseases affecting communication before the morbidity; 3: Patients with malignant tumors; 4: Patients with severe heart, liver, kidney and other viscera diseases or hematopoietic system diseases.

Methods

Nursing methods in the control group: The control group receives routine continuing nursing of cerebral stroke, which mainly includes: 1: Patients with cerebral stroke will receive unified discharge instruction before discharge; 2: The charge nurses conduct telephone return visit with patients in every month to confirm the patient's health condition, completion of rehabilitation training and medication situation. They urge patients to complete rehabilitation training as required, and ask the patient to conduct re-examination regularly to hospital.

The experimental group receives the same discharge instruction as the control group. And this group also receives the comprehensive continuing nursing that focuses on individualized nursing, online communication, and strengthening communication on this basis with the goal of improving on their treatment compliance, strengthening their ability of daily living and improving their quality of life. The specific methods are as follows: 1: Individualized nursing: An intervention group consisting of a head nurse and three charge nurses is established. The systematic analysis is conducted on each patient who is going to be discharged from the hospital and a continuing nursing scheme such as healthy diet, rehabilitation training and reasonable daily schedule that is in line with the individual condition of each patient is established based on their knowledge background, physical condition and treatment effect. A charge nurse is responsible for the psychological counseling of patients before discharge and she will introduce relevant knowledge and successful rehabilitation cases to patients and their family as far as possible to alleviate the psychological burden or depression of patients that their future life might be influenced due to illness and other reasons. 2: On-line communication: Establish online communication network. The questions of discharged patients and their family can be answered timely through the methods like official accounts and WeChat group. Timely home visits or instruction can be provided for patients with severe symptoms and the mobility and timeliness of continuing nursing should be strengthened. 3: Enhance communication: Establish the continuing nursing tracking services based on telephone return visit and home visits. The frequency of telephone visits in the first three months after discharge from hospital is once every two weeks and the frequency of telephone visits after three months is once every month. Also, the frequency of telephone visits should be increased or decreased properly according to the actual situation of patients. The rehabilitation condition, psychological status and other emergencies can be understood through telephone interviews. The frequency of home visits in the first six months after discharge from hospital is once every month after discharge from the hospital and the frequency of home visits after six months should be increased or decreased properly according to the actual situation of patients. The rehabilitation training and psychological condition of patients

can be confirmed through home visits and patients and their family can be provided with further rehabilitation training instruction to help the patients with psychological disorder in psychological counseling.

Observation indexes

Treatment compliance: The Morisky Medication Adherence Scale (MMAS) is used to evaluate the treatment compliance of patients during the sixth month after the discharge (after intervention). The scale measures the compliance of patients from eight perspectives. Items 1 to 4, 6, and 7 answer “yes” will be marked 0, answer “no” will be marked 1. The score standard of Item 5 is reverse. The Item 8 adopts the Likert 5-level scoring method. The total score of 8 points or more indicates good compliance; the total score of 6 to 8 points indicates moderate compliance; the total points of 6 points or less indicates poor compliance. Compliance rate=(number of cases with good compliance+number of cases with poor compliance)/total number of cases in this group).

Ability of daily living: The Barthel index of ADL is used to evaluate the ability of daily living of patients during the sixth month after the discharge (after intervention). The Barthel index was scored on a range of 0 to 100. The range of 0 to 24 indicates complete compliance; the range of 25 to 49 indicates heavy compliance; the range of 50 to 74 indicates partial compliance; the range of 75 to 100 indicate complete independence. Total independence rate = (number of cases with complete independence + number of cases with partial compliance) / total number of cases in this group.

Quality of life: The quality of life of patients is evaluated using the General Quality of Life Inventory (GQOLI) during the sixth month after the discharge from hospital (after intervention). The scale evaluates the quality of life of patients from 74 items in four dimensions,

namely physical function, psychological function, social function and material life status. The higher the score, the higher the quality of life of patients.

Statistical methods

The statistical analysis is conducted on the data obtained in this study using the SPSS 19.0 software. The χ^2 test is used for the enumeration data and the t-test is used for the measurement data. The P <0.05 indicates that the difference between the two groups is statistically significant.

Results

Compliance comparison of patients in two groups

The compliance rate of patients in experimental group is much higher than that in control group and the difference between the two groups is statistically significant (P<0.05).

Table 1. Compliance comparison of patients in two groups (case %)

Group	n	Compliance			Compliance rate
		Good	Moderate	Poor	
Experimental group	49	16 (32.65)	27 (55.10)	6 (12.24)	43 (87.76)
Control group	49	7 (14.29)	25 (51.02)	17 (34.69)	32 (65.31)
χ^2		4.602	0.164	6.874	6.874
P		0.032	0.686	0.009	0.009

Comparison of ability of daily living between patients in two groups

The total independence rate in the experimental group is much higher than that in the control group. The difference between the two groups is statistically significant (P<0.05) **Table 2.**

Comparison of quality of life between patients in two groups

The score of each dimension of quality of life and the total score in the experimental group are higher than those in the control group. The difference between the two groups is statistically significant (P<0.05) **Table 3.**

Table 2. Comparison of ability of daily living between patients in two groups (case %)

Group	n	Complete independence	Partial independence	Heavy compliance	Complete compliance	Total independence rate
Experimental group	49	12 (24.49)	25 (51.02)	10 (20.41)	2 (4.08)	37 (75.51)
Control group	49	5 (10.20)	21 (42.86)	16 (32.65)	7 (14.29)	26 (53.06)
χ^2		3.487	0.656	1.885	0.059	5.387
P		0.062	0.418	0.170	0.080	0.020

Table 3. Comparison of quality of life between patients in two groups (points)

Group	n	Physical function	Psychological function	Social function	Material life	Total score
Experimental group	49	57.74±7.37	58.42±8.25	55.47±6.92	53.96±7.23	225.59±29.77
Control group	49	46.91±5.46	52.48±6.42	52.06±5.32	49.82±6.82	201.27±24.02
t		8.265	3.978	2.735	2.916	4.450
P		<0.001	<0.001	0.007	0.004	<0.001



Discussion

Cerebral stroke is an acute cerebrovascular disease that often occurs in male patients over the age of 40 and has a high recurrence rate, disability rate, and lethality (Scalzo *et al.*, 2012). In China, the number of patients with cerebral stroke is as high as several million each year, and the disability rate of survivors is as high as above 70%. The self-nursing ability of patients with cerebral stroke is significantly reduced and their quality of life is seriously affected, even posing a threat to their life health (Adelman *et al.*, 2014). Studies have suggested that the lack of continuing nursing after discharge from hospital is an important reason for the poor quality of living of patients with cerebral stroke (Buijck *et al.*, 2012). The optimal recovery period for cerebral stroke is the first six months after the morbidity and the nursing received by patients after discharge can often play a significant role in the recovery of patients. The nursing provided by the medical institutions for patients with cerebral stroke is often the basic nursing provided in hospital and telephone return visits after discharge and systematic comprehensive continuing nursing system has not been established, which makes it difficult to guarantee the recovery of patients with cerebral stroke after discharge (Schaefer *et al.*, 2005).

This study provides a systematic comprehensive continuing nursing scheme for patients in experimental group. Through the comprehensive nursing based on individualized nursing, online communication and strengthening communication, the treatment compliance, ability of daily living and quality of life of patients are improved. The results of this study show that the compliance rate of the experimental group is much higher than that of the control group and the difference between the groups is statistically significant ($P < 0.05$), which is due to the fact that patients with cerebral stroke are often accompanied by some physical or mental disorders. Therefore, it is still very difficult for patients with cerebral stroke after the discharge to perform long-term medication requirements and complex rehabilitation training. The control group uses routine continuing nursing of cerebral stroke, which only guarantees the statistics on the physical condition of patients every month after discharge from the hospital. It does not provide strengthening guidance for the medication knowledge or rehabilitation training of patients and thus it is difficult for the compliance of patients to be improved. The experimental group

adopts comprehensive continuing nursing and a detailed continuing nursing plan is formulated based on the general information background of patients before discharge and the monthly family visits also ensure that the problems of patients can be solved timely and further counseling can be provided. Therefore, the compliance of patients can be improved naturally. The total independence rate of the experimental group in this study is much higher than that of the control group, and the difference between the two groups is statistically significant ($P < 0.05$). The reason for this phenomenon is that the experimental group adopts comprehensive continuing nursing, and a continuing nursing plan is formulated based on the specific conditions of patients. At the same time, the monthly home visits also ensure the treatment compliance of patients, improving the treatment compliance of patients. Also, patients can perform correct medication according to the requirements of the hospital. Patients can perform effective rehabilitation training and their independent living ability is naturally enhanced. In addition, the score of each dimension and the total scores of quality of life in the experimental group are higher than those in the control group and the difference between the groups is statistically significant ($P < 0.05$). The quality of life is reflected in the intervention effect of patients in the two groups after six months of continuing nursing. The high quality of life of patients in the experimental group indicates that the comprehensive continuing nursing improves the quality of living of patients. The reason is that the individualized continuing nursing plan enables patients to follow the appropriate rehabilitation plan for self-nursing after discharge while the monthly home visits also ensure the implementation and timely adjustment of the continuing nursing plan. The construction of online communication network facilitates the communication between doctors and patients, making it possible for patients to have relevant problems answered immediately and thus the quality of life of patients can be naturally improved.

Conclusions

In summary, the use of comprehensive continuing care can effectively improve the compliance of patients, strengthen their independent living ability, enhance their quality of life and effectively avoid the poor recovery effect or other complications caused by inadequate nursing



intensity after discharge. The research on continuing nursing has just started in China, so a scientific and systematic continuing nursing system has not yet been established. Therefore, it is imperative to explore a scientific, standardized and individualized nursing model after discharge. New nursing methods should be explored on the basis of this study to enrich and improve the nursing model of patients with cerebral stroke after discharge.

References

- Adelman EE, Meurer WJ, Nance DK. Stroke awareness among inpatient nursing staff at an academic medical center. *Stroke: A Journal of Cerebral Circulation* 2014; 45(1): 271-73.
- Agunloye AM, Owolabi MO. Exploring carotid sonographic parameters associated with stroke risk among hypertensive stroke patients compared to hypertensive controls. *Journal of Ultrasound in Medicine* 2014; 33(6): 975-83.
- Buijck BI, Zuidema SU, Spruit-VanEijk M. Neuropsychiatric symptoms in geriatric patients admitted to skilled nursing facilities in nursing homes for rehabilitation after stroke: A longitudinal multicenter study. *International Journal of Geriatric Psychiatry* 2012; 27(7): 734-41.
- Ellison S, Lamb J, Haines A. A guide for identification and continuing care of adult congenital heart disease patients in primary care. *International Journal of Cardiology* 2013; 163(3): 260-65.
- Nagae H, Tanigaki S, Okada M. Identifying structure and aspects that 'continuing nursing care' used in discharge support from hospital to home care in Japan. *International Journal of Nursing Practice* 2013; 19(Suppl. s2): 50-58.
- Schaefer JA, Ingudomnukul E, Harris AH. Continuity of care practices and substance use disorder patients' engagement in continuing care. *Medical Care* 2005; 43(12): 1234-41.
- Scalzo F, Hao Q, Alger JR. Regional prediction of tissue fate in acute ischemic stroke. *Annals of Biomedical Engineering: The Journal of the Biomedical Engineering Society* 2012; 40(10): 2177-87.
- Zirak P, Delgado-Mederos R, Dinia L. Transcranial diffuse optical monitoring of microvascular cerebral hemodynamics after thrombolysis in ischemic stroke. *Journal of Biomedical Optics* 2014; 19(1): 018002.