

Study on Nursing Effect of Individualized Health Education Combined with Cognitive Training in Elderly Stroke Patients

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Objective To study the nursing effect of individualized health education combined with cognitive training in elderly stroke patients. **Methods** 112 elderly stroke patients treated in the Department of Neurology of our hospital from January to June 2017 were randomly divided into experimental group and control group. In the control group, routine treatment, nursing and rehabilitation exercises were carried out, and regular health education was carried out. The experimental group, on the basis of routine treatment, nursing and rehabilitation exercise, carried out individualized health education and cognitive training combining the content of individualized health education. The effect of intervention was evaluated by Montreal Cognitive Assessment Scale (MoCA), health education questionnaire, daily life self-care scale (ADL) and nurse job satisfaction questionnaire before intervention, at the end of intervention for 4 weeks and at the end of intervention for 12 weeks. **Results** At the end of 4th and 12th week after intervention, the scores of MoCA, the awareness rate of health education, ADL and job satisfaction of nurses were higher than those before intervention, and the observation group was higher than that of the control group ($P < 0.05$), with statistical difference ($P < 0.05$). **Conclusion** Individualized health education combined with cognitive training can effectively improve the patients' cognitive function, improve the patients' awareness of stroke disease and the compliance of health education, improve the patients' self-care ability in daily life and the satisfaction of nursing work, so as to improve the patients' quality of life and quality of living.

Key words: Individualized health education; Cognitive training; Elderly stroke patients; Nursing effect

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Stroke is also called "cerebrovascular accident", which refers to an acute cerebral blood circulation disorder caused by stenosis, occlusion or sudden rupture of blood vessels in the patient's brain caused by various predisposing factors, thus causing brain tissue injury¹, mainly manifested as limb, speech and sensation disorders, serious cases of consciousness disorders, even endangering the patient's life. It has been shown that stroke is not only the third leading cause of human death, but also the first disabling disease in China², with about 70% of patients remaining with various degrees of physical dysfunction after treatment³. Early intervention in patients with stroke has been shown to be effective in reducing patient mortality

and disability⁴. In addition to effective treatment, nursing and rehabilitation exercises, it is also important for patients to adopt a healthy lifestyle through health education. Because the elderly stroke patients have different degrees of cognitive impairment⁵⁻⁷, cognitive function recovery is not paid enough attention, traditional health education model also cannot effectively master the health education content of stroke, health education compliance is low, so that the patients' self-care ability and long-term quality of life cannot be guaranteed after discharge, so it is very important for patients to improve their cognitive function and carry out targeted health education. In this study, on the basis of routine treatment and nursing, the

combination of individualized health education and cognitive training was applied to the patients, and good results were obtained. It is hereby reported as follows.

OBJECTS AND METHODS

Study objects: From January 2019 to June 2019, the elderly stroke patients who meet the criteria were selected as study objects in Hainan Provincial Cadre Hospital (Hainan Geriatric Hospital). **Inclusion criteria:** (1) The age of patient was between 60 and 80 years old. The gender of male and female patients was not limited. (2) The patient met the diagnosis criteria for stroke adopted by the Fourth National Cerebrovascular Disease Conference⁸. The diagnosis was confirmed by CT or MRI. (3) Patients were in stable condition for the first time. (4) There was no cognitive disorder before onset. The MoCA score was less than 26 points after onset. 1 score was added for the educational period of less than 12 years. (5) Patients and family members agreed to sign the informed consent form. **Exclusion criteria:** (1)

Patients had disturbance of consciousness, vision and hearing. (2) Patients had language communication disorder. (3) Patients had multiple diseases, which were serious and complicated. (4) Patients had a psychiatric disorder and severe mental impairment. (5) Those who are unable to cooperate actively. **Exclusion criteria:** (1) Patients whose conditions were aggravated and could not tolerate the intervention measures. (2) Withdrawals, lost to follow-up or death. A total of 112 study objects were selected and randomly divided into the experimental group (n = 56) and the control group (n = 56) according to the method of random number table. The patients in the two groups were aged between 60 and 80 years, with a mean age of (68 ± 4) years, including 67 males and 45 females, 91 patients with cerebral infarction and 11 patients with cerebral hemorrhage. The two groups were comparable in terms of gender, age, disease, education and other general data, and there was no significant statistical difference (P>0.05) (See Table 1).

Table 1.
Comparison of general data between the two groups [cases (%)]

Items	Experimental group	Control group	X ²	P value
Gender				
Male	36 (64.3)	33 (58.9)	0.340	0.560
Female	20 (35.7)	23 (41.1)		
Age				
60-70 years	38 (73.2)	42(75.0)	0.700	0.403
71-80 years	18 (16.8)	14(25.0)		
Educational background				
Primary schools and below	12(21.4)	15(26.8)	0.955	0.620
Secondary school	27(48.2)	22(39.3)		
University	17(30.4)	19(33.9)		
Illness				
Cerebral infarction	44 (78.6)	41(73.2)	0.439	0.508
Cerebral hemorrhage	12 (21.4)	15 (26.8)		

Intervention methods Two groups of elderly patients with stroke were treated with routine treatment, nursing and rehabilitation exercise after enrollment. In the control group, the routine health education was carried out, while in the experimental group, the cognitive training and individualized health education combined with the content of health education were carried out. The specific implementation steps are as follows:

Preparation phases the department shall establish a study group, which is composed of 2

rehabilitation physicians, 2 rehabilitation therapists and 2 rehabilitation nurses. On the basis of reviewing a large number of literatures, the research team established individualized health education implementation strategies, cognitive training programs, and formulated the items, pictures and materials required for cognitive training. Through screening, it is confirmed that there are 20 cognitive pictures of verbs, 100 pieces of nouns, 20 pieces of phrases, 10 pieces of digits, 100 items of addition and subtraction with the figures less than

100, 32 pieces of sentences and 10 oral quotes combined with the knowledge of stroke health education. Before intervention, study team members received homogenous training to ensure proper implementation of individualized health education and cognitive training.

Implementation of individualized health education (1) Upon admission, the medical staff shall fully evaluate the patients through face-to-face conversation, physical examination and reading of medical records, confirm the problems existing in the patients, and formulate a targeted individualized health education scheme. (2) Health education should be provided to the patients on a daily basis according to the contents of the patient's individualized health education program. Health education includes hospital environment and layout, admission instructions, responsible doctors and nurses, disease etiology, pathogenesis and treatment measures, examination results and precautions, diet and medication, main nursing measures, functional exercise, psychology, etc. (3) According to the individualized health education program, the patient's education knowledge and mastery of the implementation were evaluated daily, and the plan was adjusted in real time according to the evaluation results to ensure the effectiveness of the health plan implementation. (4) Value about the patient's psychological assessment and the evaluation of social support, strengthen the patient's psychological counseling, encourage the patients and their families to participate together, and increase the patient's confidence in recovering the disease.

The content of health education in cognitive function training is integrated into the process of cognitive training, and the knowledge of health education is strengthened on the basis of nerve function remodeling. The cognitive training was carried out by the rehabilitation therapists of the research group. The training contents included: ① Memory training: select the relevant pictures of the characters, places, daily necessities, activities of daily living and stroke health education (data, phrases, sentences and tips), repeatedly explain to the patients, retell the patients, remembering the content

s, make the patients carry out the training of immediate recall and remembering 5 minutes later, and carry out the training of instantaneous memory and delayed memory. ② Attention training: read the number, make the patient hear the specific number and tap the desktop; read 8-12 digits to the patient according to the law, let the patient concentrate, listen carefully, and then repeat; read the health education pithy formula of stroke to the patient, and ask the patient repeat. ③ Computational training: ask the patient the addition and subtraction with the figures less than 100, and let the patient think and calculate; simulate supermarket shopping, and carry out business calculation. ④ Enforcement training: give specific instructions to the patient and train the patient's executive ability. The patient was instructed to practice repeatedly by taking such actions as a good limb position on the patient's demonstration bed, dressing and washing in bed, eating, turning over and transferring, and wheelchair transfer in bed. ⑤ Logical thinking ability and language training: give the patient a picture showing time, place and character, and encourage the patient to express the picture content in language. ⑥ Perception disorder training: The operator can place the patient's required supplies at the position where the patient's limbs can reach at any time, encourage them to use them by themselves, and stand on the patient's affected side when communicating with the patient, so as to attract the patient's attention and perception to the affected side and to prevent bias from being ignored. Training schedule: twice a day, 30 min each time.

Evaluation methods

The team members assessed the cognitive function and self-care ability of the patients before intervention, at the end of intervention for 4 weeks and at the end of intervention for 12 weeks, and assessed the health education awareness rate and job satisfaction of the nurses at the end of intervention for 4 weeks and at the end of intervention for 12 weeks. (1) The cognitive function of patients was assessed by Montreal Cognitive Assessment Scale (MoCA), in which the total score was 30, and the score was less than 26 was considered as cognitive

disorder. Patients with less than 12 years of education were given a score of 1 on the test results. It includes 11 items in 8 cognitive domains such as attention and concentration, executive function, memory, language, visual structure skills, abstract thinking, computing and orientation. (2) The patient's self-care ability was assessed by the Self-care Ability of Daily Living Scale (ADL). There were 14 items of ADL, including body self-care scale (including dressing, eating, combing, going to toilet, walking and bathing) and instrumental activities of daily living scale (preparing meals, doing housework, taking medicine, washing, calling, shopping, using transportation and self-care economy). The improvement of self-care ability before and after intervention was compared between the two groups. Each item is scored on a scale of 1-4 according to the difficulty of completion. The greater the score, the greater the difficulty of completion, and the worse the ability of self-care. (3) Health education awareness rate and nurse satisfaction rate were evaluated by hospital self-made form. The full score was 100, and the higher the score, the higher the

awareness rate and satisfaction.

Statistical processing: SPSS 18.0 software was used for data processing, chi-square test was used for counting data, mean and standard deviation were used for measurement data, t test was used for comparison between groups, $P < 0.05$ indicated statistical significance.

RESULTS

Comparison of MoCA scores and assessment of activities of daily living between the two groups before and after intervention

Before intervention, there was no significant difference in MoCA score and self-care ability score between the two groups ($P > 0.05$); after intervention, MoCA score and self-care ability in daily life in both groups were improved to some extent, and MoCA score and self-care ability in daily life in the experimental group were significantly superior to that in the control group, and the difference had statistical significance ($P < 0.05$), indicating that the intervention measures in the experimental group were superior to that in the control group (see Table 2).

Table 2. Comparison of MoCA score and assessment of activities of daily living between the two groups before and after intervention ($\bar{x} \pm s$)					
Group	Number of cases	MOCA score		ADL score	
		Before intervention	After intervention	Before intervention	After intervention
Experimental group	56	14.19 \pm 3.15	22.14 \pm 3.36	23.60 \pm 2.48	19.94 \pm 2.44
Control group	56	14.64 \pm 3.55	19.35 \pm 3.22	23.73 \pm 1.93	21.39 \pm 1.90
t		0.702	4.475	0.297	3.493
P		0.484	0.000	0.767	0.001

Comparison between experimental group and control group in life health education awareness rate and patients' satisfaction with nurse's work after intervention

After intervention, the awareness rate of health education and the score of patients' satisfactions with nurse's work in the experimental group were significantly higher than those in the control group (Table 3), and the difference had statistical significance ($P < 0.05$).

Table 3. Comparison of awareness rate of patients' health education and job satisfaction score of nurses ($\bar{x} \pm s$)	
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Group	Number of cases	Health education awareness rate	Nurse job satisfaction
Experimental group	56	83.89 \pm 9.78	92.75 \pm 2.95
Control group	56	74.62 \pm 5.81	89.69 \pm 4.95
t		6.095	3.961
P		0.000	0.000

DISCUSSION

Stroke is a common cerebrovascular disease in clinical practice, with very high incidence rate, disability and mortality⁸⁻⁹, which is common in the elderly population. After the patient's admission, the medical staff can improve the patient's

prognosis through a series of treatments, nursing, rehabilitation exercises and health guidance. Studies have shown that more than half of patients with stroke experience symptoms such as memory, attention, comprehension, and decline ¹⁰, due to memory, attention, loss of comprehension, loss of thinking, and information transmission disorders that affect the patient's ability to perform, receive, and cooperate, resulting in impediments to further treatment, care, and rehabilitation interventions, and patients who are unable to actively participate in the entire course of treatment receive all treatments passively, rehabilitation training, nursing intervention of nursing staff and failure to follow the health education guidance of nursing staff after discharge also seriously affect the long-term quality of life and quality of living of patients, leading to vicious circle ¹¹.

Cognitive function training is helpful to improve cognitive function, improve patient's treatment compliance, improve the self-care ability in daily life. Central nervous system of stroke patients have compensatory ability and self-recovery ability in structure and function, and its natural recovery ability is stronger in the early stage of the disease. However, the plasticity of cerebral cortical function that is only beneficial to the patient's own development is very limited. It has been found that continuous stimulation of the injured central nervous system by regular long-term cognitive function training can promote recovery of function and improve cognitive function in the elderly with stroke ¹². The improvement of the patient's cognitive function, the improvement of the cooperation of treatment and nursing to the medical staff and the increase of the treatment compliance are beneficial to the recovery of the disease. Studies have shown that cognitive function training helps to establish new neural communication pathways in the central nervous system, promotes correct motor function and form, and promotes recovery of patient's limb function and improvement of activities of daily living ¹³.

Individualized health education is more conducive to patients to adopt healthy behavior pattern. The purpose of health education is to guide

patients' knowledge of disease prevention and treatment and nursing, avoid or eliminate the related factors affecting health, and educate people to develop good behavior and life style. Traditional health education introduces disease knowledge, diet, treatment, functional exercise and other knowledge directly to patients, without considering individual differences of patients. Individualized health education provides adequate assessment of patients and, on the basis of general education, a more targeted stroke health education. Because of the limitation of elderly stroke patients' ability to receive knowledge, this study makes the contents of health education into modules, combines the knowledge of health education with cognitive training, and takes individualized and targeted training. At the same time of cognitive training, the patients further strengthen the content of health education and carry out it. This study found that, after the intervention, the awareness rate of health education in the experimental group was significantly higher than that in the control group ($P < 0.05$), the scores of MoCA and the ability of self-care in daily life in the experimental group were significantly better than that in the control group ($P < 0.05$), and the satisfaction degree of the experimental group was also significantly higher than that in the control group ($P < 0.05$), and the difference had statistical significance.

In conclusion, individualized health education combined with cognitive training can effectively improve patients' cognitive function, improve patients' awareness of stroke disease and health education compliance, and improve patients' self-care ability in daily life, thus improving patients' quality of life and quality of living.

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