

Original Article

Effect of nursing based on the hopeless self-esteem theory plus multi-dimensional intensive nursing for elderly patients with acute cerebral infarction complicated with depression

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Abstract: Purpose: To explore the effect of nursing based on the hopeless self-esteem theory plus multi-dimensional intensive nursing on the self-esteem level and prognosis of elderly patients with acute cerebral infarction (ACI) complicated with depression. Methods: Eighty patients with ACI complicated with depression who were treated in our hospital from September 2018 to September 2020 were selected and randomized into the observation group and the control group (n = 40 each). The observation group received the model of hopeless self-esteem theory combined with multi-dimensional intensive nursing, while the control group received conventional nursing. The clinical efficacy, depression degree, self-esteem level, living ability, quality of life, and attribution mode were compared. Results: The overall effective rate was reported at a notably higher rate in the observation group (90.00%) compared to the control group (65.00%) (P < 0.05); After intervention, the observation group had a markedly lower Geriatric Depression Scale (GDS) score than the control group (P < 0.05); After intervention, the observation group showed appreciably higher Rosenberg Self Esteem Scale (RSES) score and Barthel index compared to the control group (P < 0.05); After intervention, the observation group had a remarkably higher level of the quality of life in all dimensions than the control group (P < 0.05); After intervention, there were more positive events in the observation group as compared to the control group (P < 0.05), whereas there were more negative events in the control group as compared to the observation group (P < 0.05). Conclusion: The hopeless self-esteem theory combined with multi-dimensional intensive nursing can apparently increase the self-esteem level of patients, establish a positive attribution mode, beef up their self-confidence, reduce the degree of depression, upgrade their postoperative living ability and quality of life, and improve prognosis and clinical efficacy.

Keywords: Hopeless self-esteem theory, multi-dimensional intensive nursing, acute cerebral infarction, depression, self-esteem

Introduction

Acute cerebral infarction (ACI) is frequently reported in the elderly. The interruption of cerebral vascular supply leads to brain cell death, which is extremely harmful to the health of the elderly [1]. After ACI treatment, cognitive impairment combined with disease distress often leads to depression, language impairment, paralysis and other sequelae, which adversely affects the normal life of patients after surgery and reduces the quality of life and prognosis

[2]. It is thought in the hopeless self-esteem theory that low self-esteem levels are closely related to mental illness. Patients who develop depression have lower self-esteem levels and are prone to attribute negative events to occurrences in their lives. They feel hopeless, which in turn develops into depression and forms a vicious cycle [3]. In this study, we compared the effect of nursing based on hopeless self-esteem theory combined with multi-dimensional intensive nursing on self-esteem level and prognosis of patients with ACI complicated with

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depression, explored its clinical value, and provided theoretical guidance for subsequent clinical nursing. It is reported below.

Materials and methods

General data

Eighty patients with ACI complicated with depression who were treated in our hospital from September 2018 to September 2020 were selected and randomly assigned into the observation group and the control group (n = 40 each) by a random number table. Informed consent was signed by the patients. The observation group received nursing based on the hopeless self-esteem theory combined with multi-dimensional intensive nursing, while the control group received conventional nursing. There was no statistically significant difference in the general data between the two groups ($P > 0.05$, **Table 1**). Inclusion criteria: (1) Those who met the diagnostic criteria of ACI, as confirmed by imaging [4]; (2) Those who met the diagnostic criteria of depression [5]; (3) Those who were aged ≥ 60 years old. Exclusion criteria: (1) Patients with psychosis; (2) Patients with malignant tumors; (3) Patients with severe dysfunction of other organs; (4) Patients with poor compliance. The study protocol was approved by the Ethics Committee of the first Affiliated Hospital of Qinghai University with the Approved No. of P-SL-2018073.

Methods

Patients in both groups were treated with conventional drugs, such as antiplatelet therapy, improvement of cerebral function and perfusion, and scavenging of free radicals. Conventional nursing was given in the control group: basic nursing interventions were conducted such as psychological nursing, disease knowledge guidance, health propaganda and education, and exercise guidance. The nursing based on the hopeless self-esteem theory combined with multi-dimensional intensive nursing was given in the observation group. (1) Data collection: Baseline data of patients was collected, and their living and psychological status were assessed. (2) Establishment of a nursing group: The members of the group were composed of an associate chief physician, a psychologist and a responsible nurse, and a personalized rehabilitation training program

was developed according to the evaluation results of each patient. Nursing members maintained a sincere and warm attitude during communication with patients. (3) Attribution training: It was required to communicate deeply with the patients to understand their attribution mode, help them recognize their bad attribution mode, introduce the positive attribution mode, guide the patients to observe things from different angles by emphasizing the situational change technique, so as to enable them to observe and learn the positive attribution mode of others. Negative thinking styles were eliminated by sharing the characteristics of attribution modes of each group among patients, analyzing adverse attribution modes and their malignant effects, and discussing and learning positive attribution modes. Once patients began to have a positive attribution mode, they were forced to summarize the changes arising from the analysis and share with other patients for continuous reinforcement. (4) Self-esteem training: It was necessary to encourage patients to tell each other valuable, meaningful and memorable past events in their lives, and encourage them to share their successes to help them build self-confidence and self-worth and improve their self-esteem. (5) Physical exercise: It was necessary to encourage patients to actively participate in communication with others and restore language function. Moreover, patients were supervised to perform appropriate physical movement after their conditions became stable, including standing balance, sitting up change, limb flexion, etc., while correcting bad gait and standing posture. As their limb coordination returned to normal level, the intensity of the exercise was gradually increased, including going up and down stairs, walking, and jogging. (6) Living ability training: It was required to develop appropriate dietary plans for patients, encourage them to actively complete daily tasks, and establish a healthy lifestyle. (7) Family intervention: It was required to instruct the patients' family to take care of their daily life, urge and accompany them to train according to the rehabilitation training program, give care, so as to help them build self-confidence, restore self-esteem, and communicate with them with a positive and optimistic attitude. After discharge, it was required to urge the them to take medicine and perform rehabilitation training on time, give timely feed back to

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Table 1. Comparison of general data of two groups of patients

Group	n	Sex		Age	Course	Complication			Position of ACI		
						HBP	CHD	DM	Left	Right	Bilateral
Observation group	40	25 (62.50)	15 (37.50)	68.63±5.98	3.42±1.05	15 (37.50)	9 (22.50)	7 (17.50)	20 (50.00)	13 (32.50)	7 (17.50)
Control group	40	23 (57.50)	17 (42.50)	68.14±5.67	3.65±1.11	17 (42.50)	7 (17.50)	7 (17.50)	22 (55.00)	15 (37.50)	3 (7.50)
Statistical		0.208		0.376	0.952	0.37			0.78		
<i>P</i>		0.648		0.708	0.344	0.711			0.435		

Table 2. Comparison of clinical efficacy between two groups

Group	n	Significantly effective	Effective	Ineffective	Total effective rate
Observation group	40	25 (62.50)	11 (27.50)	4 (10.00)	36 (90.00)
Control group	40	16 (40.00)	10 (25.00)	14 (35.00)	26 (65.00)
Z/ χ^2			2.494		7.168
P			0.013		0.007

the group members if adverse reactions occurred, actively accompany them to participate in social activities and cultivate their hobbies.

Outcome measures

(1) The Geriatric Depression Scale (GDS-30) [6] was used to self-assess the degree of depression in elderly patients before and after intervention, with a total of 30 items, and a higher score signified a higher degree of depression. No depression: 0-10 points; mild depression: 11-20 points; moderate to severe depression: 21-30 points. (2) The self-esteem level of elderly patients before and after intervention was evaluated by the Rosenberg self-esteem scale (RSES) [7]. The scale contained 10 items, with higher score indicating higher self-esteem level. (3) The living ability of patients before and after intervention was evaluated by the Barthel index of ADL. There were 14 items in the scale. Higher score suggested stronger living ability (better: 61-100 points; moderate: 41-60 points; poor: 0-40 points). (4) The MOS item short from health survey (SF-36) was used to evaluate the quality of life of elderly patients before and after intervention, including life function, social function, physical function, emotional function, physical pain, vitality, mental health, and general health. The scale had a total of 36 items, and higher score was associated with better quality of life. (5) Attributional Style Questionnaire (ASQ) [8] was used to assess the attribution mode of patients, including positive and negative events. There were 12 scenarios in the scale, and a higher score indicated the patient was more inclined to the event. (6) Clinical efficacy: significantly effective: nervous system function was significantly recovered, with a certain self-care ability, angina pectoris attack was markedly reduced; effective: nervous system function was recovered, verbal communication could be performed, angina pectoris attack was reduced; ineffective: symp-

toms were not greatly improved or even aggravated.

Statistical methods

The data obtained in this study were analyzed by SPSS 22.0 statistical software. Enumeration data were represented as (n, %), and analyzed by χ^2 test, and rank-sum test was used to analyze the clinical efficacy. Measurement data were represented as ($\bar{x} \pm s$), independent samples t-test was used for comparisons between groups, and LSD-test was used for comparisons at different time points within groups. P < 0.05 suggested a statistically significant difference.

Results

Comparison of clinical efficacy after intervention between the two groups

In the control group, the number of cases of significantly effective, effective, and ineffective were 25, 11, 4, respectively, with an overall effective rate of 65%; while in the observation group they were 16, 10, 14, respectively, with an overall effective rate of 90%, notably higher than the observation group (90.00% vs. 65.00%, P = 0.007) (**Table 2**).

Comparison of GDS-30 score, RSES score and Barthel index before and after intervention between the two groups

No statistically significant differences in GDS-30 score, RSES score, and Barthel index before intervention were noted between the two groups (P > 0.05). After intervention, GDS-30 score decreased appreciably, but RSES score and Barthel index increased appreciably in both groups (P < 0.05). After intervention, the observation group had a markedly lower GDS-30 score than the control group (P < 0.05). After intervention, the observation group showed appreciably higher RSES scores and

Table 3. Comparison of GDS-30 score, RSES score and Barthel index between the two groups

Index	Group	n	Pre-intervention	Post-intervention	t	P
GDS-30 score	Observation group	40	16.62±4.18	9.75±1.98	9.394	< 0.001
	Control group	40	16.34±3.88	12.32±2.87		
	T		0.311	4.662		
	P		0.757	< 0.001		
RSES score	Observation group	40	28.77±4.72	32.86±4.99	3.766	< 0.001
	Control group	40	28.31±4.24	30.52±4.87		
	T		0.459	2.123		
	P		0.648	0.037		
Barthel index	Observation group	40	43.77±7.69	76.87±9.35	17.292	< 0.001
	Control group	40	44.29±8.24	58.51±8.79		
	T		0.292	9.048		
	P		0.771	< 0.001		

Barthel indices compared to the control group (P < 0.05, **Table 3**).

Comparison of quality of life before and after intervention between the two groups

There was no statistically significant difference in the quality of life concerning life function, social function, physical role, emotional role, physical pain, vitality, mental health, and general health before intervention between the two groups (P > 0.05). The quality of life in all dimensions in the two groups rose appreciably after intervention than before intervention (P < 0.05). After intervention, the patients in the observation had a remarkably higher level of the quality of life in all dimensions than the control group (P < 0.05) (**Table 4**).

Comparison of attribution modes before and after intervention between the two groups

No statistically significant difference was observed in the attribution modes of positive events and negative events before intervention between the two groups (P > 0.05). Positive events after intervention were more frequently reported compared with those before intervention, and negative events after intervention were less frequently reported compared with those before intervention (P < 0.05). After intervention, there were much more positive events in the observation group as compared to the control group, whereas there were much more negative events in the control group as compared to the observation group (P < 0.05) (**Table 5**).

Discussion

In recent years, with the improvement of living standards, the incidence of ACI in the elderly is increasing. Although certain progress has been made in current treatment, ACI still remains a cause of high disability rate and mortality [9]. Depression is a common sequela after ACI patients are cured, which has a negative impact on the prognosis of elderly patients. It may reduce the mental function, increase the treatment burden of patients and the risk of Alzheimer's disease in the elderly [10]. Therefore, it is of great significance to carry out psychological intervention for patients after surgery.

The hopeless self-esteem theory proposes that interaction among attribution mode, self-esteem level and life events leads to depression in patients. Once patients experience negative events, a poor attribution mode enables them to believe that negative events are internal, stable, and comprehensive, resulting in false perceptions. Patients with low self-esteem level are prone to hopelessness, loss of confidence, leading to the occurrence of depression, whereas patients with high self-esteem level are not as likely to have hopelessness for negative events, alleviating the occurrence of depression [11]. Attribution training in the process of nursing may enable patients to recognize their poor attribution mode and then transform it into a positive attribution mode through learning [12]. The investigation results of attribution mode showed that the observation group significantly tended to have positive

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Table 4. Comparison of SF-36 quality of life between two groups

Index	Group	n	Pre-intervention	Post-intervention	t	P
Life function	Observation group	40	48.26±6.19	55.53±7.06	4.897	< 0.001
	Control group	40	48.47±6.27	51.92±6.64	2.389	0.019
	t		0.151	2.356		
	P		0.881	0.021		
Social function	Observation group	40	60.31±8.72	69.53±9.14	4.616	< 0.001
	Control group	40	59.49±8.24	64.21±9.62	2.357	0.021
	t		0.432	2.536		
	P		0.667	0.013		
Physiological functions	Observation group	40	40.29±5.69	46.44±6.07	4.675	< 0.001
	Control group	40	39.45±5.24	43.17±5.65	3.053	0.003
	t		0.687	2.494		
	P		0.494	0.015		
Emotional function	Observation group	40	42.88±5.24	50.17±6.68	5.431	< 0.001
	Control group	40	43.26±5.46	46.44±6.16	2.443	0.017
	t		0.318	2.596		
	P		0.752	0.011		
Physical pain	Observation group	40	50.85±6.25	59.18±7.59	5.358	< 0.001
	Control group	40	50.24±6.44	54.52±7.22	2.798	0.006
	t		0.430	2.813		
	P		0.668	0.006		
Vitality	Observation group	40	51.91±6.27	60.15±7.83	5.195	< 0.001
	Control group	40	51.29±6.52	55.53±7.33	2.734	0.008
	t		0.433	2.724		
	P		0.666	0.008		
Mental health	Observation group	40	54.22±6.62	64.24±8.81	5.751	< 0.001
	Control group	40	53.79±6.95	58.48±7.91	2.817	0.006
	t		0.283	3.077		
	P		0.778	0.003		
Overall health	Observation group	40	53.14±7.63	61.15±8.86	4.333	< 0.001
	Control group	40	52.73±7.23	57.14±7.93	2.599	0.011
	t		0.247	2.133		
	P		0.806	0.036		

Table 5. Comparison of attribution modes between two groups

Index	Group	n	Pre-intervention	Post-intervention	t	P
Positive events	Observation group	40	3.61±1.15	5.66±1.35	7.311	< 0.001
	Control group	40	3.65±1.16	4.32±1.28	2.453	0.016
	t		0.155	4.556		
	P		0.877	< 0.001		
Negative events	Observation group	40	4.25±1.31	2.35±0.68	8.142	< 0.001
	Control group	40	4.22±1.25	3.55±1.14	2.505	0.014
	t		0.105	5.718		
	P		0.917	< 0.001		

events, and the control group significantly tended to have negative events, suggesting that

after attribution training, the attribution mode of patients had changed from an adverse attri-

bution mode to a positive attribution mode. The results after self-esteem training showed that the self-esteem level in the observation group was found to be a markedly higher than that in the control group, suggesting that after self-esteem training, the self-esteem level of the patients could be improved and the patients could regain self-confidence.

Multi-dimensional intensive nursing is targeted at multiple angles and levels through cognitive status, psychological status, physical status, living ability, and family environment of patients [13-15]. Cognitive status improves their awareness of disease; psychological nursing alleviates their negative emotions; physical exercise improves their physical status, cardiopulmonary function, physical and speech impairments, and speeds up their recovery; just as better living ability improves their poor diet, living habits and self-care ability; and a better family environment improves the communication of their family members, creates a good family atmosphere, contributes to their mental health, and upgrades their postoperative life [16-18]. It has been reported [19, 20] that multi-dimensional nursing effectively upgrades the quality of life and improves the therapeutic effect, which is consistent with the results of this study. The self-care ability, quality of life and clinical efficacy of the observation group were superior to those of the control group after intervention, suggesting that multi-dimensional intensive nursing has the potential to boost the clinical efficacy significantly, raise the self-care ability and improve the prognosis and quality of life of patients. However, this study has the following shortcomings. It was a single center study with a small sample size and short follow-up. In addition, a blind observation method wasn't adopted in this study.

In summary, the intervention of ACI patients with depression by nursing based on hopeless self-esteem theory combined with multi-dimensional intensive nursing can increase the clinical treatment efficacy, raise their self-esteem level, change their adverse attribution modes, and improve their prognosis and life.

Disclosure of conflict of interest

None.

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