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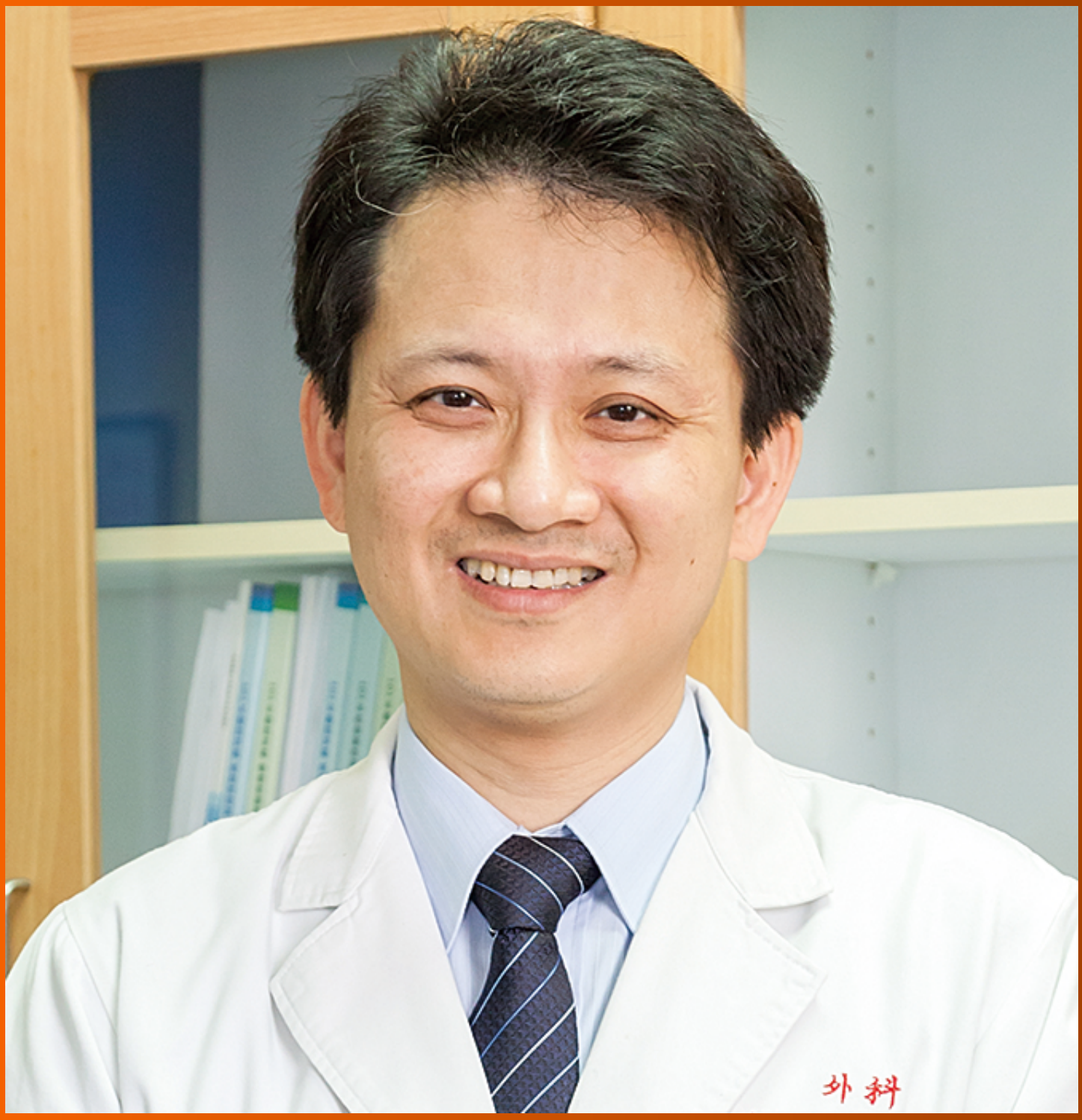

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ORIGINAL ARTICLE

Case Control Study

Impact of extended nursing model after multi-disciplinary treatment on young patient with post-stroke

Xiao-Yan Xu, Zhi-Juan Pang, Mei-Hui Li, Kun Wang, Jie Song, Yue Cao, Mao Fang

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Abstract

BACKGROUND

Stroke has become one of the most serious life-threatening diseases due to its high morbidity, disability, recurrence and mortality rates.

AIM

To explore the intervention effect of multi-disciplinary treatment (MDT) extended nursing model on negative emotions and quality of life of young patients with post-stroke.

METHODS

A total of 60 young stroke patients who were hospitalized in the neurology department of our hospital from January 2020 to December 2021 were selected and randomly divided into a control group and an experimental group, with 30 patients in each group. The control group used the conventional care model and the experimental group used the MDT extended nursing model. After the in-hospital and 3-mo post-discharge interventions, the differences in negative emotions and quality of life scores between the two groups were evaluated and analyzed at the time of admission, at the time of discharge and after discharge, respectively.

RESULTS

There are no statistically significant differences in the negative emotions scores between the two groups at admission, while there are statistically significant differences in the negative emotions scores within each group at admission and discharge, at discharge and post-discharge, and at discharge and post-discharge. In addition, the negative emotions scores were all statistically significant at

discharge and after discharge when compared between the two groups. There was no statistically significant difference in quality of life scores at the time of admission between the two groups, and the difference between quality of life scores at the time of admission and discharge, at the time of discharge and post-discharge, and at the time of admission and post-discharge for each group of patients was statistically significant.

CONCLUSION
The MDT extended nursing mode can improve the negative emotion of patients and improve their quality of life. Therefore, it can be applied in future clinical practice and is worthy of promotion.

Key Words: Multi-disciplinary treatment extended nursing model; Young people with post-stroke; Negative emotions; Quality of life

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Core Tip: To explore the intervention effect of multi-disciplinary treatment (MDT) extended nursing model on negative emotions and quality of life of young patients with post-stroke. The control group used the conventional care model and the experimental group used the MDT extended nursing model. After the in-hospital and 3-mo post-discharge interventions, the differences in negative emotions and quality of life scores between the two groups were evaluated and analyzed at the time of admission. The MDT extended nursing mode can improve the negative emotion of patients and improve their quality of life. It can be applied in clinical practice and is worthy of promotion.

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INTRODUCTION

Stroke has become one of the most serious life-threatening diseases due to its high morbidity, disability, recurrence and mortality rates[1]. It has been reported that there are about 2.5 million new cases of stroke in China every year, and the mortality rate can be up to 30%[2,3]. Nearly 70% of surviving patients have varying degrees of cognitive and physical impairment, which causes great suffering to the patients and places a heavy burden on their family[4]. As an important part of clinical treatment, nursing has a significant impact on the psychological and prognostic outcomes of stroke patients. Previous studies have demonstrated that different nursing models have different clinical effects on the improvement of negative mood and physical function recovery of stroke patients. For example, by applying nostalgia therapy to care for stroke patients, Mei *et al*[5] revealed that it not only relieves anxiety and depression of patients but also had a positive effect on the their careers, which could accelerate the recovery of patients. Brighton *et al*[6] applied supportive care coupled with psychological interventions to the care of patients with chronic diseases and found that this nursing model significantly reduced the dysphoria of patients and improved their life quality. Although the above-mentioned nursing model have had a positive effect on dysphoria and life quality of stroke patients, most of those studies were conducted in-hospital. The psychological changes and functional recovery of patients after discharge from hospital were not available until now. Due to lack of psychological intervention and rehabilitation guidance from professional medical personnel in home environment, patients are prone to training burnout and increased dysphoria[7,8]. Therefore, developing a more coordinated and continuous nursing model has become an urgent issue in clinical nursing practice. As one of the typical representatives of nursing models with greater coordination and continuity, the extended care model has been applied to the nursing work of various diseases and has achieved great effects[9,10]. However, this model also has certain drawbacks, such as the fact that the intervention personnel are mostly nursing staff and lack professional guidance on psychological intervention and physical functional rehabilitation[11,12]. To make up above deficiencies, the multi-disciplinary treatment (MDT) model was combined with the extended nursing mode to investigate the optimized care model for young stroke patients in this study.

MATERIALS AND METHODS

Basic characteristic of the samples

Sixty stroke patients who were hospitalized in the Department of Neurology of our hospital from January 2020 to December 2021 were selected and randomly divided into control group and experimental group, with 30 patients in each group. The control group were treated with conventional nursing while the experimental group were treated with MDT extended nursing mode. There are 16 males and 14 females in the control group aged 19-35 years (average age 28.27 ± 2.53 years). In the experimental group, there were 15 males and 15 females aged 20-38 years (average age 27.20 ± 2.23 years). There was no statistically significant difference in the basic characteristics of the patients in the two groups (Table 1). The inclusion criteria of stroke patients are as follows: (1) Patients with ischemic stroke who met the diagnostic criteria for ischemic stroke adopted by the 4th National Conference on Cerebrovascular Diseases of China and confirmed by cranial computerized tomography or magnetic resonance imaging; (2) Young patients aged 18-40 years; and (3) No history of psychiatry disorders. The exclusion criteria are as follows: (1) Patients > 40 aged years or < 18 aged years; and (2) Patients with severe underlying medical conditions or those who are unable to cooperate with the study due to their conditions. All patients volunteered to participate in the experiment and signed an informed consent form before the start of the trial. The study was approved by the Ethics Committee of our hospital.

The nursing mode of control group: Patients in the control group were given a routine nursing care, including safety briefing and disease briefing upon admission, dietary care, rehabilitation training instruction, complication care and preparation of medication and infusion for patients as prescribed by the doctor.

MDT extended nursing team organization: The MDT extended nursing team consisted of 21 members, including 2 associate chief neurologists, 1 rehabilitation physician, 1 dietician, 1 network engineer, 1 chief nurse, 2 associate chief nurses, 3 charge nurses and 10 nurse practitioners, all of whom are front-line staff. The team leader was the head nurse and 2 charge nurses were appointed as statisticians to be responsible for the collation and analysis of the trial data (Table 2).

Training of the MDT extended nursing team member: The lead nurse organized a unified lecture training for the team members, which mainly included: the significance of the MDT extended nursing, the objective, the progression of current research, the implementation process, the evaluation scale categories and their significance. The total training process is 3 h and was divided into 3 lectures. After the lecture, a training assessment is organized for the members, and the trial can only start after all members have passed the assessment.

Intervention strategies: After plenary discussion, the intervention content was developed by the group members through literature retrieval and books review. All members in the MDT extended nursing team were required to strictly follow the predetermined intervention content to ensure the trial was successfully completed. Before the intervention starting, a preliminary experiment was conducted in 10 patients who met the inclusion criteria, and any problems that arose during the implementation of the intervention were recorded in detail and modified after group discussion to arrive the final intervention content (Table 3).

Implementation of the MDT extended nursing: The clinical interventions were carried out by each group member in strict accordance with the intervention content form developed above. Patients in each group were assisted by the bedside nurses to fill in the questionnaires on admission and discharge respectively and the questionnaires were collected by the bedside nurses. The 2 charge nurses were responsible for the statistical scoring, database entry and statistical analysis of the collected forms, and 2 charge nurses were each responsible for the statistical and analytical calculations until the data of the 2 nurses were in complete agreement. The lead nurse is responsible for the arrangement, liaison and supervision of the whole experiment.

Quality control

To ensure the reliability of our results, the following quality control strategies were applied: (1) Nursing staff and patient allocation: The bedside nurses of the two groups of patients were only responsible for their own patients throughout the trial, and no staff transfer was made between the two groups. Patients in the two groups were arranged to different wards to prevent the accuracy of the final trial results from being affected by inter-patient communication; (2) In order to ensure homogeneity of evaluation, the group staff were given uniform training and assessment before the start of the trial to ensure the accuracy of the daily operation and assessment methods; and (3) The whole test was supervised and executed by the lead nurse, and the data collected was kept by a dedicated person. Data entry and statistical analysis were carried out by two people respectively to ensure that the data collected and the results calculated were accurate.

Table 1 The general information comparison between the two groups of patients

		Intervention group (*n* = 30)	Control group (*n* = 30)	*T* value	*P* value
Sex (*n*)	Men	15	16	0.067	0.796
	Women	15	14		
Age (yr)		27.20 ± 2.23	28.27 ± 2.53	-1.730	0.089
Occupation	Student	10	11	0.294	0.961
	Worker	7	6		
	Civil servant	5	4		
	Self-employed	8	9		
Education degree (*n*)	Primary school	7	6	0.269	0.874
	Middle school	8	7		
	College degree or above	15	13		
Expense category (*n*)	Health insurance	22	24	0.373	0.542
	Self-pay	8	6		
Inpatient days (d)		17.00 ± 2.29	16.33 ± 2.45	1.088	0.281

Table 2 Composition of the multi-disciplinary treatment extended nursing team and their responsibilities

Group members (*n*)	Group members responsibilities
Associate chief physician (2)	Responsible for the diagnosis and treatment of patients; the administration of medication and the follow-up of discharged
Rehabilitation physician (1)	Guidance of rehabilitation training for patients during convalescence
Dietician (1)	Evaluation of the nutritional status of patients and formulation personalized nutritional meals
Network engineer (1)	network maintenance
Chief nurse (1)	Experiment organization, personnel allocation, liaison and experiment supervision
Associate chief nurse (2)	Assisted in the implementation of the trial and the follow-up survey of discharged patients
Charge nurse (3)	Data collection and analysis
Nurse practitioners (10)	Clinical trial implementation, patient inpatient and discharge care, guide patients to fill in the scale

Evaluation indicators

In this study, two indicators, including negative emotions and quality of life were used to assess the intervention effect of MDT extended nursing mode. The negative emotions were evaluated by a series widely adopted anxiety and depression scale, including Self-rating Anxiety Scale (SAS), Self-rating Depression Scale (SDS), Hamilton Depression (HAMD) Scale, and Hamilton Anxiety (HAMA) Scale. SAS was developed by Zung[13] to assess the subjective feelings of anxiety of patients and their changes during treatment in 1971. It is consisting of 20 items, each with a score of 1-4. The minimum score is 20 and the maximum score is 80, with scores below 50 being normal, 50-59 being mild anxiety, 60-69 being moderate anxiety, and 70 or more being severe anxiety. Yue *et al*[14] reported that the SDS, a common scale for evaluating the depression of patients, was developed by Zung in 1965 and also contains 20 items, each with a score of 1-4. It is also divided into 4 grades, with scores below 50 being normal, 50-59 being mild depression, 60-69 being moderate depression, and 70 or more being major depression. HAMD scale was developed by Hamilton in 1960 and is a commonly used clinical scale to assess the depressive state of patients[15]. This scale has 7 dimensions and 24 entries, which evaluate somatic symptoms, loss of weight, retardation (slowness of thought and speech, impaired ability to concentrate, decreased motor activity), insomnia (early, middle and late), and depressed mood (sadness, hopeless, helpless, and worthless). Most items are scored 0-4 and a few are scored 0-2. A higher total score for the patient represents a more severe depression. The reliability coefficient of each individual item of the scale is 0.78-0.98 and the validity coefficient is 0.37. Lu *et al*[16] has reported that HAMA was developed by Hamilton in 1959 and is a commonly used scale to assess the severity of anxiety symptoms of adult patients. It has 14 items and can assess both somatic and psychic anxiety. Each item is assigned a score of 0-4 from "asymptomatic" to "severe," with a full score of 56, with higher scores indicating higher anxiety levels. The reliability coefficient of each item in this scale was 0.83-1.00, and the validity

Table 3 The details of the intervention strategy

Items		Content
Intervention timeline		Immediate admission to week 8 of discharge (1 time per week after discharge)
Intervention content		Psychological care to reduce psychological stress of patients and assist psychologists in psychological intervention
		Assisting the rehabilitation physician in guiding the rehabilitation training of patient
		Investigate the dietary habits of patients and assist dietitians in adjusting nutritional status of patients
		Assisting the bedside physician in daily care
Operators		MDT extended nursing team
Specific implementation steps	Psychological care to reduce psychological stress of patients and assist psychologists in psychological intervention	The bedside nurses assist the patients to fill in the anxiety self-assessment scale and the hospital anxiety and depression scale, the scores of which are analyzed by the psychiatrist and appropriate interventions are made. Talking and communicating with patients once a week through internet technology to understand their inner changes and provide timely feedback to the psychologist
	Assisting the rehabilitation physician in guiding the rehabilitation training of patients	The rehabilitation physician formulates the individualized rehabilitation training plan; the neurologist assists in optimizing the rehabilitation strategy; the rehabilitation physician implements the rehabilitation training plan; the bedside nurse assists the rehabilitation physician. After discharge, the completion of rehabilitation training of patients was investigated once a week through Internet technology such as WeChat video, and the degree of training was monitored
	Investigate the dietary habits of patients and assist dietitians in adjusting nutritional status of patients	The bedside nurse asks patients about their daily eating habits and assists the dietitian in formulating a nutrition improvement plan; follows up with the patient once a week after discharge and gives feedback to the dietitian, and guides the daily diet of patients according to the nutrition supplement plan adjusted by the dietitian
	Assisting the bedside physician in daily care	Implement orders of physician, record the disease progression of patients on the basis of basic care, and provide timely feedback to the bedside physician

MDT: Multi-disciplinary treatment.

coefficient was 0.36. The quality of life was evaluated by Barthel Index and the Short-Form (SF-36) Health Survey. Barthel Index was developed by Barthel in 1965, it is a commonly used index to measure the individual's ability to perform basic activities of daily life[17]. There is a total of 10 dimensions, with a score of 100, the higher the score, the higher the quality of life of the patient. The SF-36 Health Survey scale was first constructed to survey health status in the Medical Outcome Study, which was conducted by the RAND Corporation. In this study, we used a Chinese version of the scale translated by the Department of Social Medicine, School of Medicine, Zhejiang University in 1991, which was mentioned in the study of Kin *et al*[18]. The scale has 36 items grouped in 8 dimensions and the higher the total score represents the better the quality of life of patients. It has been showed that the 8 dimensions Cronbach's alpha of the scale are higher than 0.70, which has good reliability and validity.

Observation indicators

Patients in both groups were instructed by the bedside nurses and home care nurses to complete the above-mentioned scale at admission, at discharge and at the 3rd month of the discharge intervention to assess the patients' negative emotions and changes in quality of life respectively.

Statistical analysis

All the data collected in current study were entered into SPSS (version, 22.1) statistical software and analyzed. mean ± SD was used for description of quantitate data and independent samples *t*-test was used for comparison between groups. All statistical *P* values were bilateral, and $P < 0.05$ was considered statistically significant.

RESULTS

The general information comparison between the two groups of patients

The differences in general information between the two groups were not statistically significant and were comparable (Table 1).

Comparison of anxiety and depressio6 self-rating scale scores between the two groups of patients

Patients in the control group had SAS scores of 65.43 ± 2.08 on admission, 55.17 ± 3.00 on discharge and 71.13 ± 2.91 after discharge. The SDS scores of patients in control group were 68.13 ± 2.50 on admission,

57.27 ± 2.75 on discharge and 73.47 ± 2.97 after discharge. Patients in the intervention group had SAS scores of 65.57 ± 3.97 on admission, 21.13 ± 2.52 on discharge and 17.33 ± 3.06 after discharge. The SDS scores of patients in the intervention group were 69.27 ± 2.65 at admission, 25.13 ± 2.65 at discharge and 16.53 ± 2.27 after discharge. The differences in SAS scores and SDS scores on admission were not statistically significant between the two groups. The differences in SAS scores and SDS scores on admission and discharge, on discharge and after discharge, and on admission and after discharge were statistically significant within each group of patients, and the differences in SAS scores and SDS scores on discharge and after discharge were statistically significant between the two groups (Table 4).

Comparison of HAMD and HAMA scores between the two groups of patients

Patients in the control group had a HAMD score of 34.17 ± 1.49 on admission, 25.23 ± 1.74 on discharge and 31.10 ± 1.85 after discharge. The HAMA score of patients in control group were 26.27 ± 2.23 on admission, 21.53 ± 1.96 on discharge and 31.83 ± 2.00 after discharge. Patients in the intervention group had a HAMD score of 33.93 ± 1.23 on admission, 17.33 ± 2.54 on discharge and 11.13±1.59 after discharge. The HAMA score of patients in the intervention group were 25.20 ± 2.83 on admission, 15.23 ± 1.76 on discharge and 10.57 ± 2.39 after discharge. The differences in HAMD scores and HAMA scores at admission were not statistically significant between the two group. The differences in HAMD scores and HAMA scores at admission and discharge, at discharge and after discharge, and at admission and after discharge were statistically significant within each group, and the differences in HAMD scores and HAMA scores at discharge and after discharge were statistically significant between the two groups (Table 5).

Comparison of Barthel index between the two groups of patients

The Barthel Index for patients in the control group was 40.17 ± 2.23 at admission, 53.20 ± 1.86 at discharge and 41.23 ± 2.01 after discharge. The Barthel Index was 39.70 ± 1.60 at admission, 76.13 ± 2.00 at discharge and 83.77 ± 2.43 after discharge for patients in the intervention group. There was no statistically significant difference in Barthel index between the two groups of patients on admission. The difference between Barthel index on admission and discharge, on discharge and after discharge, and on admission and after discharge within each group of patients was statistically significant, and the difference between the two groups of patients was statistically significant when comparing Barthel index at discharge and post-discharge (Table 6).

Comparison of SF-36 scores for each dimension between the two groups of patients

There were no statistically significant differences in the SF-36 scores for each dimension between the two groups of patients at admission. The differences of SF-36 scores on each dimension within each group of patients on admission and on discharge, on discharge and post-discharge, and on admission and post-discharge were all statistically significant, and the differences between the two groups of patients on discharge and post-discharge were statistically significant (Table 7).

DISCUSSION

Young stroke patients have more severe negative emotions and poor quality of life

In this study, by comparing the negative emotions and quality of life scores on admission of both groups, we found that patients in both groups had more severe anxiety and depression and a lower quality of life, which is in line with the results of previous studies. For example, Schöttke *et al*[19] found that the prevalence of stroke patients suffering from one or more depressive symptoms within 5 years could be up to 39%-52%. Chen *et al*[20] conducted a retrospective study of stroke patients after treatment found that 24%-29% of patients had varying degrees of anxiety and depressive symptoms. Charidimou *et al*[21] performed a meta-analysis of the literatures on depression in stroke patients showed that the prevalence of depression in stroke patients was about 39%. In addition, studies focused on the reduction of quality of life in stroke patients have also been reported in recent years. A meta-analysis of nine papers on quality of life in stroke patients by Koivunen *et al*[22] showed a general reduction in quality of life in stroke patients. The underlying causes of this events are mostly related to the fact that the internal demands of stroke patients are not effectively met after discharge from the hospital and their repressed psychology is not effectively relieved. In addition, patients do not access to rehabilitation exercise guidance from health care professionals at home, making the symptoms of anxiety and depression progressively worse, slowing recovery from illness and drastically reducing the quality of life.

MDT extended nursing mode can improve the negative emotions of patients

According to previous studies that the psychological needs of stroke patients vary from inpatient treatment to post-discharge rehabilitation. However, due to the difference between the home environment and the hospital environment, although they are in a familiar living environment, their

Table 4 Comparison of anxiety and depression self-rating scale scores between the two groups of patients

Groups	SAS score			SDS score		
	At admission	At discharge	After discharge	At admission	At discharge	After discharge
Control group	65.43 ± 2.08	55.17 ± 3.00[a]	71.13 ± 2.91[c]	68.13 ± 2.50	57.27 ± 2.75[a]	73.47 ± 2.97[c]
Intervention group	65.57 ± 3.97	21.13 ± 2.52[a,c]	17.33 ± 3.06[c]	69.27 ± 2.65	25.13 ± 2.65[a,c]	16.53 ± 2.27[c]
T value	-0.163	47.660	69.849	-1.703	46.065	83.452
P value	0.871	< 0.000	< 0.000	0.094	< 0.000	< 0.000

[a]*P* value < 0.05, compared with at admission.
[c]*P* value < 0.05, compared with at discharge.
SAS: Self-rating Anxiety Scale; SDS: Self-rating Depression Scale.

Table 5 Comparison of Hamilton Depression and Hamilton Anxiety scores between the two groups of patients

Groups	HAMD score			HAMA score		
	At admission	At discharge	After discharge	At admission	At discharge	After discharge
Control group	34.17 ± 1.49	25.23 ± 1.74[a]	31.10 ± 1.85[c]	26.27 ± 2.23	21.53 ± 1.96[a]	31.83 ± 2.00[c]
Intervention group	33.93 ± 1.23	17.33 ± 2.54[a,c]	11.13 ± 1.59[a,c]	25.20 ± 2.83	15.23 ± 1.76[a,c]	10.57 ± 2.39[a,c]
T value	0.662	14.076	44.884	1.621	13.112	37.385
P value	0.510	0.000	0.000	0.110	0.000	0.000

[a]*P* value < 0.05, compared with at admission.
[c]*P* value < 0.05, compared with at discharge.
HAMD: Hamilton Depression; HAMA: Hamilton Anxiety.

Table 6 Comparison of Barthel Index between the two groups of patients

Group	At admission	At discharge	After discharge
Control group	40.17 ± 2.23	53.20 ± 1.86[a]	41.23 ± 2.01[c]
Intervention group	39.70 ± 1.60	76.13 ± 2.00[a,c]	83.77 ± 2.43[a,c]
T statistics	0.931	-45.997	-73.831
P value	0.356	0.000	0.000

[a]*P* value < 0.05, compared with at admission.
[c]*P* value < 0.05, compared with at discharge.

family members are usually lack of professional psychological training thus are less able to recognize their psychological changes and intervene with patients timely. The inner needs of patients cannot be met reasonably, and the anxiety, depression symptoms cannot get relieve. The patients have been immersed in the role of the disease which resulting in the negative emotions aggravated gradually[23]. In this study, the negative emotions of patients in both groups improved at the time of discharge compared with those at the time of admission, which may be related to the gradual increase of nursing staff in awareness of psychological interventions for patients. The degree of improvement in the negative emotions of patients in the experimental group was significantly better than that of the control group. This is probably due to the fact that the care model applied to the experimental group was multidisciplinary, with more targeted and specialized interventions for the negative emotions of patients, with each discipline providing specialist treatment and care for the patient. Among which each discipline works together with each other rather than independently. The increased attention given to the patients led to an effective reduction in their sense of inner isolation. When comparing the post-discharge anxiety and depression scores of the two groups, the results showed that the negative mood of the patients in the control group increased compared to the time of discharge, while the negative mood of the patients in the intervention group was further alleviated. The reason for this may be related to the continuity of care model used for patients in the experiment group, which compensates for the

Table 7 Comparison of Short-Form 36 scores for each dimension between the two groups of patients

Dimension	Control group			Intervention group		
	At admission	At discharge	After discharge	At admission	At discharge	After discharge
Physical functioning	44.17 ± 1.49	52.23 ± 1.72[a]	41.10 ± 2.06[a,c]	43.20 ± 2.06	67.13 ± 1.25[a,e]	78.83 ± 2.07[a,c,e]
Physical problems	43.93 ± 1.28	49.17 ± 1.72[a]	40.97 ± 1.71[a,c]	42.70 ± 2.52	71.03 ± 1.83[a,e]	88.97 ± 1.71[a,c,e]
Bodily pain	28.20 ± 2.31	41.87 ± 2.03[a]	23.60 ± 1.45[a,c]	29.00 ± 2.13	61.60 ± 2.06[a,e]	75.27 ± 1.95[a,c,e]
Generalhealth	24.37 ± 3.09	44.30 ± 2.48[a]	51.53 ± 1.28[a,c]	23.93 ± 3.13	74.47 ± 2.00[a,e]	80.07 ± 1.64[a,c,e]
Social vitality	33.17 ± 3.51	46.80 ± 1.97[a]	22.23 ± 1.45[a,c]	34.20 ± 2.78	64.70 ± 1.56[a,e]	74.43 ± 1.85[a,c,e]
Social functioning	34.67 ± 2.14	48.63 ± 2.03[a]	27.10 ± 2.28[a,c]	33.53 ± 2.74	72.13 ± 2.42[a,e]	86.47 ± 1.98[a,c,e]
Emotional problems	40.53 ± 2.15	50.17 ± 1.80[a]	26.93 ± 2.75[a,c]	41.80 ± 2.41	65.27 ± 1.31[a,e]	76.83 ± 2.38[a,c,e]
Mental health	35.27 ± 2.94	49.63 ± 2.58[a]	30.83 ± 1.62[a,c]	36.07 ± 2.38	69.37 ± 2.63[a,e]	77.37 ± 1.40[a,c,e]

[a]*P* value < 0.05, compared with at admission.
[c]*P* value < 0.05, compared with at discharge.
[e]*P* value < 0.05, compared with the control group.

lack of professional and effective psychological interventions available to patients at home as described above.

MDT extended nursing mode can improve the life quality of patients

It has been demonstrated that during home rehabilitation, the lack of training guidance from professional health care personnel makes the recovery of patients slower than expected and their motivation to rehabilitation exercise decreases, which in turn reduces their quality of daily life. In the two groups of patients included in this study, the life quality of the patients in the control group has been declining due to the absence of out-of-hospital rehabilitation training guidance and care, while the quality of life scores of the patients in the intervention group have been rising and differ significantly from those of the control group. In addition, the use of internet technology in the experiment group made it more convenient for patients to receive professional rehabilitation guidance and for the health care staff to provide rehabilitation guidance and care more quickly than in the conventional care mode.

CONCLUSION

In conclusion, the MDT extended nursing mode can improve the negative emotions and life quality of young stroke patients, so it can be used in future clinical practice and is worth of promoting. However, this study also has some limitations, the sample size of this study is small and may have been underpredictive. Therefore, further in-depth studies are still needed in the future.

ARTICLE HIGHLIGHTS

Research background

Stroke has become one of the most serious life-threatening diseases due to its high morbidity, disability, recurrence and mortality rates. As an important part of clinical treatment, nursing has a significant impact on the psychological and prognostic outcomes of stroke patients.

Research motivation

Previous studies have demonstrated that different nursing models have different clinical effects on the improvement of negative mood and physical function recovery of stroke patients. Although the nursing model have had a positive effect on dysphoria and life quality of stroke patients, most of those studies were conducted in-hospital. The psychological changes and functional recovery of patients after discharge from hospital were not available until now.

Research objectives

To make up deficiencies, the multi-disciplinary treatment (MDT) model was combined with the extended nursing mode to investigate the optimized care model for young stroke patients in this study.

Research methods

Sixty stroke patients who were hospitalized in the Department of Neurology of our hospital from January 2020 to December 2021 were selected and randomly divided into control group and experimental group, with 30 patients in each group. The control group were treated with conventional nursing while the experimental group were treated with MDT extended nursing mode. Self-rating Anxiety Scale, Self-rating Depression Scale, Hamilton Depression Scale, and Hamilton Anxiety Scale were used to evaluate the negative emotions of patients. The quality of life was evaluated by Barthel Index and the Short-Form Health Survey.

Research results

There are no statistically significant differences in the negative emotions scores between the two groups at admission, while there are statistically significant differences in the negative emotions scores within each group at admission and discharge, at discharge and post-discharge, and at discharge and post-discharge. In addition, the negative emotions scores were all statistically significant at discharge and after discharge when compared between the two groups. There was no statistically significant difference in quality of life scores at the time of admission between the two groups, and the difference between quality of life scores at the time of admission and discharge, at the time of discharge and post-discharge, and at the time of admission and post-discharge for each group of patients was statistically significant.

Research conclusions

In the two groups of patients included in this study, the life quality of the patients in the control group has been declining due to the absence of out-of-hospital rehabilitation training guidance and care, while the quality of life scores of the patients in the intervention group have been rising and differ significantly from those of the control group.

Research perspectives

The MDT extended nursing mode can improve the negative emotion of patients and improve their quality of life. Therefore, it can be applied in future clinical practice and is worthy of promotion.

FOOTNOTES

Author contributions: Fang M, Xu XY, Wang K, and Pang ZJ contributed to the conceptualization and study design; Fang M, Song J, and Xu XY contributed to the administrative support; Fang M, Xu XY, Wang K, Pang ZJ, and Song J contributed to resources; Xu XY, Pang ZJ, Li MH, Wang K, Song J, and Cao Y contributed to the data Collection; Xu XY, Pang ZJ, Li MH, Wang K, Song J, Cao Y, and Fang M contributed to the Data analysis; all the authors contributed to the manuscript writing, reviewing, revising, and editing.

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