Journal of Clinical and Nursing Research, 2026, Volume 10, Issue 3
http://ojs.bbwpublisher.com/index.php/JCNR
Online ISSN: 2208-3693
Print ISSN: 2208-3685

Intervention Study of Solution-Focused Approach on Negative Emotions and Self-Management in Patients with First-Episode Acute Ischemic Stroke

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Abstract: *Objective*: To evaluate the intervention effect of the Solution-Focused Approach (SFA) on negative emotions, emotional self-management ability, and self-efficacy in patients with first-episode acute ischemic stroke (AIS). *Methods*: A quasi-experimental study design was adopted. A total of 64 first-episode AIS patients with negative emotions were randomly divided into a control group and an intervention group. The control group received routine psychological nursing, while the intervention group received structured psychological intervention based on SFA in addition to routine nursing. Before the intervention and after the last intervention, the Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), Emotional Self-Management Behavior Scale, and Stroke Self-Efficacy Questionnaire (SSEQ) were used for effect evaluation. *Results*: After the intervention, the decrease in anxiety and depression scores, as well as the increase in emotional self-management behavior and self-efficacy scores in the intervention group, were significantly better than those in the control group ($p < 0.05$). *Conclusion*: SFA can effectively alleviate anxiety and depression symptoms in patients with first-episode AIS, improve their emotional self-management ability and self-efficacy, and is a clinically valuable empowering psychological intervention method.

Keywords: Ischemic stroke; Negative emotions; Solution-focused approach; Psychological nursing; Self-efficacy

Online publication: Apr 22, 2026

1. Introduction

The incidence of negative emotions such as anxiety and depression after stroke is as high as 30–50%, which are independent risk factors affecting patients' rehabilitation process, quality of life, and long-term prognosis [1,2]. Patients with first-episode stroke are more prone to intense psychological stress reactions due to the sudden blow of the disease, uncertainty about prognosis, and sudden changes in family roles [3]. Clinical routine psychological nursing mainly focuses on supportive health education and counseling, which is insufficient in mobilizing patients'

own problem-solving abilities and internal potential, resulting in limited long-term effects.

The Solution-Focused Approach (SFA), as a short-term intervention method based on positive psychology, its core is to guide individuals to focus on their own resources and strengths, and strive to construct solutions rather than repeatedly analyzing the problem itself [4]. Studies have shown that SFA has achieved good results in emotional management and self-efficacy improvement of patients with chronic diseases [5–7]. However, its application effect in the acute phase and early recovery stage of patients with first-episode stroke remains to be verified. Based on this, this study aims to explore the intervention effect of SFA on improving negative emotions and psychosocial functions of patients with first-episode acute ischemic stroke, in order to provide a structured and empowering new psychological nursing strategy for clinical practice.

2. Objects and methods

2.1. Research objects

Using convenient sampling, first-episode AIS patients hospitalized in the Department of Neurology of a hospital in a district of Shanghai from June to December 2024 were selected.

2.1.1. Inclusion criteria

(1) Meeting the diagnostic criteria of Chinese Guidelines for the Diagnosis and Treatment of Acute Ischemic Stroke 2023 [8];
(2) First onset;
(3) Age ≥ 40 years old;
(4) Clear consciousness, no communication barriers, and SAS standard score ≥ 50 points and/or SDS standard score ≥ 53 points;
(5) Informed consent

2.1.2. Exclusion criteria

(1) Severe organ dysfunction
(2) Severe cognitive impairment
(3) History of mental illness.

2.1.3. Grouping

Patients were divided into the intervention group and the control group using a random number table method.

2.2. Intervention methods

2.2.1. Control group

Routine psychological nursing in the Department of Neurology was implemented, including admission environment introduction, disease knowledge education, supportive emotional counseling, and rehabilitation guidance.

2.2.2. Intervention group

On the basis of routine nursing, nurses trained uniformly implemented SFA intervention, totaling 4 times. The

intervention framework is as follows:

(1) Describing problems and constructing goals (2–3 days after admission): Understanding patients' views on the disease and emotional distress, and jointly setting specific and positive short-term rehabilitation goals (such as "trying to walk for 5 minutes with family members' accompaniment within this week");
(2) Exploring exceptions and resources (1 day before discharge): Guiding patients to review past experiences of successfully coping with difficulties and exploring internal strengths of individuals and families;
(3) Feedback and adjustment (1 week after discharge, by phone/WeChat): Summarizing progress, providing positive feedback, and adjusting strategies for new problems;
(4) Consolidation and evaluation (3 weeks after discharge, by phone/WeChat): Assessing the degree of goal achievement, strengthening self-management confidence, and encouraging the application of the model to future challenges. Each intervention lasted 30–60 minutes.

2.3. Research tools and evaluation indicators

Data were collected before the intervention and after the 4th intervention.

(1) General information questionnaire
Self-designed.
(2) Self-rating anxiety scale (SAS) and Self-rating depression scale (SDS) [9]
Standard scores were used to evaluate the severity of anxiety and depression, with higher scores indicating more severe symptoms.
(3) Emotional self-management behavior scale [10]
5 items, using a 5-point scoring method, with higher total scores indicating better self-management behaviors.
(4) Stroke self-efficacy questionnaire (SSEQ) [11]
13 items, with a total score of 13–130 points, and higher scores indicating stronger self-efficacy.

2.4. Statistical methods

SPSS 25.0 software was used for analysis. Measurement data were described as $\overline{x} \pm s$, and inter-group comparison was performed using independent sample *t*-test or Mann-Whitney U test; intra-group pre- and post-comparison was performed using paired *t*-test or Wilcoxon signed-rank test. Count data were described as frequency and percentage, and χ^2 test was used. A p-value < 0.05 was considered statistically significant.

3. Results

3.1. Baseline equilibrium of research objects

There were no statistically significant differences between the two groups of patients in general data, as well as anxiety, depression, self-management behavior, self-efficacy, and quality of life before the intervention ($p > 0.05$), indicating comparability, as shown in **Table 1**.

Table 1. Baseline comparison of general demographic data

Variables	Total (n = 64)	Intervention group (n = 32)	Control group (n = 32)	χ^2/t	p
Gender				0.577	0.448
Male	37 (57.81%)	17 (53.13%)	20 (62.50%)		
Female	27 (42.19%)	15 (46.88%)	12 (37.50%)		
Age (years)	57.20 ± 12.77	58.34 ± 11.91	56.06 ± 13.67	0.638	0.727
< 50	21 (32.81%)	9 (28.13%)	12 (37.50%)		
50–65	28 (43.75%)	15 (46.88%)	13 (40.63%)		
> 65	15 (23.44%)	8 (25.00%)	7 (21.88%)		
Place of residence				0.110	0.500
Urban	53 (82.81%)	26 (81.25%)	27 (84.38%)		
Rural	11 (17.19%)	6 (18.75%)	5 (15.63%)		
Educational level				1.016	0.602
Primary school and below	14 (21.87%)	6 (18.75%)	8 (25.00%)		
Junior high school/Senior high school/ Technical secondary school	36 (56.25%)	20 (62.50%)	16 (50.00%)		
College and above	14 (21.88%)	6 (18.75%)	8 (25.00%)		
Marital status				0.350	0.500
Married	61 (95.31%)	30 (93.75%)	31 (96.88%)		
Divorced/Widowed	3 (4.69%)	2 (6.25%)	1 (3.13%)		
Occupation				4.594	0.467
State organ cadres	6 (9.38%)	4 (12.50%)	2 (6.25%)		
Professional and technical personnel	12 (18.75%)	5 (15.63%)	7 (21.88%)		
Institution staff	7 (10.94%)	3 (9.38%)	4 (12.50%)		
Workers	25 (39.06%)	14 (43.75%)	11 (34.38%)		
Commercial service personnel	11 (17.19%)	6 (18.75%)	5 (15.63%)		
Unemployed	3 (4.69%)	0 (0.00%)	3 (9.38%)		
SAS	53.44 ± 5.53	53.79 ± 5.93	53.08 ± 5.18	0.480	0.633
SDS	56.14 ± 6.90	57.41 ± 6.80	54.87 ± 6.88	1.392	0.170
Self-efficacy	73.34 ± 11.50	72.75 ± 10.12	73.93 ± 12.90	-0.380	0.705
Self-management behavior	16.75 ± 3.11	16.18 ± 3.00	17.32 ± 3.20	-1.388	0.171
Emotional quality of life	17.21 ± 2.87	17.24 ± 2.73	17.19 ± 3.06	0.073	0.943

3.2. Comparison of indicators between the two groups before and after intervention

A total of 8 cases were lost during the study, and finally 29 cases in the intervention group and 27 cases in the control group completed the entire study. After the intervention, the SAS and SDS scores of both groups were significantly lower than those before the intervention ($p < 0.05$). However, the decrease in SAS and SDS in the intervention group was significantly greater than that in the control group ($p < 0.01$). The emotional self-

management behavior scores and SSEQ score of the intervention group were significantly improved after the intervention ($p < 0.05$), and the improvement range was significantly better than that of the control group ($p < 0.05$), as shown in **Table 2**.

Table 2. Comparison of anxiety and depression between the two groups before intervention

Intervention variables	Before intervention	After intervention	*t*	*p*	Difference (After-Before)	t (Difference)	p (Difference)
SAS						4.009	0.001
Intervention group	53.71 ± 5.84	48.75 ± 5.30	6.815	0.001	4.96 ± 3.92		
Control group	53.15 ± 5.26	51.81 ± 5.98	2.621	0.014	1.34 ± 2.66		
t	0.375	-2.026					
p	0.709	0.048					
SDS						3.006	0.004
Intervention group	56.85 ± 7.32	49.01 ± 7.83	6.412	0.001	7.85 ± 6.59		
Control group	55.37 ± 6.47	52.69 ± 8.72	0.806	0.034	2.69 ± 6.28		
t	0.801	-1.622					
p	0.426	0.102					
Self-management behavior						-2.394	0.020
Intervention group	16.34 ± 3.04	17.66 ± 2.35	-2.666	0.013	-1.31 ± 2.65		
Control group	17.19 ± 3.17	17.19 ± 2.77	0.000	0.999	0.00 ± 1.07		
t	-1.012	0.686					
p	0.316	0.496					
Self-efficacy						-8.230	0.001
Intervention group	72.72 ± 9.94	87.86 ± 14.39	-11.307	0.001	-15.14 ± 7.21		
Control group	74.00 ± 13.14	75.44 ± 15.93	-1.519	0.141	-1.44 ± 4.94		
t	-0.412	0.682					
p	3.053	0.003					
Quality of life						-2.422	0.019
Intervention group	17.24 ± 2.73	18.66 ± 2.87	-1.978	0.058	-1.41 ± 3.85		
Control group	17.19 ± 3.06	16.56 ± 3.46	1.509	0.143	0.63 ± 2.17		
t	0.073	0.942					
p	2.480	0.016					

4. Discussion

4.1. SFA can effectively alleviate post-stroke negative emotions

Compared with routine supportive nursing, SFA has shown better effects in reducing patients' anxiety and depression levels. The mechanism may be that SFA transforms patients' vague worries (such as "I'm finished") into specific and operable actions (such as "completing rehabilitation training today") through "constructing

goals", reshaping their sense of control over the disease. At the same time, "exploring exceptions" guides patients to focus on their past successful coping experiences rather than indulging in current problems, breaking the vicious cognitive cycle of "disease-negative emotions-functional withdrawal" [12]. The results of this study are consistent with the intervention effect of SFA in patients with other chronic diseases, confirming its effectiveness as a transdiagnostic and resource-oriented psychological intervention method [13,14].

4.2. SFA empowers patients by improving self-efficacy

A prominent finding of this study is that SFA significantly improved patients' self-efficacy. Self-efficacy is a core mediator of health behavior change and maintenance [15]. The intervention process of SFA is essentially a continuous "empowerment" process: the interventionist constantly strengthens patients' belief of "I can do it" by affirming every bit of their efforts and progress, such as "being able to think of that successful experience in the past is an ability in itself". When patients personally achieve preset small goals through their own efforts, their confidence in managing disease-related emotions is substantially consolidated. This improved self-efficacy may prompt patients to more actively apply the strategies learned in the intervention to daily emotional regulation, thereby forming a virtuous cycle of "skill mastery-enhanced efficacy → sustained behavior", which is a deeper benefit beyond symptom relief [16].

4.3. Clinical significance and limitations

This study provides preliminary evidence for the implementation of SFA in the early rehabilitation of stroke. The model has a clear process and relatively short time consumption, which is suitable for being carried out by trained nurses in clinical nursing work, and has good clinical transformation potential. The limitations of this study include small sample size and short follow-up time. In the future, multi-center, large-sample randomized controlled trials should be carried out, and the follow-up period should be extended to evaluate the long-term stability of the effect, as well as to explore its indirect impact on patients' neurological function rehabilitation, quality of life and other indicators.

5. Conclusion

SFA, as an empowering psychological intervention, can effectively alleviate anxiety and depression symptoms in patients with first-episode AIS, enhance their emotional self-management ability and self-efficacy. Therefore, it holds significant clinical value and warrants further application and promotion.

Funding

School-Level Scientific Research Project of Shanghai Urban Construction Vocational College (Project No.: cjky202421)

Disclosure statement

The authors declare no conflict of interest.

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