

# Evaluation of the Application Effect of "One Disease, One Product" Nursing Program in Improving Swallowing Function and ADL of Stroke Patients

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**Abstract** [Objectives] To observe the effect of "One Disease, One Product" nursing program in improving swallowing function and activities of daily living (ADL) of stroke patients. [Methods] 240 patients with stroke complicated with dysphagia were divided into intervention group and control group according to the random number table method, with 120 cases in each group. The patients in the intervention group were treated with "One Disease, One Product" nursing program for standardized process nursing, and the control group was treated with routine nursing for stroke. Three weeks later, the swallowing function of the two groups of patients was evaluated by water swallowing test. At the same time, Barthel life index was used to evaluate patients' activities of daily living (ADL) before nursing, after 3 weeks and after 3 months of nursing. [Results] After 3 weeks, the proportion of stroke patients with normal swallowing function in both groups increased compared with before, and the increase was more obvious in the intervention group. The difference in the proportion of stroke patients with normal swallowing function between the intervention group and the control group was statistically significant. The BI index scores after 3 weeks or at the follow-up three months later showed that compared with the same group before care, the BI index scores of patients in both groups increased significantly compared with before, but the increase was even greater in the intervention group, close to normal. [Conclusions] The "One Disease, One Product" nursing program can significantly improve the swallowing function of stroke patients, and can improve the near and long-term activities of daily living of patients, thus creating a high-quality nursing service brand.

**Key words** "One Disease, One Product", Stroke, Swallowing function, Activities of daily living

## 1 Introduction

Stroke patients are often prone to swallowing dysfunction, complicated with nutritional deficiency, water-electrolyte imbalance and respiratory tract infection, *etc.*, which leads to malnutrition and low immune function, makes the combined infection difficult to cure, affects the recovery of their overall activities of daily living, and easily causing complications, with a high mortality rate<sup>[1–2]</sup>. In order to reduce the disability rate and mortality rate of stroke patients, Shiyan Taihe Hospital has launched an evidence-based "One Disease, One Product" disease care program since October 2021, emphasizing the combination of optimal evidence, optimal process and optimal care to provide comprehensive, full-process, active and professional high-quality nursing services to all stroke inpatients. It is found that the "One Disease, One Product" nursing program can improve the recovery of swallowing dysfunction of stroke patients, reduce and avoid the occurrence of adverse events, improve patients' activities of daily living (ADL), improve the quality of nursing services, and improve the treatment quality of specialized diseases.

## 2 Objects and methods

**2.1 General information** 240 stroke patients hospitalized in the Department of Neurology and Neurosurgery of Shiyan Taihe Hospital from January 2022 to June 2022 were selected, numbered according to the time of admission, and divided into intervention

group and control group by random number table method, with 120 cases in each group. There was no statistical significance in gender, age, course of disease, stroke type and other general conditions between the two groups ( $P > 0.05$ ), and the data were comparable.

**2.2 Inclusion criteria** (i) Patients who meet the diagnostic criteria of ischemic stroke and cerebral hemorrhage at the Fourth National Academic Conference on Cerebrovascular Diseases in 1996<sup>[3]</sup>, and are diagnosed by skull CT or MRI examination, and are conscious; (ii) initial onset; (iii) activities of daily living score (ADL) < 60 points; (iv) hospitalization for more than 3 weeks and more.

**2.3 Exclusion criteria** (i) History of mental illness; (ii) aphasia or cognitive impairment; (iii) patients with severe heart, liver, kidney and other organ dysfunction; (iv) patients with advanced cancer; (v) accident and death within 3 months after discharge.

### 2.4 Nursing methods

**2.4.1 Control group.** Refer to the nursing routine of stroke patients formulated by *Internal Medicine Nursing*<sup>[4]</sup>, including vital sign monitoring, posture placement, guidance of functional exercise, *etc.*

**2.4.2 Intervention group.** Implement the "One Disease, One Product" nursing program, and the specific intervention methods are as follows:

(i) It adopts evidence-based nursing method, participate in the theoretical training related to evidence-based nursing in the hospital, and the head nurse and doctoral physician guide other team members to retrieve the latest evidence monthly during pro-

ject implementation.

(ii) Taking the quality nursing service chain as the main line, it constructs the optimal food safety nursing process and scheme for stroke patients (Fig. 1).

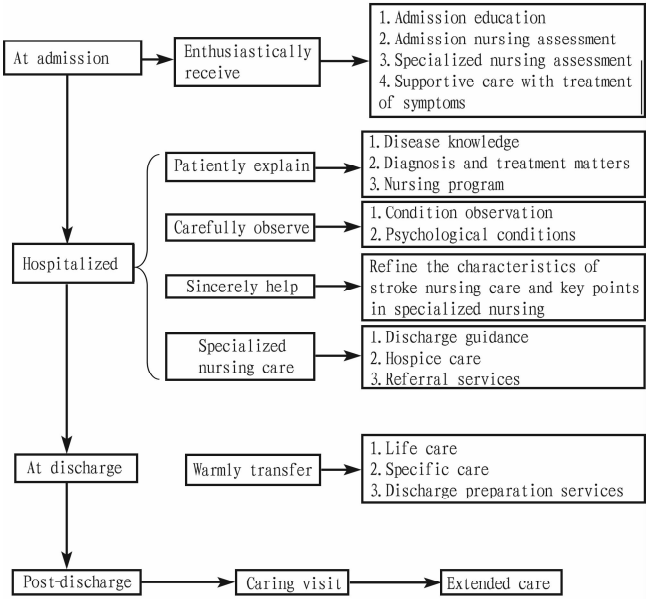


Fig. 1 Flow chart of "One Disease, One Product" nursing program for stroke patients

**2.4.3 Constructing ward supervision system.** The evidence-based nursing team of this program formulated the supervision and inspection form of "One Disease, One Product" program for safety of stroke patients, and formulated the supervision and inspection plan of "One Disease, One Product" program for the implementation of relevant programs. All stroke patients were screened for swallowing disorders, and the patient's eating environment, meal selection, eating position, eating method and psychological care are controlled to better ensure the eating safety of stroke patients and promote their rehabilitation. In the process of all research, the "One Disease, One Product" project team needs to keep abreast of the swallowing function level of stroke patients in the selected range at all times, and supervise and complete the implementation of the specific intervention methods of the above-mentioned "One Disease, One Product" nursing program.

Intervention frequency: implemented according to the specif-

ic intervention methods mentioned above.

**Intervention time:** from the time of admission to 3 months after the patient's discharge, the inpatient intervention time should be  $\geq 3$  weeks.

**2.5 Evaluation indicators** The patient's swallowing disorder was evaluated 3 weeks after the implementation of "One Disease, One Product" nursing program by water swallowing test. Barthel index (BI) was used to evaluate the activities of daily living of patients before stroke onset and after 3 weeks of hospital care, and during follow-up 3 months after discharge.

**2.6 Statistical analysis** SPSS 27.0 software was used for statistical processing, swallowing dysfunction was expressed by percentage and tested by  $X^2$  test, and the BI index score of activities of daily living was compared by  $(\bar{x} \pm s)$  and  $t$  test, and the difference was statistically significant with  $P < 0.05$ .

3 Results and analysis

**3.1 Comparison of water swallowing test results between two groups of patients** Compared with the control group with conventional internal medicine care, the water swallowing test results in the stroke intervention group with "One Disease, One Product" nursing showed that the proportion of stroke patients with normal swallowing function in the two groups was higher than before, and the increase in the intervention group was more obvious, which was statistically significant compared with before treatment ( $P < 0.001$ ); the proportion of stroke patients with severe swallowing dysfunction in both groups was lower than before, and the decrease in the intervention group was more obvious, which was statistically significant compared with before treatment ( $P < 0.001$ ). Compared with the control group, the proportion of stroke patients with normal swallowing function in the intervention group was 63.33%, while the proportion of patients with normal swallowing function in the control group was 35.0%. The difference between the two groups was statistically significant ( $P < 0.001$ ); the proportion of stroke patients with severe swallowing dysfunction in the intervention group was 5.8%, while the proportion of stroke patients with severe swallowing dysfunction in the control group was 13.33%. The difference between the two groups was statistically significant ( $P < 0.05$ ) (Table 1).

Table 2 Comparison of water swallowing test results between the two groups of patients (n = 120, %)

Group	Pre-care				Post-care			
	Normal	Suspicious	Exist	Severe	Normal	Suspicious	Exist	Severe
Intervention	13 (10.83)	30 (25.0)	34 (28.33)	43 (35.83)	76 (63.33) $\Delta^\#$	24 (20.0)	13 (10.83) $\Delta^\#$	7 (5.8) $\Delta^\#$
Control	15 (12.5)	28 (23.33)	31 (28.83)	46 (38.33)	42 (35.0) $\Delta$	39 (32.5)	23 (19.17)	16 (13.33) $\Delta$

NOTE Compared with this group before nursing,  $\Delta P < 0.05$ ; compared with the control group,  $^\# P < 0.05$ . The same below.

**3.2 BI scores of the two groups of patients** The BI scores of the two groups of patients before hospitalization and 3 weeks after receiving "One Disease, One Product" care and during follow-up after 3 months showed that compared with the same group before nursing, the BI score of the two groups of patients increased com-

pared with that before nursing and it was statistically significant ( $P < 0.001$ ). However, the increase in the intervention group was more obvious. After 3 months of discharge, the BI score of the two groups of patients still increased compared with that before (To page 78)

