

## **Clinical improvement of nursing intervention in swallowing dysfunction of elderly stroke patients.**

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### **Abstract**

**Objective:** This study aims to discuss clinical improvement of nursing intervention in swallowing dysfunction of elderly stroke patients.

**Methods:** A total of 120 elderly stroke patients with swallowing dysfunction admitted in our hospital from February 2016 to September 2017 were chosen and randomly divided into control (n=60) and intervention groups (n=60). The control group was provided with conventional nursing service, and the intervention group was provided with nursing intervention. Improvements of swallowing dysfunction, living quality, pulmonary infection, and nursing satisfaction were compared between the two groups.

**Results:** The total efficiencies in improving swallowing dysfunction are 96.67% and 83.33% for the intervention and control groups, respectively, and the difference was statistically significant (P<0.05). The scores of physical functions, psychological functions, social functions, and material life are higher in the intervention group than those in the control group (P<0.05). The pulmonary infection rate in the intervention group (1.67%) is also lower than that in the control group (11.67%, P<0.05). Nursing satisfaction was significantly different between the two groups (P<0.05). The scores of nursing satisfaction are 98.33% and 88.33% in the control and intervention groups, respectively.

**Conclusions:** Nursing intervention exerts a significant clinical effect on improving swallowing dysfunction of elderly stroke patients. Such intervention can also improve the living quality and nursing satisfaction of the patients and reduce pulmonary infection rate. Hence, nursing intervention is worthy of clinical research and promotion.

**Keywords:** Elderly, Stroke, Nursing invention, Swallowing dysfunction.

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### **Introduction**

Swallowing dysfunction is a common complication of stroke and has a morbidity range of 37% and 78%. This condition also causes aspiration pneumonia, asphyxia, mistake aspiration and swallowing and death [1]. The morbidity of stroke increases gradually with continuous changes in the living habits of people particularly in the aging population; after stroke, the occurrence of swallowing functions increases [2,3]. Therefore, effectively relieving swallowing dysfunction has become a research key in clinical nursing [4]. In this study, 10 elderly stroke patients with swallowing dysfunction admitted in our hospital from February 2016 to September 2017 were chosen as participants to discuss the effects of nursing intervention.

### **Information and Methods**

#### **General information**

A total of 120 elderly stroke patients with swallowing dysfunction admitted in our hospital from February 2016 to September 2017 were chosen and randomly divided into control (n=60) and intervention groups (n=60). The control group consisted of 27 females and 33 males aged 61 to 82 y in average (70.57 ± 7.36 y). The intervention group consisted of 28 females and 32 males aged 60 to 82 years in average (70.25 ± 7.38 y). Statistical analysis of data was carried out by SPSS 18.0 and showed no statistical difference between the two groups (P>0.05). All respondents and their family members were informed about the research objective and volunteered in this study upon signing an informed consent form. This study agrees with the requirements of the Ethics Committee of our hospital.

## Methods

The control group was provided with a conventional nursing service that strictly conforms to the doctor's advice. The intervention group was given with nursing intervention.

**Psychological intervention:** The nursing staff initiates communication with the patients, evaluates their psychological state, encourages and comforts them according to their actual situation, and lets them participate into the treatment and nursing service positively [5]. The nursing staff also communicates with the family members of the patients positively, guides them to encourage and support the patients, and gives them the warm love of family, thus helping the patients to have a stable and optimistic attitude. Excellent nursing effect was achieved through these interventions.

**Health education:** The nursing staff introduces knowledge about swallowing dysfunction and possible untoward effects on the patients through videos and images, thus enhancing their enhancing their knowledge and encouraging them to cooperate in their therapy and nursing care [6].

**Rehabilitation exercises:** (1) pronunciation training: the nursing staff makes some character and word cards and guides the pronunciation training of the patients. The pronunciation training should start from simple characters, and the pronunciation difficulty can be increased gradually according to the actual situations of the patients [7]. The pronunciation training should be performed according to the tolerance of the patients at appropriate time. (2) Lingualis and masticatory muscle training: the nursing staff guides the patients to make appropriate lingualis and masticatory muscle training, such as shrinking the tongue, uplifting the tongue, and resisting the posterior hard palate by the tongue. (3) Mouth-opening training: the nursing staff guides the patients to stick their tongue, turn it, and train for other masticatory functions. (4) Cheek-and-throat muscle training: the nursing staff guides the patients to perform exercises of sucking, opening and closing mouths, blowing and cheek bulging, stimulating soft palate and tongue root by cold cotton swabs, and promoting swallowing of the patients. The swallowing time increases gradually. (5) Ingestion training: the nursing staff guides the patients to ingest food according to their positions. If the patients can lie on the back, then their body should lie on the back. If the patients can sit up, then they are asked to make heads anteflexion to ensure smooth ingestion.

**Diet intervention:** appropriate foods should be chosen according to specific conditions of the patients. In general, the selected foods are easy to digest and ruminant and include thick soup and food paste. Moreover, the patients are asked not to take hard foods, which are difficult to digest. If the patients are in comatose state, then spoon meat can be given.

## Observation indices

Improvement of swallowing dysfunction, living quality, pulmonary infection, and nursing satisfaction were compared between the two groups.

Swallowing dysfunction was evaluated using the following standards: cured: patients drink 30 ml of water once in 5 s without bucking; significant improvement: patients drink 30 ml of water once in 5 s with bucking; improvement: patients drink 30 ml of water twice in 5 s accompanied with bucking; no improvement: patients drink 30 ml of water in 10 s accompanied with several bucking. The total efficiency is the sum of cure, significant improvement, and improvement scores.

Living quality was evaluated using the standard: living quality of the patients was evaluated by the comprehensive assessment questionnaire of living quality (GQOL-74), including physical functions, psychological functions, social functions, and material life. The complete score of each item was 100. High scores indicate improved living quality.

Nursing satisfaction was assessed by a self-made questionnaire with the following scores (the complete score was 100 scores): very satisfying: >85; satisfying: 60-85; and unsatisfying: <60. Nursing satisfaction is the sum of very satisfying and satisfying scores.

## Statistical analysis

Statistical analysis on observation data of the two groups was carried out by SPSS 18.0. Enumeration data (e.g., total efficiency in improvement of swallowing dysfunction, pulmonary infection rate, and nursing satisfaction) were expressed by percentage and examined by chi-square test. Measurement data (e.g., physical function, psychological function, social function, and material life score) were expressed as  $\bar{x} \pm s$  and examined by t-test. Values at  $P < 0.05$  indicate statistically significant differences between the two groups.

## Results

### Improvement of swallowing dysfunction

The total efficiencies in improving swallowing dysfunction were 96.67% and 83.33% for the intervention and control groups, respectively, and the difference was statistically significant ( $P < 0.05$ , Table 1).

### Living quality

The intervention group achieved higher scores in physical functions, psychological functions, social functions, and material life than the control group ( $P < 0.05$ , Table 2).

### Pulmonary infection

The pulmonary infection rate in the intervention group (1.67%) is lower than that in the control group (11.67%) ( $P < 0.05$ , Table 3).

### Nursing satisfaction

Nursing satisfaction significantly differed between the two groups ( $P < 0.05$ ), with scores of 98.33% and 88.33% for the intervention and control groups, respectively (Table 4).

**Table 1.** Comparison of improvements in swallowing dysfunction between the two groups (n, %).

Groups	Cured	Significant improvement	Improvement	No improvement	Total efficiency
Intervention	37 (61.67)	12 (20.00)	9 (15.00)	2 (3.33)	58 (96.67)
Control	18 (30.00)	20 (33.33)	12 (20.00)	10 (16.67)	50 (83.33)
$\chi^2$					5.9259
P					0.0149

**Table 2.** Comparison of living quality between the two groups ( $\bar{x} \pm s$ , scores).

Groups	Physical functions	Psychological functions	Social functions	Material life
Intervention	81.36 ± 4.28	60.36 ± 5.48	58.36 ± 4.97	77.93 ± 5.46
Control	63.87 ± 5.99	41.97 ± 6.62	41.82 ± 6.74	61.28 ± 6.21
t	18.4022	16.5755	15.2990	15.5969
P	0.0000	0.0000	0.0000	0.0000

**Table 3.** Comparison of pulmonary infection rate between the two groups (n, %).

Groups	Cases of pulmonary infection	Percentage
Intervention (n=60)	1	1.67
Control (n=60)	7	11.67
$\chi^2$	4.8214	
P	0.0281	

**Table 4.** Comparison of nursing satisfaction between the two groups (n, %).

Groups	Very satisfying	Satisfying	Unsatisfying	Satisfaction
Intervention (n=60)	37 (61.67)	22 (36.67)	1 (1.67)	59 (98.33)
Control (n=60)	30 (50.00)	23 (38.33)	7 (11.67)	53 (88.33)
$\chi^2$				4.8214
P				0.0281

### Discussion

Swallowing dysfunction, a common complication in elderly stroke patients, causes pneumonia and dehydration and is a life threatening condition. In general, swallowing dysfunction refers to disability in swallowing, mouth and throat muscle dysfunction, and abnormal movement coordination related to

swallowing activity [8]. For elderly stroke patients, physical functions deteriorate gradually, immunity declines continuously, and swallowing dysfunction occurs. These phenomena cause malnutrition and dehydration, thereby decreasing the living quality of patients [9,10]. Therefore, nursing services must be enhanced to relieve swallowing dysfunction of patients and improve their living quality.

This study reveals that the intervention group achieved higher total efficiency in improving swallowing dysfunction, physical function, psychological function, social function, material life, and nursing satisfaction than the control group ( $P < 0.05$ ). Moreover, the pulmonary infection rate in the intervention group is lower than that in the control group ( $P < 0.05$ ). Consistent with previous reports, the present findings indicate that the nursing intervention can relieve swallowing dysfunction, reduce pulmonary infection, and improve living quality and nursing satisfaction of patients. In the general nursing intervention, psychological intervention can effectively improve the unhealthy emotions of the patients and help them to set up confidence to therapy, thereby increasing their compliance in therapy and nursing. Health education can increase knowledge on their disease and further motivate subjective activity. Rehabilitation training can guide the patients in pronunciation, tongue activity, and throat muscle training, thus enabling them to improve mouth and throat functions, accelerate recovery of swallowing functions, and further improve their living quality. In addition, diet intervention ensures dietary nutrition equilibrium and facilitates rehabilitation of the patients.

### Conclusion

Nursing intervention for elderly stroke patients has a significant clinical effect on improving their swallowing dysfunction. Moreover, the intervention can increase the living quality and nursing satisfaction of patients and reduce pulmonary infection rate. Nursing intervention is worthy of clinical research and promotion.

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