

THE APPROPRIATE INTERVENTION TO IMPROVE PATIENT OUTCOME AMONG STROKE PATIENTS: A LITERATURE REVIEW

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ABSTRACT

Stroke has a deadly domino effect and is the number one cause of neurological defects in the world. Stroke patients can experience neurological deficits including cognitive impairment and disruption in fulfilling functional status reducing patient outcome. This literature review aims to identify the appropriate intervention to improve patient outcome among stroke patients. The authors conducted a literature search using several databases, namely *ProQuest, EBSCO, Sage, and Science Direct* from 2008 to 2018. The keywords appropriateness in the search were “*stroke-patient*”, “*nursing intervention*”, “*patient outcome*”. The literature search showed there are several nursing interventions for stroke patients that have an effect on increasing patient outcomes, namely intervention of dysphagia management, mobilization exercises, acupressure, cognitive enhancement, and self-management empowerment interventions. Nursing intervention given to stroke patients varies depending on the patient's response that arises as a result of a disorder related to the function of the part of the brain affected in stroke patients. Nurses through nursing interventions have a role in improving outcomes in stroke patients

Keywords: *Nursing Intervention; Patient Outcome; Stroke-Patient*

1. Introduction

Stroke has a deadly domino effect. When the cerebral artery has a blockage or bleeding, the cerebral part from the flowed arteries is missing the support of oxygen and vital nutrients lead to injury, even continuing to infarction cerebral. Recent studies have shown cerebral infarction to experience more expansion than hypoxic regions as a result of neurotoxicity so that create free radicals damaging the neurons. Nerve cells damaged by stroke induce individuals with strokes having unpredictable nerve disorders (1)

Stroke is the number one cause of neurological defects in the world (2) and presents a large burden both globally and locally related to stroke defects (3,4). In the world, every

year 17 million people suffer strokes and more than six million die while five million suffer permanent disabilities (5). In the United States there are nearly 800,000 strokes a year, with one third of all stroke sufferers experiencing various levels of disability (6).

Stroke deaths have declined in the *Upper-Middle Income Countries* (UMIC) and many in the *Lower-Middle Income Countries* (LMIC) (7). The number of people suffering from stroke, mortality due to stroke and global burden due to disability by stroke increased in LMIC. The prevalence of highest stroke patients in LMIC is in Latin America and Caribbean (21.2 per 1000, 95% CI 13.7-30.29), the lowest stroke is in sub-Saharan Africa (3.5 per 1000, 95% CI 1 , 9-5,7). The sharp increase in stroke prevalence occurred in low-income countries, increasing by 14.3% per year, while the lowest increase occurred in lower middle income countries (6% per year) (8).

Indonesia as one of the LMIC has an increased prevalence of stroke from 2007 to 2013. The incidence of stroke based on diagnosed stroke symptoms by health workers was 8.3 per mile population in 2007. Whereas in 2013 there was an increase of 12.1 per mile population and based on the diagnosis of health workers, namely a total of 7.0 per mile of population (9).

Stroke patients can experience various body dysfunction affecting the quality of life, including cognitive impairments (2), cognitive impairment is a condition in which a person experiences difficulty remembering, learning new things, concentrating or making decisions (10). Cognitive disorders are varied ranging from focal to comprehensive neurological deficits involving all cognitive domains (11). In the acute phase, the frequency of cognitive disorders is more than 70% and around 25-50% can continue to become dementia (11,12). The mortality of stroke patients with a decline in cognitive function is relatively higher compared to patients without cognitive impairment (13).

In addition, stroke patients can also experience disruption in fulfilling functional status. Functional status is a basic to complex activity of daily life. Basic activities are urinating, eating, dressing, physical ambulation and bathing. More complex activities include the ability to use facilities such as telephone, shopping, food preparation, house keeping, laundry, transportation, responsibility for own health through the use of drugs and the ability to handle finances which are essential for daily survival (13).

Research regarding functional status and disability in stroke patients found that the functional status six months after stroke was influenced by age, sex, stroke severity, and type of stroke. Morbidity, socioeconomic level, and area of residence did not affect functional status in stroke patients (13). Twelve weeks mistreatment of stroke patients significantly decreased functional status (14).

Nurses as part of health workers have an important role in the care of stroke patients. Independent nurse-led interventions are rare, although nurses are health professionals who spend the most time with patients and assume primary responsibility for their care. This review aims to identify the appropriate nursing interventions and analyze their effectiveness in improving the outcome of stroke patients.

2. Objective

This literature review aims to identify the appropriate intervention to improve patient outcome among stroke patients.

3. Methods

3.1 Data Sources

Four data bases used are *ProQuest, EBSCO, Sage, and Science Direct* in this study.

3.2 Search Strategy

Literature search have done after PICO (Patient Intervention Comparison Outcome) is determined; P for stroke patients, I for stroke patient, I for nursing intervention, and O for patient outcome. The method used by the author is a literature review, by searching several databases namely *ProQuest, EBSCO, Sage, and Science Direct*. The author used several search keywords namely "*nursing intervention*", "*patient outcome*", and "*stroke-patient*". In addition, the search was limited to articles from 2008 to 2018. The results of the search produced 11 articles.

3.3 Inclusion Criteria

The inclusion criteria of article search include: 1) The original article, 2) discusses nursing intervention; 3) the dependent variable is an increase in patient outcomes; 4) respondents in the study were stroke patients; and 5) research results published in the range 2008-2018.

4. Results

4.1 Study Description

This research criticized several aspects, such as publication year, approach designs, research goals, and conclusion. The result of initial searchings was 216 journals consisted of 59 *proQuest* journals, 20 *EBSCO* journals, 98 *Sage journals*, and 39 *Science Direct* journals. Then, 11 relevant journals were selected.

4.2 Nursing Interventions in Stroke Patients and Their Effects on Patients Outcome

The review result of eleven articles reveals that there are five nursing interventions that can be applied to the provision of nursing care for stroke patients, namely management of dysphagia, movement training, acupuncture, cognitive enhancement, and self-management empowerment.

4.2.1 Management of Dysphagia

Dysphagia or swallowing disorder is a disorder that is common in stroke patients. Stroke patients with dysphagia are at risk for aspiration that can lead to death (15). This is the reason for the treatment of dysphagia. Two studies state that swallowing exercises performed by nurses are effective in improving the function of swallowing patients (16,17). One study stated that intervention in swallowing exercises by nurses performed at the patient's bedside showed increased swallowing function and positive secondary effects, such as mood state and quality of life in sub acute stroke patients with dysphagia (16). One other study studied the effects of the application of remote nursing interventions for stroke patients excluded from dysphagia. The results show that remote nursing interventions effectively reduce the incidence of complications in patients with dysphagia after stroke, improve the function of swallowing and improve the quality of life of patients (17).

4.2.2 Movement Training

Neurological conditions in stroke patients often cause functional disorders and disabilities that can have a major impact on the quality of life of patients. Interventions have been developed to improve functional conditions in stroke patients. Three studies illustrating the effect of mobilization exercises carried out by nurses have an effect in increasing the movement of stroke patients (18,19). One clinical trial study uses the principle of tactile-kinaesthetic stimulation by trained nurses during the patient mobilization process. The results showed an increase in functional status and quality of life for patients. However, this study also concluded that interventions were known not to have a significant effect on patient self-efficacy regarding the incidence of falls (18).

One other clinical trial study promotes movements that focus on limbs and looks more like a game. The game is designed to be a group activity led by nurses. The results showed that there were positive effects on functional status, fatigue, sleep, and depression in stroke patients. But there was no increase in the patient's cognitive status. Safe and pleasant nursing interventions must be developed and applied to reduce disability and stroke-related problems (19).

Whereas one other study compared two rehabilitation strategies to evaluate the effectiveness of early hospital mobilization exercises and home continuity provided by nurses, on functional recovery of basic and social activities in stroke patients. The results showed that patients improved significantly over time, but no differences were observed between groups in terms of basic and instrumental activities of the daily lives of stroke patients (20).

4.2.3 Acupressure

Two clinical trial studies state that acupressure performed by nurses is effective in restoring motoric function and daily activities of stroke patients (21,22). In addition, acupressure is known to reduce depression in stroke patients who experience hemiplegia. Meridian acupressure has the potential as an alternative nursing intervention for the multidisciplinary rehabilitation of stroke patients in practice (22).

4.2.4 Cognitive Enhancement

One clinical trial described the effect of cognitive interventions carried out by nurses on cognitive function, activities of daily life and depression in stroke patients. The results showed that cognitive intervention programs were significantly effective in improving cognitive function and daily life activities of stroke patients along with a decrease in depression scores (23). In addition, one study illustrated the effect of increasing therapy time in stroke patients, from 8.6 hours to 13 hours a week had a positive effect on cognition, mood (depression and anxiety) and ADL stroke patients (24).

4.2.4 Self-management Empowerment

Two studies stated that the positive effects of self-management intervention programs carried out by nurses in increasing daily activities (ADL) and self-efficacy, as well as the rate of hospitalization one month after discharge from the hospital were known to be lower in patients who received self-management empowerment interventions (25,26). Self-management interventions also have a positive effect on self-management behavior, quality of life, depression, and stroke-related complications. This study shows that self-

management intervention programs are effective for improving functional and psychosocial outcomes among stroke patients (25).

5. Discussion

Nursing intervention is one of the systematic steps in the nursing care process provided by nurses to patients. Nursing interventions are given according to the patient's response related to disorders that occur due to stroke. Some nursing interventions have been shown to improve patient outcomes. The intervention is not only focusing on the physiological functions of patients such as management of dysphagia, mobilization exercises, acupressure, cognitive enhancement, but does not rule out the psychological function of patients as colloidal individuals such as self-management empowerment.

Appropriate nursing interventions for the problems experienced by patients can help improve many patient outcomes, including improvements in functional and psychosocial outcomes. Enhanced functional results, including increased swallowing ability, increased motor strength, and increased basic and instrumental activities from everyday life (ADL). While psychosocial outcomes include positive effects related to self-efficacy, fatigue, sleep effectiveness, and mood (depression and anxiety).

This review also found that nursing interventions can produce outcomes in cognitive improvement, decrease stroke-related complications, and decrease hospitalizations after patient return. All outcomes of stroke patients can support the improvement of quality of life of stroke patients.

6. Conclusion

Stroke leaves sequel in the form of a neurological deficit that can affect the quality of life of patients. Nurses through nursing interventions play an important role in improving the outcome of stroke patients. Appropriate nursing interventions are useful for improving outcome patients regarding various problems perceived by patients related to the patient's response to the disorders encountered as a result of a stroke.

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