

## ENHANCE CAREGIVERS' PRACTICE ON MOTOR REHABILITATION CARE FOR STROKE PATIENTS AT PHU THO TRADITIONAL MEDICINE AND FUNCTIONAL REHABILITATION HOSPITAL IN VIET NAM

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### ABSTRACT

**Objective:** To evaluate changes in the caregivers' practice on the motor rehabilitation care for patients after stroke at Phu Tho Provincial Traditional Medicine and Functional Rehabilitation Hospital after the caregiver-training program in 2020.

**Method:** The one group pre-test and post-test educational intervention regarding the practice on motor rehabilitation for patients after stroke was conducted with a purposive sample of 50 caregivers who were main responsible for taking care of patients after stroke. **Results:** After the intervention, the caregiver's practice of motor rehabilitation for stroke patients was significantly overall improved. The mean scores of caregivers'

practice right after the intervention and before being discharged from hospital increased up to  $12.78 \pm 2.18$  points then continuously went up to  $15.68 \pm 3.04$  points in comparison with  $8.96 \pm 2.30$  points before the intervention. The numbers of caregivers who did appropriate practice on several items of taking care for motor rehabilitation of stroke patients were increased right after the intervention and before the discharge from hospital. **Conclusion:** The caregivers' practice on motor rehabilitation for patients after stroke was considerably improved after the training intervention of study.

**Keywords:** motor rehabilitation, stroke patients, caregivers, intervention

### 1. INTRODUCTION

According to the World Health Organization [1], stroke or cerebral vascular accident is currently the second most common cause of deaths and will become one of the leading causes of deaths worldwide in 2030. Among cardiovascular causes, stroke is one of the leading causes of death and disability. Accompany with the advancement of medicine, the death rate from stroke has been decreasing, but the number of disabled patients suffered from stroke tends to increase. The levels

of sequelae after stroke depend a lot on time and how patients are recognized, diagnosed and treated [2], [3]. Most studies on prevention and treatment of stroke had been done in developed countries, but more than 85% of strokes occur in developing countries [3].

In developed countries, because of high costs, many patients with stroke often depend on outpatient care for rehabilitation after being discharged from hospitals [4]. Home-based programs have emerged as an attractive alternative for stroke rehabilitation. Numerous studies have shown that home-based or caregiver-mediated rehabilitation programs can improve the mobility and functional performance of patients with acute or subacute stroke and reduce health care costs [5], [6].

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In Viet Nam, due to low economic condition, the resources of medical facilities in many local areas are limited, while the mortality rate and motor sequelae of stroke patients are still high [9], rehabilitation for stroke patients, especially for low-income families remains a difficulty. Patients after a period of acute stroke in Viet Nam are often seen in various levels of function loss from mild to severe, and notably a deficit of motor function. This make stroke patients to lose their independence in daily life and to become dependent on their family or society [7]. Therefore, motor rehabilitation for stroke patients become essential important, not during the hospital stay but need to be continued after the discharge from hospital to return home.

Studies showed a range of 60-80% of disabled people were recovered their function at home after discharge from hospital. However, rehabilitation in general and motor rehabilitation in particular for stroke patients requires a patience and long-term after a hospitalized duration and therefore, regular caregivers of stroke patients play an important role, s/he needs to be aware of the importance of rehabilitation and to be provided appropriate skills on care through a training program so that these caregivers can continue to perform motor rehabilitation for their stroke patients at home [8]. As recommended by the VietNameese Ministry of Health, caregivers need to be trained in the specific care techniques appropriate to their ability such as preventing pressure ulcers, placing therapeutic positions, moving the patient from bed to chair, or assisting with activities such as walking [9].

Aiming to train the regular caregivers of stroke patients on essential motor rehabilitation skills during patients' hospitalization and caregivers are available in hospital so that these caregivers will continue to do motor rehabilitation for patients after the discharge, this study was

conducted in order to "evaluate changes in the practice of motor functional rehabilitation in family caregivers of patients after stroke at Phu Tho Provincial Traditional Medicine and Functional Rehabilitation Hospital after the educational intervention in 2020."

## 2. RESEARCH METHOD

The participants in this study were "regular caregivers" of stroke patients with hemiplegia being hospitalized at Phu Tho Provincial Traditional Medicine and Functional Rehabilitation Hospital from January to May 2020.

The one group pre-test and post-test educational intervention regarding the practice on motor rehabilitation for patients after stroke was selected for this study design because of the most appropriate in terms of research method.

Caregivers selected to the study training program included persons who were confirmedly to take the main responsibility for caring of their stroke patient, to spend the most time on caring for patient's daily living activities such as hygiene, bathing, feeding, assisting the patient's movement and mobility during the hospital stay as well as after the patient discharges from hospital to return home. They have to consent to participate in the study and be able to perceive and perform activities of motor rehabilitation for the stroke patient. The study sample were not included any caregivers who attended a similar educational program; caregivers who did not participate fully in the activities of the study were not included in the analysis for results.

Convenience sampling method was applied and all caregivers who met the sampling criteria were selected. In fact, not all stroke patients have a regular caregiver as mentioned above and fully engaged in the research activities, so the actual sample of this study during the period of

implementing educational program was 50 participants.

The training content for caregivers was based on the document "Rehabilitation after a stroke" issued by the Ministry of Health of Viet Nam [8]. Techniques of patient's motor rehabilitation were illustrated with images accompanied by specific instructions were provided in advance to the caregiver, sample manipulations of care techniques for the stroke patient were performed in order to caregivers followed until s/he did well. Aimed to train the participated caregivers to perform appropriately the motor care of stroke patients and to become routine care, after the session of providing instructions and evaluating participant's performance, the caregivers were daily encouraged to deliver motor care for the patient away from patient's meals under the supervision of research team and any inappropriate performance by caregivers would be instructed again and the result after the re-instruction was not included in the analysis of the study results.

The caregiver's implementation of motor rehabilitation techniques for the stroke patient was measured by direct observations and using the same checklist for three times included on the second day of hospital stay (M1), on the day after training of motor techniques (M2) and on

the day before discharge from hospital (M3). Each motor care technique that the caregiver performed appropriately for the patient was scored 1 point, cases was not performed; not appropriate enough or performed incorrectly received no point. Data from evaluations were cleaned, entered independently two times and analyzed on SPSS 20.0 software.

In addition to ethical aspects such as the participant's rights and confidentiality, the study proposal received the approval by the Scientific Board and the Ethical Council for Biomedical Research of Nam Dinh University of Nursing as well as the permission of Phu Tho Provincial Traditional Medicine and Functional Rehabilitation Hospital.

### 3. RESULTS

The mean age of 50 regular caregivers who participated in the study was  $49.64 \pm 8.66$  years old, the number of female caregivers accounted for 72% and the number of caregivers at the educational level of high school was 64%.

The results of motor care practice by participated caregivers based on the training content at the time before the training (M1), right after the training (M2) and on the day before the discharge from hospital (M3) were summarized in Tables 1 to Table 4 as the following.

**Table 1. Care for lying postures of the patient**

Caring items performed by caregivers	Number of caregivers		
	M1	M2	M3
Placing the patient in his/her back			
Placing pillows under the paralyzed shoulder and hip	10	20	47
Keeping the patient's knee to be in a slight folding position	30	34	46
Placing the paralyzed foot to be perpendicular to the leg	26	39	43
Placing the patient on the affected side			
Placing the paralyzed shoulder to be in a folding position	30	38	47
Stretching the paralyzed upper limb to be perpendicular to the supine body with stretched paralyzed lower limb	28	39	44
Folding the healthy lower limb at the groin and knee	18	33	38

Placing the patient on the healthy side			
Stretching the healthy lower limb, placing the patient body to be perpendicular to the bed surface	12	19	42
Supporting the paralyzed upper limb with a pillow to be perpendicular to the body	30	40	46
Supporting the paralyzed lower limb with a pillow and to be folded in the hip and knee	16	21	46

**Table 2. Care for changing patient positions**

Caring items performed by caregivers	Number of caregivers		
	M1	M2	M3
Rolling the patient to the normal side			
Interlocking the normal hand to the paralyzed hand	29	31	43
Folding the paralyzed groin and knee	18	27	40
Pulling the paralyzed hand toward the healthy side with the healthy hand	30	35	40
Pushing the patient hip toward the healthy side	21	24	29
Rolling the patient to the affected side			
Lifting the patient's healthy arm and leg	12	22	43
Bring the healthy arm and leg toward the paralyzed side	33	33	43
Turning the patient's body toward the affected side	40	44	45
Supporting the patient to sit up from the supine position			
Sitting beside the stroke patient	31	37	39
Making the patient's hands to cling on the caregiver's arm	18	21	27
Having an arm to be around to support the patient's shoulder	33	33	30
Lifting the patient slowly to sit up	40	42	48

**Table 3. Supporting the patient in performing exercises to improve muscle strength**

Caring items performed by caregivers	Number of caregivers		
	M1	M2	M3
Doing movements of the patient's hand joints	15	23	36
Doing movements of the patient's wrist joints	34	44	44
Doing the patient's elbows to be folded and stretched	36	46	45
Doing the patient's shoulders to be folded and stretched	23	30	34
Doing the patient's shoulders to be opened and closed	22	31	38
Doing the patient's groin to be folded and stretched	18	29	38
Doing the patient's groin to be opened and closed	22	21	27
Doing the patient's knees to be folded and stretched	30	32	33
Doing the patient's ankles to be folded and stretched	24	31	38
Helping the patient to put his/her weight on the paralyzed leg	4	19	23
Helping the patient to lift his/her hips off the bed	2	8	8

**Table 4. Assisting the independence of patient in daily activities with support tools**

Caring items performed by caregivers	Number of caregivers		
	M1	M2	M3
Transferring the patient from bed to wheelchair and vice versa	40	43	48
Supporting the patient to stand up from sitting position	33	41	45
Supporting the patient to walk in the two parallel bars	12	31	33
Supporting the patient to use a shoulder pulley system	4	13	16
Applying an orthopedic brace to maintain correct posture	1	6	11

The results from observing the caregivers' performance of care techniques regarding motor rehabilitation for stroke patient at the time of pre-training, summarized in Tables from 1 to 4, showed clearly that there were a certain number of caregivers implemented already four groups of motor rehabilitation on caring for their stroke patients. Notably, there were a number of items which were performed by 30 or more than caregivers of the total 50 study participants.

Observing and re-evaluating at the times of post-training and the day before the patient's discharge from the hospital all showed a general trend of increasing the number of caregivers performed appropriate techniques of motor rehabilitation. In all 4 groups included taking care of the lying position of the patient, of changing the position for the patient, of helping the patient to perform exercises that improve muscle strength and support the patient to establish daily living activities.

The outcomes of care practice on motor rehabilitation for stroke patients performed by the caregivers participated in the study was overall evaluated based on the scores of all care techniques at different times as seen in Table 5.

**Table 5. Overall score of caregivers practice**

Scores	Times of measurement		
	M1	M2	M3
Minimum score	5	10	10
Maximum score	14	17	21
Mean score	8.96 ± 2.30	12.78 ± 2.18	15.68 ± 3.04
p(t-test)		p(2-1) < 0.001	p(3-1) < 0.001

There was a significant increase in the mean score of motor rehabilitation practice immediately after the training course (M2) and continued to increase on the day before the discharge from hospital (M3), the mean scores respectively were 12.78 ± 2.18 points and 15.68 ± 3.04 points in comparison with 8.96 ± 2.30 points at the time of pre-training (M1).

#### 4. DISCUSSION

According to the overview report of the health sector in 2014 by the Ministry of Health of Viet Nam [10], the incidence of stroke in 2014 was 47.6 per 100,000 persons and the direct cost for medical treatment of this disease was 144 billion

Viet Nam dong per year. About 15,990 stroke patients were paralyzed, disabled, and unable to work due to stroke each year. Common consequences of strokes in people with stroke were weakness or paralysis of one side of the body, leading to

difficulty in rolling over in bed while changing body positions. Weakness or paralysis of one side of the body also affected the ability to balance, making difficult for the patient to sit up and sit steadily, to stand up and to move. In addition, the difficulty of moving hands, feet and body also made difficult for the patient to perform daily activities including eating, washing face, brushing teeth, changing clothes, etc. [2], [11]

Doing motor exercise not only helps the stroke patient to recover mobility and gradually become independent in daily activities, take care of and serve themselves, reduce the burden on their family and the society, but also helps to reduce stroke recurrence [4], [6] and the role of caregivers who were trained on providing appropriate care and advocacy for stroke patients have been shown to contribute to solving these problems [12].

Before the training, there was a certain but uneven number of the caregivers who performed some items of care in all the motor rehabilitation technical groups for stroke patients as seen in Tables 1 to 4. This results in our study were also consistent with the results from a similar educational intervention study by Nguyen Thi Lan in 2017 in Quang Ninh that conducted in 54 regular caregivers [13] in which there was also a certain number of caregivers who were able to perform some of the care items regarding motor care technical groups before participated in the training program. Stroke as mentioned is a common problem and information on taking care of stroke has been disseminated from a variety of sources that could be the reason for this finding, but there is still no evidence from the research itself to confirm. And this is also one of the limitations of the study when the instrument of data collection did not ask questions for this issue. However, it can be said that this is a positive signal of caregivers' willingness to receive official

guidance and training from healthcare professionals.

After the training course and on the day before the patient's discharge, the results showed a considerable increase in the number of regular caregivers who did appropriate practice on motor rehabilitation care in more items in all technical groups of motor rehabilitation for their stroke patients. Accompany with the same improvement resulted in the study of Nguyen Thi Lan's after the educational intervention [13], the result of improving caregivers' practice at the times of post-intervention in our study was again confirmed this.

The study had not yet achieved the ideal results that was to enable all regular caregivers to properly and fully implement motor rehabilitation care for their stroke patients. The reasons could in particularly be the limited duration of the intervention. It was the period of hospital stay of a patient and the presence of his/her caregiver in the hospital not long enough to be affected. Moreover, a regular caregiver also needs time to create his/her habits in daily caring practice. However, adding of a caregiver to the team of caregivers who can provide motor rehabilitation care for stroke patients after the intervention is likely to increase the chances for stroke patients to be taken care of and recovered motor function after discharge from hospital, and this means practical rather than statistical.

As required, each of motor rehabilitation care techniques for stroke patients that caregivers performed properly and fully could be scored and the results based on scores of practice. Table 5 illustrated an increased score of caregivers' practice right after the training course at  $12.78 \pm 2.18$  points and continued to increase on the day before the discharge at  $15.68 \pm 3.04$  points compared to  $8.96 \pm 2.30$  points that caregivers gained at the time before the training course of the total 23 points of the

scale and the results were similar to the results published in the study of Nguyen Thi Lan [13].

In this study, there was a considerable difference that the number of caregivers as well as the score of practice of care at the time before the discharge from hospital (M3) was higher than those at the time of right after the intervention (M2). In contrast to some educational interventions where outcomes were usually seen an increase immediately after the intervention and then a decrease in somewhat after a time since the training course ended. The reason for this difference was that in our study we would like the regular caregivers to develop care skills and habits, so that caregivers were encouraged to perform care for his/her patient daily based on visual guidance and additional instructions if any improper practice happened, this was also the reason for the practice results in the pre-discharge time were higher than the practice results immediately after the training course, this is logical with the philosophy of teaching and learning that practice when repeated is likely to be preserved for longer [14].

With a limited duration and resources in conducting the study, we could not do the following-up or a supervision to be able to confirm that after discharge from hospital the motor rehabilitation practice from the training course whether or not to be implemented by the caregivers as happened during the hospital stay. This was a limitation of this study and also a recommendation for further studies.

## 5. CONCLUSION

The training program in this study had clearly improved motor rehabilitation care for stroke patients with an increase in the number of regular caregivers did appropriate care practice of motor rehabilitation for their stroke patients following the guidelines of the Ministry of Health.

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## MANIFESTATIONS OF OCCUPATIONAL STRESS AMONG NURSES IN PHU YEN GENERAL HOSPITAL - VIET NAM

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### ABSTRACT

**Objective:** To describe the common signs and symptoms of occupational stress in nurses. **Method:** The descriptive study design was conducted on 281 nurses who were taking care patients at the Phu Yen General Hospital, Phu Yen province. Data collection instruments were developed based on literature reviews. The self-report questionnaire were used to collect data from participants. **Results:** All nurses had at least one of the signs or symptoms belonging to 4 groups of physical, psychological, emotional and behavioral signs or symptoms. Physical and psychological signs appeared more than emotional and behavioral signs. In which, the most frequent and continuous signs were described including of fatigue, headache

(53.4%); decrease in concentration (42%); insomnia (33.1%) and fastidious, irritable (36.7%). The symptoms were few or never appear including causing trouble with people around, making frequent mistakes, limiting contact, forming negative habits. **Conclusion:** Occupational stress was a common health problem, and their signs or symptoms varied from person to group. Current research was performed to assess the signs or symptoms of occupational stress in nurses and it would provide very useful data for healthcare facility sector in Viet Nam.

**Keywords:** Nursing, Occupational stress

### 1. INTRODUCTION

Occupational stress has been recognized as one of the most common health problems among health care workers [1]. In which, nursing was identified as a profession with a high level of stress [2], [3]. Occupational stress is fundamentally

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