

**Dedi Supriadi**

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## ORIGINAL ARTICLE

# The Effectiveness of ROM (Range Of Motion) Mobilization Education on Informal Caregivers of Stroke Patients in the Inpatient Room

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## ABSTRACT

**Introduction:** Stroke is a neurologically deficit acute disease attributable to a focal vascular cause and is one of the leading causes of disability and death. Disability caused by stroke has a major impact on the family members as their formal caregivers, who in turn have to provide the treatment and care with sufficient knowledge. The purpose of this study was to determine the effectiveness of education on ROM (Range of Motion) mobilization techniques to the informal caregivers on stroke patients in the care room of RUSD Dr. Soekardjo, Tasikmalaya. **Methods:** This is a quantitative study and analysis was carried out using non parametric Wilcoxon tTest. The total sample for this study was 27 respondents and were selected by convenience technique. **Result:** The result revealed a significant difference in the mean value on the study of ROM mobilization education on caregivers before and after the intervention ( $p$ -value<0.05). **Conclusion:** Family caregivers should seek more information on managing stroke using mainly non-pharmacological components on stroke patients in order to minimize stroke reoccurrence and also to prevent further complications.

**Keywords:** Stroke, Informal Caregiver, Education, Range Of Motion

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## INTRODUCTION

The American Heart Association (AHA, 2014) stated that the incidence of stroke is 3 million stroke patients per year and 50,000 stroke patients with initial stroke occur every year (1). In Indonesia, 500,000 cases were found, with 125,000 of them dying, and the rest had minor or severe disabilities. The death rate due to stroke is estimated to reach 6.5 million patients in 2015 and the number will increase to 8 million patients by 2030 (2). According to 2014 Ministry of Health data, the incidence of stroke is mostly found in the 45-54 year age group. Data for each region in Indonesia, shows West Java 533,895 people (highest), Central Java 431,021 and West Papua 2,007 people (3).

Stroke is one of the leading causes of death and disability worldwide apart from cancer (4). Disability due to stroke can include speech disorders (aphasia) (5) activity disturbances, visual disturbances, (6) weakness, difficulty walking and coordinating body parts, headaches, facial muscle weakness, visual disturbances,

sensory disturbances, disturbances in thought processes and loss of control over motor movements (7), which also affect family members (8) as informal caregivers to help the patient's difficulties in completing daily activities, as the patients are very much dependent on emotional and physical support (9).

Informal care is the care given at home and considered non-professional as they do not require any payments from the sufferers. The caregiver's task is to provide emotional support, care for patients (bathe, dress, prepare meals, prepare medicines), manage finances; make decisions about treatment and communicate with formal health services (10). One of the non-pharmacological treatments that can be given to stroke patients is ROM exercises which can be divided into two, namely active ROM or that done independently, and passive ROM carried out with assistance (11).

A caregiver's attention is very important because the successful treatment and care of stroke patients really needs caregiver's help and support (12), and is expected to improve care for stroke patients to minimize the occurrence of physical disability and dependence of stroke patients in fulfilling their daily needs (13). However, different studies on the role of caregivers in improving the health quality of stroke patients has been

carried over but still need more to move forward (14-16).

2 Therefore, this study aims to identify the effectiveness of ROM mobilization education for informal caregivers for stroke patients in the Inpatient Room of RSUD Dr. Soekardjo, Tasikmalaya, Indonesia.

**MATERIALS AND METHODS**

9 This research is a quantitative research, using a Pre-Experimental design in the form of One-Group Pretest-Posttest Design, conducted from 27 April - 25 May 2019. The samples are informal caregiver who accompanies the patient as the person in charge, totaling to 27 respondents. The respondents were selected using Accidental Sampling which was conducted for 4 weeks. The things studied included gender, level of education and the effect of education on mobilization.

The research instrument consisted of 20 numbers related to knowledge about stroke and ROM (Range of Motion) which had to be filled in by respondents who were willing to take part in the research after filling out the informed consent form.

16 Univariate data analysis performed were through frequency distribution of gender and education Bivariate analysis were carried out using the non-parametric Wilcoxon test which shows the results of the pretest-posttest value with a significance value p value of <0.05.

6 This research was approved by the ethics committee of the national and political unity body of the Garut District Government, Indonesia, recommendation letter Number: 072/412 - Bakesbangpol / Etik / 2019.

**RESULTS**

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1  
1 The results of this research regarding the characteristics of respondents were obtained from the results of research on the Effectiveness of ROM (Range of Motion) Mobilization Education on Informal Caregivers of Stroke Patients in the Inpatient Room of RSUD dr. Soekardjo, Tasikmalayaare. Table I shows the female caregivers were more common with a total of 21 people (77.8%) and male caregivers with a total of 6 people (22.2%). Based on table I, the level of education of the respondents show SD (Sekolah Dasar) education as many as 7 respondents (25.9%), SMP(Sekolah Menengah Pertama) 3 (11.1%), and the dominant education level of the respondents in this study was the SMA(Sekolah Menengah Atas) / SMK(Sekolah Menengah Kejuruan) / equivalent level as many as 10 people (37.0%), D1 (Diploma1), D2 (Diploma2), D3 (Diploma3), D4 (Diploma4) as many as 3 respondents or (11.1%) and S1 (Sarjana S1) as many as 4 respondents or (14.8%).

17  
19 Table II shows that the respondents in this study showed

**Table I: Frequency Distribution of Informal Caregiver Gender and Education level**

Variables	Frequency	Percentage (%)
Gender		
Male	6	22.2
Female	21	77.8
Total	27	100.0
Education		
SD	7	25.9
SMP	3	11.1
SMA/SMK	10	37.0
D1/D2/D3/D4	3	11.1
S1	4	14.8
Total	27	100.0

**Table II: Distribution of Education and knowledge Levels**

Education	Knowledge	
	Effective (≥60)	Ineffective (≤60)
SD	7	-
SMP	3	-
SMA/SMK	10	-
D1/D2/D3/D4	3	-
S1	4	-
Total	27	0

a value above 60 or effective, which means that education or counseling at all levels of education, is at an effective value.

Table III shows the value of the results of the non-parametric test analysis Wilcoxon Test. Based on the statistical output the average pretest value is 45.74 which shows the average is low, while the posttest average value is 80.74 which shows the average value is high. The educational effectiveness value of ROM Mobilization on Informal Caregiver of Stroke Patients in the Inpatient Room of RSUD Dr. Soekardjo, Tasikmalaya shows that the p-value is 0.000, (p-value < 0.05) and thus Ha is accepted and there is a significant difference in the average of before and after the ROM mobilization education.

**Table III: Wilcoxon Test Analysis**

Knowledge	Mean	P Value
Pretest	45.74	0.000
Posttest	80.74	

**DISCUSSION**

The results of this study indicate that female respondents are more than male respondents with the highest level

of education is SMA / SMK / SLTA / equivalent, and the level of knowledge is in the low range.

Respondents in the study who are informal caregivers have a duty to support other individuals in emotional support, caring for patients, managing finances, making decisions about treatment and communicating with formal health services (10), really need good knowledge. Knowledge of ROM (Range of Motion) which is a therapy to maintain or improve the level of perfection of the ability to move joints normally and completely to increase muscle mass and muscle tone, which is included in non-pharmacological therapy is still common to respondents or their families (17).

Respondents' initial knowledge can be categorized as low but there is a significant difference after the respondent received education from the researcher as evidenced by the pretest and posttest scores. The knowledge that is needed by each individual can not only be obtained through formal education as-, there are many other ways to get knowledge which include through counseling to exchange knowledge, social media can also be a means of obtaining information related to stroke or other information and can be obtained through sight and hearing.

The results of this study are in line with the research (18) which stated that family knowledge about stroke is mostly in the sufficient category, namely 49% and there is a relationship between knowledge and family attitudes in providing care for post-stroke patients at the Neurology Polyclinic RSUD dr. Soekardjo, Tasikmalaya. Another research suggests that knowledge can be obtained through the five senses, especially sight and hearing. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste, sense of touch, and most significantly by the eyes and ears, which are the most easiest media to gain knowledge (19).

The results of the measurement of knowledge showed that there was no decrease in the posttest score, instead there was an increase after education was given which could support informal caregivers to provide care to sick family members. Another research which states that the caregiver's experience in caring for post-stroke patients have a positive impact. The positive impact is in the form of increasing self-understanding of the meaning of life, increasing knowledge and experience and repaying favors as a form of obligation as a family (20).

This is evidenced by the posttest scores and short interviews with respondents after being given education about ROM mobilization which states that they are more familiar with strokes and are now aware of the method of treatment for family members when they come home from the hospital later to prevent complications. Many stroke patients experience recurrent strokes or

complications after discharge from hospital which actually worsens the patient's condition because the care by the informal caregiver or family while at home is not good because of poor knowledge about the patient's illness and how to treat it. This is reinforced by the results of research which states that the level of respondent's knowledge with the respondent's attitude in providing care to post-stroke patients has a significant relationship (21).

The results showed the effectiveness of providing education to caregivers as seen from the p value of 0.000 which is smaller than the value of  $\alpha$  0.05 which means there is a significant difference before and after being given education in the inpatient room of RSUD Dr. Soekardjo, Tasikmalaya. After being given education about passive or active ROM, the informal caregiver and the patient are excited to do ROM at home after being discharged from the hospital. The caregiver feels helped by the education given because it can increase knowledge and make it easier for the caregiver to care for family members who have incurred stroke. Stroke patients also feel better after provided with family-assisted ROM mobilization during the counseling session because this helped to stretch the affected muscles. This is in line with the research conducted by Semet et al. (22) that proved that patient families had a high level of knowledge about stroke and the relatives of patients had high level of knowledge of the stroke. Knowledge of stroke patients was higher than their relatives.

Recommendations for future is that for informal caregivers, hopefully it can be an input in increasing knowledge about stroke by attending stroke-related counseling or by reading different sources of information to obtain additional knowledge for education. The information obtained from this study can become a source for further research development.

## CONCLUSION

Analysis of the results of the pretest level of knowledge of the informal caregiver of stroke patients showed low results, which showed that the respondents' level of initial knowledge was in the low category  $\leq 60$ , while the results of the post test showed a significant increase in the level of knowledge of the respondents after being given education in the high category  $\geq 60$ . Wilcoxon non-parametric test analysis of the effectiveness of ROM (Range of Motion) mobilization education on informal caregivers of stroke patients showed effective results with a p value of 0.000 ( $0.000 < 0.05$ ).

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