

ORIGINAL ARTICLE

The Effect of folding booklet education on the level of knowledge of family caregivers of stroke patients

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ABSTRACT

Introduction: As many as 25 – 75% of stroke patients need the help of family caregivers to help with daily activities. Most family caregivers have insufficient knowledge and abilities, where family caregivers need support and education from nurses in providing education to family caregivers while they are still in the hospital. **Objectives:** Identifying the influence of folding booklet education on the level of knowledge of family caregivers of stroke patients at Wawa Husada Kepanjen Hospital. **Methods:** The design used in this research was a quasi-experiment with the one group pre-test post-test design. The total sample of 30 family caregivers of stroke patients was taken using accidental sampling on February 6 - February 19 2023. The level of knowledge of family caregivers of stroke patients was measured using a stroke knowledge level questionnaire and provided education using a folding booklet. **Results:** The majority of respondents were aged 36-45 years (36.7%), female (70.0%), high school (50.0%), working (56.7%), no care experience (90.0%). Before being given foldlet (folding booklet) education, the majority of respondents had a good level of knowledge (43.3%), after being given foldlet (folding booklet) education, respondents with good knowledge increased (90.0%). Statistical test analysis obtained p value = $0.001 < 0.05$. **Conclusions:** The majority of family caregivers before being given foldlet (folding booklet) education had a level of knowledge in the good category, likewise after being given foldlet (folding booklet) education the level of knowledge in the good category increased, so there was an influence of foldlet (folding booklet) education on the level of knowledge of family caregivers of stroke patients.

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1. Introduction

Stroke is known as the second cause of death and the third cause of disability. Stroke can have an impact on the well-being and function of the sufferer's body, not only for the sufferer but the entire family or family caregiver also experiences this. On the other hand, the agreement as a family caregiver can lead to reduced free time, socializing, rest and relaxation for the family caregiver (Ika et al., 2021; Mou et al., 2021). According to Lutz and Tsai, the family has a main function, namely meeting the needs of other family members. This cannot be done by family caregivers if they do not have formal readiness and needs. So family caregivers need to learn new roles and increase knowledge about caring for stroke patients at home (Farahani et al., 2020).

As many as 25 – 74% of stroke patients need help from family caregivers to help with daily activities (Kaur et al., 2018). Providing care to stroke patients often causes a burden on family caregivers both physically and in level of knowledge. This needs to be followed up because the majority of research still focuses on stroke sufferers (Nurjannah & Setyopranoto, 2018).

WHO data for 2018 states that the population of stroke patients in the world reached 33 million people and 16.9 million people experienced stroke symptoms. WHO states that 87% of the

population suffers from stroke in low and middle income countries (Phipps & Cronin, 2020). The Ministry of Health's movement for healthy living (2017) states that every 2 seconds results in 1 person having a stroke, while every 4 seconds a person dies due to a stroke. In Indonesia, the stroke population is quite high and increases by 12.1% every year (Johnson et al., 2016; Ika et al., 2021; Indonesian Health Promotion Publications et al., 2018).

Some family caregivers have insufficient knowledge and abilities, where family caregivers need support and education from nurses to help provide health services. The success of family caregivers in caring for stroke patients cannot be separated from the nurse's responsibility in providing education to the family or family caregiver while they are still in the hospital (Herrin et al., 2016).

Nursing Law article 29 paragraph 1b of 2014 states that in carrying out nursing practice, nurses serve as instructors and counselors for clients. This law explains the obligations of nurses to provide education to families while in hospital. The obstacles faced by nurses in providing education are lack of training on the latest science, nurses' unpreparedness in providing education. When the patient and family come to the hospital, nurses only provide verbal explanations about what family caregivers should do at home and at the Wava Husada hospital using media in the form of leaflets, where the media is less effective in providing education (Muhsinin et al., 2019; Setiyawati et al., 2022; Sutoto & Utarini, 2019).

Health education includes the process of changing the behavior of individuals, groups and communities to be more independent in achieving a healthy life by changing habits. In providing health education, nurses must have delivery techniques that are wise and easily accepted by patients or family caregivers (Bakri et al., 2020).

In this research, researchers provide education in the form of folding booklets, because in the research journal, it is stated that booklets have the advantages of being described more fully and in detail, can be stored longer, and are easy to carry. Meanwhile, leaflets have the advantage of being easy to carry and compact. Booklets and leaflets have their respective advantages. However, it was found that booklets were more effective because they had the advantage of increasing the level of knowledge even though they were not delivered directly (Napaole et al., 2020). Meanwhile, in Dini's research (2021), research using booklets and videos had the same level of effectiveness, namely 0.000 (Dini Rahayu et al., 2021).

From the results of a preliminary study at the Wava Husada Hospital stroke installation, 124 people were hospitalized from January – February 2-23, where in January there were 66 people and in February there were 58 people.

In the description above, this is one of the important reasons for conducting further research regarding "The Effect of folding booklet education on the level of knowledge of family caregivers of stroke patients".

2. Methods

The design used in this research is a quasy experiment which aims to reveal the influence and differences in the design used, namely the one group pretest posttest design. The population of this study was 124 family caregivers of stroke patients at Wava Husada Hospital. The sample consisted of 30 family caregivers using accidental sampling technique, with inclusion criteria (1) family caregivers for acute phase stroke patients, (2) family caregivers who can read and write, (3) physically and mentally healthy, (4) willing to be respondents.

The research was conducted at the Wava Husada Hospital which was carried out on 6 February – 19 February 2023. This research has received a letter of ethical test results from KEPK Muhammadiyah University of Malang No.E.5.a/024/KEPK-UMM/I/2023.

After receiving the ethical test results letter, the researcher approached the respondents, introduced Siri to each respondent and provided an explanation of the aims and objectives of the research, and provided an informed consent sheet to the respondents. Next, the researcher distributed questionnaires for pretest assessment and provided an explanation to respondents of the procedure for filling out the pretest and would be provided with education via folding booklet

media, and at the final stage a posttest would be given. The questionnaires that have been answered by each respondent are then collected, then the number of correct and incorrect scores from the pretest questions is calculated. Next, education is carried out through foldlet media (folding booklet). And finally, the posttest questions are given, which are the same as the pretest questions, there are 17 questions. Next, the summation and average results are analyzed with several score categories 12 – 17 (good) 76% - 100%, 10 – 11 (fair) 56% - 75%, 0 – 9 (poor) <55%.

This research uses a questionnaire from research by [Muhsinin \(2018\)](#) and has been tested for validity and reliability with valid and reliable questionnaire results with $\alpha = 0.923$. This research questionnaire contains 17 questions, including the meaning of stroke, signs and symptoms, types of strokes, risk factors, complications, first treatment when a stroke occurs, treatment that families can do at home. The value of each question is: good was rated 1 and wrong got a score of 0. This questionnaire was used by researchers to identify the effect of folding booklet education on the level of knowledge of family caregivers of stroke patients who were in the acute stage at Wava Husada Kepanjen Hospital.

3. Results and Discussion

This research was conducted on 30 family caregivers of stroke patients at the stroke installation at Wava Husada Kepanjen Hospital which was carried out on 6 February - 19 February 2023. It was obtained from 30 family caregivers of stroke patients, on average 36 - 45 years old, female, with a high school education, the majority of family caregivers have working status, and (90.0%) family caregivers have no experience in caring for stroke patients. This is because the majority of patients have a 1st stroke. Demographic data of respondents is shown in table 1. Results of the analysis of the level of knowledge of family caregivers in caring for patients at home before and after the foldlet (folding booklet) education is in table 2. The frequency of the family caregiver's knowledge level before the foldlet (folding booklet) education is in table 3 and in table 4 there is the frequency of the family caregiver's knowledge level after the foldlet (folding booklet) education, in table 5 there are the results of the Wilcoxon test and finally in table 6 there are ranks from the Wilcoxon test.

Table 1 Demographic data of family caregivers of stroke patients (N=30)

	Frequency (n)	Mean (min-max)	Std. deviation
Pre Test	30	2.27 (7-16)	0.740
Post Test	30	2.87 (8-17)	0.434

Table 2 Family caregiver's level of knowledge before and after the intervention

No.	Variable	Frequency (n)	Percentage (%)
1.	Gender		
	Man	9	30.0%
	Woman	21	70.0%
2.	Age		
	17 – 25 years	6	20.0%
	26 – 35 years	3	10.0%
	36 – 45 years old	11	36.7%
	46 – 55 years old	4	13.3%
	56 – 65 years old	3	10.0%
3.	66 – so on	3	10.0%
	Education		
	elementary school	8	26.7%
	Junior High School	4	13.3%
	Senior High School	15	50.0%
4.	College	3	10.0%
	Work		
	Doesn't work	13	43.3%
	Work	17	56.7%
5.	Caring Experience		
	No	27	90.0%
	Yes	3	10.0%

It can be said that the number of family caregivers was 30 people with the average score for family caregivers during the pretest, before being given education through folding booklet media, was 2.27 with the lowest score being 7 while the highest score was 16 with a standard deviation of 0.740. In the post-test with a total of 30 family caregivers, the average score after being given education through folding booklet media was 2.87, 8 for the lowest score and 17 for the highest score, with a standard deviation value of 0.434.

Table 3 Frequency of family caregiver's level of knowledge before intervention

Pre Test	Frequency (n)	Percentage (%)
Not enough	5	16.7 %
Enough	12	40.0 %
Good	13	43.3 %
Total	30	100%

Research result data shows that the majority of family caregivers before being given education in the form of a folding booklet lacked knowledge about stroke, amounting to 5 people (16.7%). Meanwhile, family caregivers with a moderate level of knowledge were 12 people (40.0%), and family caregivers with a good level of knowledge were 13 people (43.3%). From research table 5.3, it is clear that the majority of family caregivers had a good level of knowledge before folding booklet education was carried out, this is because the majority of family caregivers' last education was high school (50.0%). A person with a high level of education can make it easier to obtain information, resulting in extensive knowledge and the ability and skills to care for stroke patients. And from the demographic data, it was found that 17 family caregivers worked (56.7%), this had a significant influence on the level of knowledge of family caregivers in answering the pretest questions because someone who worked could have a positive outlook and could focus on caring for stroke patients.

Table 4 Frequency of family caregiver knowledge level after intervention

Post Test	Frequency (n)	Percentage (%)
Not enough	1	3.3 %
Enough	2	6.7 %
Good	27	90.0 %
Total	30	100%

Table 5 Wilcoxon test

<i>PretestAnd Posttest</i>	Z	pvalue
	-3,448	0.001

Table 6 Ranks

	N	Mean Ranks	Sum Of Ranks
Pretet - Posttest	0a	0.00	0.00
Negative Ranks			
Positive Ranks	14b	7.50	105.00
Ties	16c		
Total	30		

The Wilcoxon test results in table 5 which use analysis with the SPSS 26.0 application illustrate that there are differences in the level of knowledge when given the pretest and after being given education through folding booklet media and family caregivers given the posttest. This is based on the p value ($0.001 < \alpha (0.05)$), which means H1 is accepted. Based on the Wilcoxon test results above, it can be concluded that H1 is accepted and H0 is rejected. H0 is rejected if the probability value is <0.05 , meaning there is an influence of folding booklet education on the level of knowledge of family caregivers of stroke patients at Wava Husada Kepanjen Hospital. Pretest and posttest hypothesis testing, if converted to Z value then the value is -3.448.

In table 6, it can be seen that in the pretest and posttest there were no negative ranks (rank values decreased), namely 0 people and the mean rank value or average rank was 0.00 and the sum of ranks or number of ranks was 0.00. In the positive ranks (ranks whose values increase) there are 14 people with a mean of rank or average of 7.50 and a sum of ranks or total ranking of 105.00. The tie or rank with the same value is 16 people for a total of 30 family caregivers.

3.1 Knowledge level of family caregivers of stroke patients before fodlet (folding booklet) education

The results of the research showed that 30 respondents were each given a pretest and post-test and given education in the form of a folding booklet. For each respondent, they each work on the pretest and post-test questions for 15 - 20 minutes and then are given education by the researcher in the form of a folding booklet. secondly, a post-test was given to determine whether the level of knowledge of family caregivers of stroke patients had increased or not.

The research results in table 5.3 show that the majority of family caregivers had insufficient knowledge of stroke before being given education through folding booklet media, 5 people (16.7%). Family caregivers with a moderate level of knowledge were 12 people (40.0%), and family caregivers with a good level of knowledge were 13 people (43.3%). The majority of family caregivers had a good level of knowledge before being given education through folding booklets, this is because the majority of family caregivers had a high school education, namely 15 people (50.0%).

The level of education can determine a person's knowledge to be broader. Someone with high knowledge tends to have a positive perspective regarding caring for sick family members. This is different from family caregivers who have a low level of knowledge which will give rise to feelings of emotional distress. This is because the higher a person's level of education, the higher their level of knowledge and the ability to use and choose appropriate health facilities in terms of treatment and care for stroke patients, so that they can reduce the burden on family caregivers because they can get health more quickly and precisely. The majority of family caregivers with a high school education level have a moderate level of knowledge (Chairani, 2015; Erwina et al., 2016).

From the research results, it can be seen that the majority of family caregivers are female, 21 people (70.0%). In Indonesia, women have a dual role in internal and external matters, an

example of internal matters is as housekeepers such as cooking, washing, sweeping and taking care of children, while in external matters, namely earning a living. so that in caring for sick families, women take more roles. The majority of family caregivers, 79.5% of stroke patients, are women because women have a high level of patience in doing various things compared to men, and are more dominant in taking care of sick family members (Daulay et al., 2021; Juita et al., 2020).

The results of the demographic data showed that 17 people had jobs (56.7%), work is a concept that cannot be separated from the organization, where it is a process to obtain information and responsibilities, work is one of the activities that takes up time so it has an influence on the family in providing home care (Farida, 2021).

3.2 Level of Knowledge of family caregivers of stroke patients after Foldlet Education (Folding Booklet)

Most of the family caregivers had a good level of knowledge, both 23 family caregivers who were given education and post-test directly and 7 family caregivers who were given post-test the next day. After being given education through folding booklets, the number was 27 people (90.0%). This proves that family caregivers have experienced an increase in the level of knowledge of caring for stroke patients at home, because the majority of family caregivers have no experience in caring for stroke patients, numbering 27 people (90.0%). Family caregivers with no experience caring for stroke patients at home tend to have a high enthusiasm for learning compared to those who have experience caring for stroke patients at home.

Based on this, family caregivers must be given involvement in care knowledge, especially in first care, health education, this is an important factor for families in their attitude to providing care for stroke patients. Stroke patients are very dependent on family caregivers during home care (Bakri et al., 2020; Nurhidayah et al. 2020).

The results of the demographic data of respondents show that the majority of family caregivers are aged 36 - 45 years, which is an average of (36.7%). According to the Ministry of Health, this age is late adulthood, in adulthood individuals begin to put aside their personal desires or even rights, because the most important interests and needs are the family so that family caregivers in late adulthood are more common. Family caregivers in adulthood are considered mature in life experience, have wisdom in making decisions, have rational thoughts, and most importantly, are able to control anger and have high tolerance towards other people (Hartati, 2015; Nuraenah et al., 2014).

It can be seen from the research results that providing folding booklet education is more effective than providing education only verbally. The need for extensive and complex education is not in line with the provision of health education received by family caregivers, whereas health education is an important element in increasing the family's knowledge and abilities as informal family caregivers. Education by providing a pretest and post-test as well as providing education before the post-test is given has the aim of increasing family caregivers' knowledge in caring for stroke patients at home (Panji Azali et al., 2021).

3.3 The Effect of Folding Booklet Education on the Level of Knowledge of Family Caregivers of Stroke Patients

There was an effect when education was given in the form of a folding booklet which was carried out for 1 - 2 days of research, 23 people were given education and a post-test the same day after being given the pretest and 7 people were given education the next day because there was a shift change in waiting and caring for stroke patients. Knowledge of family caregivers in the good category can avoid passive care, so that they can change the behaviour of each individual, group or community to achieve a healthy life.

Knowledge comes from various sources, not just the views of one individual and is used as a measure of a person's understanding of information. Good knowledge will be reflected in the caring attitude shown by the family caregiver. One of the influences of family caregivers'

knowledge in caring for stroke patients is their experience in caring for stroke patients. From the research results obtained, namely 90% showed that the patient had suffered a stroke for the first time (Fatmawati, 2020). Explanation is that family caregivers who have been providing care to patients for a long time will be proportional to their level of knowledge, therefore experience is also influenced by health information.

The research results show that education using folding booklets about patient care at home has a significant influence in increasing family caregivers' knowledge in caring for stroke patients at home. Where in the questionnaire regarding family caregivers' knowledge of caring for stroke patients at home, it contains information about the meaning of stroke, signs and symptoms of stroke, types of strokes, risk factors, complications, first treatment when a stroke occurs, and finally, treatment that families can do at home.

The benefit of providing folding booklets in this research is to provide systematic health education that integrates education to individuals and family caregivers not only during hospitalization but also extended care while at home. In the folding booklet there are pictures and writing, so that the folding booklet can be conceptualized according to the theme and material required. So, with this, family caregivers will dig up a lot of information and be able to recognize something from the pictures presented.

Family Caregiver provides an explanation that foldlets (folding booklets) are easy to carry anywhere, foldlet (folding booklet) media provides facilities in the form of a method that provides a combination of animated images and interesting explanatory points. Through folding booklet media, a person can easily understand health information because it is obtained with the eyes and hearing where an explanation is given by the researcher. Folding booklets have the advantage of providing clearer explanations of points compared to leaflets. This can provide motivation and focus for family caregivers in caring for stroke patients at home, so that it does not cause a burden on caring for stroke patients at home

In the analysis results obtained using the Wilcoxon test, the result was p value = 0.000, where p value $< \alpha$ 0.05, which means there is a significant influence between foldlet (folding booklet) education on the level of knowledge of family caregivers in caring for stroke patients at home at Wava Hospital Husada Kepanjen.

According to the explanation above, providing education using folding booklet media by providing a pretest and post-test can increase the level of knowledge of family caregivers in caring for stroke patients at home and provide support to stroke patients to provide positive things so that they recover quickly. Therefore, it is best to provide education using media, especially folding booklets, in stages and should be given to every patient and family caregiver who occupies the inpatient room at the stroke installation so that family caregivers can provide positive support and care for stroke patients at home.

4. Conclusion

The results of this research in the form of folding booklet education and a questionnaire regarding stroke knowledge showed that the majority of family caregivers in this study had an increased level of knowledge, although some others still had insufficient or sufficient levels of knowledge. As in the data obtained during the pre-test, the majority of family caregivers had a good level of knowledge, namely 13 people (43.3%). Then after being given education through folding booklet media which was carried out for 1 - 2 days there was a significant increase, namely the good aspect which had the highest average score in the level of knowledge of caring for stroke patients at home (90.0%) with a total of 27 people. This research proves that intervention with education through foldlet media (folding booklet) has a significant influence on data results and significance (sig) or p value $0.001 < \alpha$ (0.05), so that there is an influence of foldlet (folding booklet) education on the level of knowledge family caregivers of stroke patients at Wava Husada Kepanjen Hospital.

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