Clinical Learning for Students with the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) in Improving the Quality of Life and Family Ability in Helping the Adaptation of Stroke Patient Training

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Abstract

Introduction: *Clinical learning aims to make students independent for the demands of development and the need for competitiveness. However, until now, there has been no clinical learning that can provide learning experience in the field, especially in community-based families of stroke patients that can improve not only knowledge, but also the affective and psychomotor skills of nursing students. This research aims to provide student clinical learning with the concept of Caregiver Empowerment Program Based-On Adaptation Model (CEP-BAM) in improving quality of life and family ability in helping adaptation of stroke patient training.*

Methods: *The research used a quasi-experimental study design with a pretest and posttest in the intervention and control groups. Research instruments: Student Knowledge Level Questionnaire, WHOQOL-BREF, Family Role and Responsibilities Instrument. The sample consisted of 2nd semester nursing students (ners profession) and nuclear family members of stroke patients, the 1st attack who were in the rehabilitation stage of 60 respondents (intervention and control) with simple random sampling. Data were analyzed with Wilcoxon signed ranks test and MANOVA. The research was carried out in 4 health center where nursing students practiced for their clinical practice*

Results: *The p-value of 0.001<0.05 in all groups which means that there is a difference in the average*

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value of the quality of life and the ability of stroke patients' families between the intervention group and the control group.
Conclusions: *There is a difference in the average value of the intervention and control groups before and after each intervention.*

Keywords: *Clinical learning; Caregiver empowerment; Model adaptation; Stroke*

INTRODUCTION

The clinical learning process aims to empower learners as a learning community to achieve the expected competency goals where the competencies developed in this clinical learning have been adapted to the demands of development and competitiveness needs, complementing educational resources especially academic staff, educational hospitals, and nursing practice areas as well as educational laboratories (Nursalam et al., 2019). However, until now there has been no clinical learning that can provide learning experience in the field, especially for community-based families of stroke patients that can improve not only knowledge, but also affective and psychomotor skills of nursing students.

Stroke causes a burden especially on the family of the sufferer. Stroke sufferers will experience the inability to meet daily needs due to decreased physical mobility (Saputra et al., 2019). A total of 18.5% of stroke sufferers need total assistance in their daily activities, even after five years of the attack, 15.9% of sufferers still need help to meet their daily needs, causing the sufferer to become dependent on their family members (Dharma et al., 2020). The family's burden will increase due to limited knowledge and skills to treat stroke patients at home (Hekmatpou et al., 2019). There are many interventions to use for family empowerment to care the stroke patients in community. However, a little number of study that implement the intervention of family empowerment in clinical practice of nursing students. Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) is one of the intervention to empower the family to care the stroke patient in community. Nursing students can use this model when practice in community for stroke patients. CEP-BAM is an intervention model that was developed by Dharma et al. (Dharma et al., 2021).

This research aims to provide student clinical learning with the concept of Caregiver Empowerment Program Based-On Adaptation Model (CEP-BAM) in improving quality of life and family ability in helping adaptation of stroke patient training.

METHODS

Study Design

This research used a quasi-experimental pretest - posttest with control group design.

Population, Samples, and Samplin

The population used in this research was an accessible population, that is, a population that meets the research criteria and can usually be reached by researchers from their group (Nursalam, 2018). The sample in this research was divided into 2, namely students of the nursing profession in second semester to measure the level of knowledge before and after being given clinical learning and the second respondent is the family of stroke patients to see the quality of life and abilities of stroke patients as well as evaluate the affective and psychomotor skills of students when they are sent to the field

based community. The criteria for inclusion of families of stroke patients were 1) Respondents are core/main family members of stroke patients with a diagnosis of Ischemic Stroke or Hemorrhagic Stroke of the first attack; 2) The respondent's family members have entered the rehabilitation stage and are outpatients; 3) The respondent's family member (stroke patient) has a physical disability that requires assistance in fulfilling the basic needs of screening using Barthel's index (Barthel's value <11); 4) Family members affected by stroke aged 46-60 years; and 5) Respondents can read and write. The sampling technique in this research was simple random sampling, in order to prevent a dropout rate of 10%, 30 respondents were selected for each group with a total sample of 60 respondents.

Instruments

The research instrument used was a questionnaire to measure the level of knowledge of professional nursing students by developing a questionnaire from Agianto, et al (2019) which consisted of 15 question items. The questionnaire has been tested for validity (r count=0.678) and has had reliability test results (Cronbach alpha 0.976). The questionnaire has also been tested by experts with an I-CVI result of 0.87. Respondent Screening Instrument (Barthel's Index), Quality of Life Instrument (WHOQOL-BREF) and Questionnaire to measure family roles and responsibilities in the care of stroke patients is the development of a questionnaire from Agianto, et al (2019) which consists of 24 question items (14 question items for roles and 10 questions for responsibilities). The questionnaire has been tested for validity (r count: 0.484-0.849) and has had reliability test results (Cronbach alpha 0.944). The questionnaire has also been tested by experts with an I-CVI result of 0.84.

Procedure

Students were divided into 2 groups, namely the intervention group and the control group. The intervention group received clinical learning with the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) while the control group received standard clinical conference learning regarding stroke. After clinical learning is provided for 2 full days by training via Zoom. The nursing students entered to the community and visit door to door to gathered the data at homes of residents who have stroke patients. Data on stroke patients was obtained through the health service. Students who have been divided into 2 groups, namely the intervention and control groups, accompany each family of a stroke patient to provide intervention from the clinical learning that

Table 1. Level of Knowledge of Students Getting Clinical Learning (n = 60)

Groups		*Pre-test*			*Post-test*			*p-value*
		n	%	(Mean ± SD)	n	%	(Mean ± SD)	
Intervention	Low	2	6.7	10.7 ± 2.373	0	0	10.23 ± 2.269	0.000
	Medium	8	26.3		0	0		
	High	20	67		30	100		
	Total	30	100		30	100		
Control	Low	2	6.7	14 ± 1.438	0	0	11.13 ± 1.676	0.000
	Medium	12	40		12	40		
	High	16	53.3		18	60		

has been provided previously. Intervention group students assisted stroke families in the intervention group, and control group students assisted families of stroke patients in the control group. The intervention group received intervention in the form of the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM), while the control group received standard health education regarding stroke. It was given for 3 weeks with monitoring and evaluation card guidelines.

Data Analysis

Descriptive analysis was carried out to obtain a description of the characteristics of the respondents. The results of the analysis are in the form of frequency distribution, average value, median and standard deviation. Inferential analysis was carried out after getting the normality of the data. If the data is normal, use the independent t-test and paired t-test. If the data is not normal, use the Wilcoxon Signed Ranks Test and Mann Whitney U Test, as well as the Manova test to see statistically significant differences in several variables that occur simultaneously between two levels in one variable.

Ethical Clearance

This research has been declared ethically with the number: 092/KEPPKSTIKSC/VI/2023 on June 15 2023 by the Health Research and Development Ethics Commission of the Sint Carolus College of Health Sciences (STIK SC), Jakarta

Table 2. Quality of Life for Families of Stroke Patients Before and After Receiving Intervention from Clinical Learning by Students (n = 60)

Groups		Pre-test			Post-test			*p-value*
		n	%	(Mean ± SD)	n	%	(Mean ± SD)	
Intervention	Very Bad	4	13.3	2.33 ± 0.711	0	0	4.2 ± 0.551	0.000
	Bad	12	40		0	0		
	Medium	14	46.7		2	6.7		
	Good	0	0		20	66.7		
	Very Good	0	0		8	26.7		
	Total	30	100		30	100		
Control	Very Bad	7	23.3	2.20 ± 0.805	0	0	4.2 ± 0.759	0.000
	Bad	10	33.3		0	0		
	Medium	13	43.3		5	16.7		
	Good	0	0		10	33.3		
	Very Good	0	0		15	50		
	Total	30	100		30	100		

RESULTS

The results of this study are described in 4 tables, namely student knowledge, quality of life of families of stroke patients, abilities of families of stroke patients and final multivariate analysis with MANOVA.

In table 1, it is explained that

Table 3. Ability of Stroke Patients' Families Before and After Receiving Intervention from Clinical Learning by Students

Group		*Pre-test*			*Post-test*			*p-value*
		n	%	(Mean ± SD)	n	%	(Mean ± SD)	
Intervention	Not Good	19	63,3	1.37 ± 0.490	1	3.3	2.8 ± 0.484	0.000
	Good	11	36.7		4	13.3		
	Very God	0	0		25	83.3		
	Total	30	100		30	100		
Control	Not Good	17	56.7	1.43 ± 0.504	10	33.3	1.87 ± 0.730	0.000
	Good	13	43.3		14	46.7		
	Very God	0	0		6	20		
	Total	30	100		30	100		

students are divided into 2 groups. The intervention group received clinical learning with the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) while the control group received standard clinical conference learning regarding stroke. In the intervention group, it was found that as many as 20 (67%) students had a high level of knowledge with a mean of 10.77 at the time of the pretest. 30 (100%) respondents with a mean of 10.23. The same thing happened in the control group, it was found that 16 (53.3%) students had a high level of knowledge with a mean of 14 at the time of the pretest then after being given standard clinical conference learning about stroke, the students' knowledge remained high but did not increase significantly namely 18 (60%) respondents with a mean of 11.13.

In the intervention group, it was found that 14 (46.7%) families of stroke patients had a moderate quality of life with a mean of 2.33 at the time of the pretest and then after being given the Caregiver Empowerment Program Based-on Adaption Model (CEP-BAM) intervention by students for 2 week, the quality of life of families of stroke patients increased to good by 20 (66.7%) and very good by 8 (26.7%) with a mean of 4.20 when the posttest was carried out. The same thing happened in the control group, it was found that as many as 7 (23.3%) families of stroke patients had very poor quality of life with a mean of 2.20 at the time of the pretest and then after being given standard health education about stroke by students for 2 weeks, The quality of life of families of stroke patients continued to improve to very good by 15 (50.0%) and good by 10 (33.3%) with a mean of 4.20 at posttest.

Table 3 explains that in the intervention group, it was found that 19 (63.3%) families of stroke patients had poor ability with a mean of 1.37 at the time of the pret-est and then after being given the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) intervention by students for 2 weeks, the ability of families of stroke patients increased to very good by 25 (83.3%) with a mean of 2.8 during the post-test. The same thing happened in the control group, it was found that as many as 17 (56.7%) families of stroke patients had poor ability

Table 4. Results of Multivariate Analysis of Student Clinical Learning Tests Using CEP-BAM in Improving Quality of Life and Family Capabilities

Variables	Intervention Group	Control Group	*Box's Test*		*p-value*
	(Mean ± SD)	(Mean ± SD)	*Box's M*	*Sig.*	
Family Quality of Life					0.001
Before	2.33 ± 0.711	2.20 ± 0.805			
After	4.20 ± 0.551	2.90 ± 0.759			
Family Capability			21.232	0.33	0.001
Before	1.37 ± 0.490	1.43 ± 0.504			
After	2.80 ± 1.87	1.87 ± 0.730			

with a mean of 1.43 at the time of the pre-test and after being given standard health education about stroke by students for 2 weeks, their ability stroke patients' families still increased to very good by 6 (20%) and good by 14 (46.7%) with a mean of 1.87 during the post-test.

The Manova assumption test is the homogeneity of the variance and covariance matrices, if the test value obtains a significance value > 0.05. The test results show that the Box's M value is 21.232 with a significance of 0.033. Because the significance value is > 0.05, the covariance matrix is homogeneous. The P-value describes an overview of univariate model testing. The p-value is significant for all groups, the value is 0.001 < 0.05, which means there is a difference in the average value of quality of life and family abilities of stroke patients between the intervention group and the control group. From the results of the analysis above, it can be concluded that there is a difference in the average value of the intervention and control groups before and after each intervention.

DISCUSSION

The results of the study showed a significant increase in terms of student knowledge in the intervention group and the control group when measurements were taken before and after giving clinical learning. Specific research discussing clinical learning of the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) has never been carried out, but when referring to the contents of the package of the CEP-BAM learning method which consists of pre-education, continuous intervention and monitoring and evaluation combined with monitoring and evaluation cards as a benchmark for providing care in the field will show positive results on learning outcomes (Dharma et al., 2018).

The intervention provided by students using the Caregiver Empowerment Program Based-on Adaption Model (CEP-BAM) method significantly reduces the burden of care carried out at home (Rumiati et al., 2021). The burden of care for stroke patients is significantly related to economic health, marital status, number of children, hours of care, days of care and the relationship between caregiver and patient, while quality of life has a significant relationship with health status (Setiawan et al., 2017).

Another study conducted by Okwari et al. (2017) explained that the interventions provided with more focus on the effectiveness of complete and ongoing

information support with home visits will reduce not only anxiety but also be able to improve the quality of life of caregivers of stroke patients (Okwari et al., 2017). Other research, namely Dayhoul et al. (2020) explained that interventions that are educational in nature for stroke patient care for stroke caregivers at home can be used as a method of clinical learning for community-based health worker students because they have the same focus, namely direct field practice which has a focus on family empowerment (Deyhoul et al., 2020). Previous research by Dayhoul et al. (2020) observed the provision of interventions by students using the Family Member Education Program (FMEP) intervention to increase the ability of post-stroke patients to carry out activities of daily living (ADL's) and reduce the burden on caregivers in providing care to post-stroke patients. In intervention research with CEP-BAM, just like research with the FMEP method, it was proven to be significantly effective in reducing cognitive disorders, levels of anxiety, depression and improving quality of life but also able to involve students with clinical learning experiences and learning experiences as a process of transformation into a professional nurse, by providing opportunities for students to adapt to their role as community-based professional nurses for families of stroke patients (Dorant & Krieger, 2017; Judha, 2020) .

From the results of multivariate analysis, it can be concluded that there are differences in the average scores of the intervention and control groups before and after each intervention is carried out. CEP-BAM) as well as standard health education regarding stroke by students for 2 weeks can improve the quality of life and family abilities of stroke patients. This is because educational intervention in any form is also a primary need for caregivers in providing care to post-stroke patients. When a family member has had a stroke, the caregiver has a big role in providing care for the sick family member. The role of caregivers as part of the patient support system is very important in improving the quality of life of post-stroke patients. Caregivers through nursing profession students must be empowered to care for and guide patients to adapt to life after stroke. Therefore, it is very important to provide knowledge and skills to caregivers in helping patients adapt to post-stroke life (Lu et al., 2022).

This research should have been carried out for 6 months, in accordance with Dharma's research (2018), but due to time constraints this research was carried out for 2 weeks by third semester nursing professional students. Data collection was carried out door to door, however, to control the course and effectiveness of this research, the research team provided assistance during data collection and used a modified CEP-BAM monitoring and evaluation (Monev) card for 2 weeks.

CONCLUSIONS

The results of research on student clinical learning using the Caregiver Empowerment Program Based-on Adaption Model (CEP-BAM) in improving the quality of life and the family's ability to help adapt stroke patients' exercise show a significant positive influence related to increasing the results of students' measured knowledge scores. from a cognitive perspective as well as quality of life and family abilities which are measured in terms of affective and psychomotor, show specific values. This is proven by the results of a statistical test, the Wilcoxon test, which shows a significance value of 0.000 or less than 0.05 (sig. < 0.05), which means that Ha is accepted, which means the quality of life

and the family's ability to facilitate and help adapt to training. stroke patients increased with student clinical learning based on the Caregiver Empowerment Program Based-on Adaptation Model (CEP-BAM) concept.

CONFLICT OF INTEREST

There is no conflict of interest in this research.

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