The Effects of Education on Nurses' Attitudes Towards Family-Centered Care in ICU Room Patients with Heart Failure

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Abstract. People with heart failure need support and family presence to improve their quality of life. Nurses' views about family-centered care may be changed if they were taught about the idea and encouraged to support its implementation. In addition, families might provide help to ill relatives. This study aims to investigate the influence of education on nurses' attitudes about family-centered care for intensive care patients with heart failure. An experimental design with a pretest-posttest control group was employed in this investigation. The experimental group received educational treatment in the form of booklet-based lectures. The participants in this study were 32 nurses from a Malang hospital's intensive care unit. In the experimental group, the Wilcoxon test indicated a significant difference in nurses' attitudes toward family-centered care (p-value 0.000), but no similar difference in the control group (p-value 0.083). The Mann Whitney test revealed that following instruction, nurses' views about family-centered care improved significantly in both the experimental and control groups (p-value 0.039). There is a significant effect of family centered care education on the attitude of nurses in the CVCU room for heart failure patients at Malang Hospital. Family-centered care in critical care from the perspective of nurses, education has an effect on people with heart failure.

Keywords: Education · Family-Centered Care · Nurses' Attitude · Heart Failure

1 Introduction

Heart failure is a condition of abnormal heart structure function so that the distribution of oxygen needed for tissue metabolism fails [1]. In 2018, Indonesia had a prevalence rate of heart failure 1,5% [2]. Patients with heart failure need adequate adaptation and coping from the family so that nurses need to involve the family. In patients with cardiovascular disease, family support has an impact on self-care, adherence, mortality, and quality of life [3].

Family-Centered Care (FCC) is based on the premise that the family is at the core of care. FCC comprises four fundamental ideas, namely the first, the nurse respects knowledge, values, beliefs, and family culture; Second, the nurse and family communicate and share information about the patient's condition; thirdly, families are encouraged

I. Permana and E. Rochmawati (Eds.): ICOSI-HSN 2022, 55, pp. 191–200, 2022.
https://doi.org/10.2991/978-94-6463-070-1_24

to participate in nursing care and decision-making; fourthly, nurses and families work together to provide care. Implementation and evaluation [4]. When caring for patients, nurses should involve the family in providing daily nursing care so that the family can provide optimal support [5]. The concept of the FCC has been used in pediatric patients. The application of the FCC concept in hospitals, especially in developed countries, is well standardized, while in Indonesia it is not well standardized and many health workers, especially nurses, do not understand the concept of the FCC [6]. Therefore, nurses are required to further improve their knowledge and skills to optimally implement FCC in heart failure patients so that nursing care can run well. To achieve this, education is needed in the form of providing information about the concept of the FCC, so that nurses are able to apply the FCC in providing nursing care.

Involvement of family in heart failure nursing care has been demonstrated to reduce family stress, build family ties, and enable nurses to form deeper and more productive relationships with patients and their families [7]. The nurse's perspective regarding family roles and the value of family involvement in patient care determines whether or not the patient's family is involved. "evaluation of psychological items recorded in dimensions such as good vs poor or liked versus disliked" is how attitude is described [3]. A positive attitude toward family engagement is required for inviting and including the family in care, while a negative attitude is associated with lower family involvement [8]. It has been shown that including family members in heart failure nursing care reduces family suffering, strengthens family ties, and enables nurses to develop stronger interactions with patients and their families [9]. Based on the phenomenon above, where the application of FCC is mostly done on children patients, it has attracted the attention of researchers to conduct research on adult patients regarding the effect of education on nurses' attitudes about family-centered care in heart failure patients in the intensive care room of Malang.

2 Methods

This study employs a true experiment using a pretest-posttest control group design in which two groups are given a pre- and post-test. In addition, the experimental group received Family-Centered Care education, but the control group did not. Both groups were then given a posttest. Comparing the posttest results of the two groups, as well as the pretest and posttest results of the control group and the experimental group. After completing the posttest, the control group received Family-Centered Care education.

The research population used is nurses who work in the intensive care room at Malang Hospital. The sample was obtained using random sampling based on the inclusion criteria that had been defined, and the total of respondents in this study was 32. The sampling method in this study is probability sampling (random sampling) and assisted by the "Group Maker" application. Nurses with a least associate's degree and a minimum of one year of experience working in an intensive care unit met the inclusion criteria for this study. Nurses who were unable to participate in the study owing to illness, leave, or permission were excluded from consideration.

The Families Importance in Nursing Care-Nurse Attitudes questionnaire was used in this study to measure nurses' attitudes toward family-centered care [10]. Of the 26 statements tested, it shows that there are no statement items with $r \leq 0.444$ for this questionnaire, so it can be concluded that this questionnaire is declared valid. The reliability test results revealed a Cronbach alpha coefficient of 0.965. As a result, this questionnaire is both valid and reliable for use in this study.

One week before to educating about FCC, informed consent and a pretest were given to respondents in the control and treatment groups. The experimental group respondents received education about FCC from the appointed tutor for ±20 min and 10 min for the question and answer session. Following completing the post-test and receiving FCC education one week after the pretest, the responders in the control group completed the pretest. The experimental group received a post-test questionnaire from the researcher one week following the activity.

The Mann-Withney test was used to compare attitudes between the groups that received education vs the groups that did not receive education, and the Wilcoxon test was used to compare the differences between the results of the Pre-Post test in each group.

3 Results

Table 1 shows characteristic of respondent in this study. Based on Table 1, the most gender characteristics in the experimental group and the control group were women as many as 10 respondents (62.5%) in each group. The most data on the age characteristics of respondents aged 26–35 years were 11 respondents (68.8%) in the experimental group and 10 respondents (62.5%) in the control group. Characteristics data based on the level of education mostly have asssociate's degree, namely 13 respondents (81.2%) in the experimental group and 11 respondents (68.8%) in the control group. For characteristic data based on length of work in the experimental group the most with a range of 1–3 years, as many as 8 respondents (50%), while in the control group the most characteristic data based on length of work was in the range >5 years, namely as many as 11 respondents (68.8%). While the characteristics based on marital status obtained the most data, namely respondents who were not married as many as 12 respondents (75%) in the experimental group and as many as 13 respondents (81.2%) in the control group.

Table 2 shows the attitudes of the nurses in the two groups. In the experimental group after the intervention, 5 respondents (31.2%) had a very supportive attitude, an increase from before the intervention, namely 1 respondent (6.2%). A total of 10 respondents (62.5%) had a supportive attitude, increasing from before the intervention, namely 9 respondents (56.2%) and 1 respondent (6.2%) who had a less supportive attitude, less than before the intervention of 6 respondents (37, 5%). The table above also shows that the attitude of the control group that was not intervened did not change much from the results of the pre and post-test, namely 1 respondent (6.2%) who had a very supportive attitude, an increase from the previous 0 respondents, 10 respondents who had a supportive attitude. Respondents (62.5%) previously 11 respondents (68.8%) and respondents who had a less supportive attitude were 5 respondents (31.2%).

Table 1. Characteristic of Respondent

Characteristics	Experimental group		Control group		Total	
	n	%	n	%	n	%
Gender						
Man	6	37,5	6	37,5	12	37,5
Women	10	62,5	10	62,5	20	62,5
Age						
17–25 years old	2	12,5	1	6,2	3	9,37
26–35 years old	11	68,8	10	62,5	21	65,6
≥ 36 years old	3	18,8	5	31,2	8	25
Educational Level						
Associate's degree	13	81,2	11	68,8	24	75
Bachelor	3	18,8	5	31,2	8	25
Length of Work						
1–3 years	8	50	3	18,8	11	34,3
3–5 years	1	6,2	2	12,5	3	9,3
> 5 years	7	43,8	11	68,8	18	56,2
Marital status						
Single	4	25	3	18,8	7	21,8
Married	12	75	13	81,2	25	78,1
Total	16	100	16	100	32	100

Table 2. Nurse's attitude in Pre and Post-test of all groups

Variabel	Pretest		Posttest		P
	N	%	n	%	
Experimental group					0,000
Less supportive	6	37,5	1	6,2	
Supportive	9	56,2	10	62,5	
Very supportive	1	6,2	5	31,2	
Control group					0,083
Less supportive	5	31,2	5	31,2	
Supportive	11	68,8	10	62,5	
Very supportive	0	0	1	6,2	

Table 3 shows the Wilcoxon Test Results for the Experiment and Control Groups. Table 3 shows that the experimental group obtained a significant value of 0.000, suggesting that the pre-test and post-test values differed or that family-centered care education

Table 3. Wilcoxon Test Results in the Experiment Group and the Control Group

	Experimental group	Control group
P-value	0,000	0.083

Table 4. Mann Whitney test results between the experimental group and the control group

Nurse's attitude	Pretest	Posttest
p-value	0,649	0.039

Table 5. Cross tabulation results of length of work in the CVCU room with the attitude of the nurse in the experimental group

Length of Work	Less supportive	Supportive	Very supportive
	Pretest		
1–3 years	4	4	0
3–5 years	1	0	0
>5 years	1	5	1
Total	6	9	1
	Posttest		
1–3 years	1	6	1
3–5 years	0	1	0
>5 years	0	3	4
Total	1	10	5

had an effect. The significant value in the control group was 0.083, showing that the pre-test and post-test results were similar.

The results of the Mann Whitney test for the experimental and control groups are shown in Table 4. Based on the data presented above, it is possible to conclude that there is no difference in the initial state between the two groups; however, the post-test results obtained a significance value of 0.039 (p value < 0.05), indicating that there is a significant difference between the experimental and control groups (experiment).

Table 5 demonstrates the findings of the cross-tabulation between the length of time spent working in the CVCU and the nurse's attitude in the experimental group. Four respondents (25%) in the experimental group with 1–3 years of work experience had a less supportive attitude and four respondents (25%) had a supportive attitude at the time of the pretest, whereas one respondent (6.2%) had a less supportive attitude, six respondents (37.5%) had a supportive attitude, one and respondent (6.2%) had a very supportive attitude at the time of the posttest. For respondents with 3–5 years of work at

Table 6. Cross tabulation results of length of work in the CVCU room with the attitude of the nurse in the control group

Length of Work	Less supportive	Supportive	Very supportive
	Pretest		
1–3 years	0	3	0
3–5 years	2	0	0
>5 years	3	8	0
Total	5	11	0
	Posttest		
1–3 years	0	2	1
3–5 years	2	0	0
>5 years	3	8	0
Total	5	10	1

the time of the pretest as many as 1 respondent (6.2%) had a less supportive attitude, while at the time of the post-test 1 respondent (6.2%) had a supportive attitude. Respondents with a length of work >5 years at the time of the pretest as many as 1 respondent (6.2%) had a less supportive attitude, 5 respondents (31.2%) had a supportive attitude and 1 respondent (6.2%) was very supportive, and at the time posttest to as many as 3 respondents (18.8%) have a supportive attitude and 4 respondents (25%) are very supportive.

Table 6 shows the results of the cross tabulation of the length of working in the CVCU room with the attitude of the nurse in the control group. The data above shows the results of the pretest in the control group based on length of work for 1–3 years as many as 3 respondents (18.8%) had a supportive attitude, while at the posttest there were 2 respondents (12.5%) who had a supportive attitude and 1 respondent (6.2%) are very supportive. Two respondents (12.5%) had worked for 3–5 years at the pretest and posttest who had a less supportive attitude. Respondents with a length of work >5 years at the time of the pretest and posttest as many as 3 respondents (18.8%) had a less supportive attitude and 8 respondents (50%) supported.

4 Discussion

According to the results of the pretest research in the experimental group, 56.2% had a supportive attitude, while 5 respondents (31.2%) had a very supportive attitude at the time of the posttest. This demonstrates that nurses' attitudes improved after receiving education regarding family-centered care in the experimental group, compared to before they received education. During the pre-test, the majority of respondents (68.8%) had a supportive attitude, and there was no significant rise in the post-test findings in the control group. The findings revealed that the majority of nurses were supportive of the FCC's implementation. The advantage of this FCC practice is to improve the relationship

between caregivers and families by increasing family knowledge and skills so as to increase family involvement in caring for patients [11]. Family support can affect patient conditions such as self-care, death, and health-related quality of life among patients with heart failure [3].

Attitude is a belief about an object accompanied by certain feelings that provide a basis for someone to behave or respond in his way [12]. Most of the respondents have a supportive attitude, it could be due to several factors that can improve or change the attitude of the nurse, one of the factors that can change a person's attitude is knowledge. Providing knowledge about family centered care with education for nurses, can change the attitude of nurses so that nurses support the implementation of family centered care and families can provide support to their families who are sick. The patient's family support is very influential on the patient's condition. Families are people who play an important role in effective and sustainable self-management of patients with chronic diseases [13]. Family support encourages and strengthens self-management behaviors such as changing lifestyle, providing emotional, financial and instrumental support [14].

Based on the education level of the most respondents was associate's degree with 24 respondents (75%). According to previous study shows a correlation between supportive attitudes toward family involvement in patients with heart failure and the amount of education and employment experience [9]. The attitude of a nurse can be influenced by the education and work experience he has, the higher the education and work experience will make a person more broadly oriented [6].

Though family centered care may be employed in the critical care unit, the participation component of family focused care cannot be fully implemented since all patient care in the intensive care unit is managed by nurses. However, family involvement in decision making can be implemented. Other family-centered care concepts can be used, including dignity and respect, information sharing, and teamwork. As an example of implementing family centered care with dignity and respect, the nurse respects and listens to the opinions and choices of patients and families, and knowledge, values, beliefs, and cultural backgrounds are integrated in care planning and delivery. The application of the principle of sharing information is that nurses share information with families accurately and completely about the patient's condition, the care to be provided and decision making. The principle of family collaboration is involved in planning for patient care [11]. Family involvement can also be in the form of taking drugs to pharmacies. Nurse at Hospital in Malang has actually implemented several principles of family centered care, but they do not know that what they are doing includes the application of family centered care.

The results of the Wilcoxon test in the experimental group showed a significance value of 0.000, which means that there were differences in attitude values after being given education. The better the knowledge of nurses, the better the attitudes that nurses have in the implementation of family centered care [15]. In the control group, the result was 0.083, which showed that there was no difference between the pre-test and post-test scores of nurses' attitudes. The results of the Mann Whitney attitude test between the two groups obtained a significance value <0.05 (0.039) at the posttest and a significance value >0.05 (0.649) at the time of the pretest, it can be concluded that there is an effect of providing family centered care education on nurses' attitudes. This is in accordance

with Montgomery et al. (2016) study that there is a difference in pre-test scores with post-test nurses' attitudes after educational workshops and nurses have positive attitudes [16].

The education provided in this study is about family centered care, specifically providing information or understanding to nurses about the principles of family centered care and how to apply family centered care when caring for heart failure patients, so it is more than just basic understanding and concepts. According to Sveinbjarnardottir et al., (2011) changing attitudes can be done by coaching through education, so that knowledge will increase so that attitudes will be better [17]. The influence of education on nurses' attitudes could be due to the fact that most respondents are 26–35 years old and have work experience >5 years. The age range of 26–35 years includes early adulthood or young adults, at this age the ability and maturity to think and work increases. Age can affect the increase and development of a person's knowledge, the maximum age for achieving achievement trough information and knowledge is 18–40 years old [15]. Most of the respondents' experience of >5 years is a factor that affects attitudes, Patience and wisdom will be shown in early adulthood in a caring attitude towards the patient. The nurse will have a more caring attitude, because the nurse is experienced, more mature and more patient. Most of the respondents' experience of >5 years is a factor that influences attitudes [18]. According to Yugistyowati and Santoso [6] experience is defined as everything a person has directly encountered after gaining information via study and understanding [6]. A person will be more skilled in his field if that person has been working in that field for a long time. The length of work experience that nurses have will make them care about the environment [19]. That setting includes coworkers, other health care providers, patients, and the patient's family. Khojastehfar's research results show shows there is a link between work experience and nurses' attitudes, with nurses with greater work experience having a more positive attitudes [20]. This study's limitation is that it originally planned to conduct research at numerous hospitals in the city of Malang. However, due to hospital accreditation issues, only two hospitals could be used for the study. In addition, there are nurses who are sick and on leave, resulting in 3 nurses not being able to attend education about family-centered care.

5 Conclusion

Following education, there is a significant difference in the experimental group's attitudes. The attitudes of nurses in the control group about the implementation of family-centered care were not substantially different. With a significant value of 0.039 (0.05), there is an effect of education on family centered care on the attitudes of nurses in the CVCU room of heart failure patients at Malang Hospital.

Conflict of Interest

The authors declared that there were no potential conflicts of interest.

Funding

The authors did not receive support from any organization for the submitted works.

Ethic Approval

This research was carried out after obtaining ethical permission from the Health Research Ethics Commission of the Faculty of Medicine, Universitas Brawijaya No. 265/EC/KEPK/ 10/2019.

Author Contribution

All authors contributed equally to this research.

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