

# The Application of the Nurse's Critical Thinking Model in Implementing Nursing Care of Post Operative Patients

Yanti Sutriyanti 1<sup>st</sup>

Prodi Keperawatan Curup  
Politeknik Kesehatan Kementerian  
Kesehatan Bengkulu  
Bengkulu, Indonesia  
qinan\_fikri@yahoo.co.id

Misniarti 2<sup>st</sup>

Prodi Keperawatan Curup  
Politeknik Kesehatan Kementerian  
Kesehatan Bengkulu  
Bengkulu, Indonesia  
misniarti@rocketmail.com

Yossy Utario 3<sup>st</sup>

Prodi Keperawatan Curup  
Politeknik Kesehatan Kementerian  
Kesehatan Bengkulu  
Bengkulu, Indonesia  
yossyutario@gmail.com

**Abstract**—The demands of the workplace in carrying out the practice in the hospital can increase stress because it requires sharpness and speed in carrying out tasks, so to be competent are needed more professionally. This study aimed to apply the critical thinking model of nurses in carrying out nursing care to assess, diagnose, intervene, implement, and evaluate nursing. The research method used similar in the control group with pre and post-test design. The intervention was training about knowledge and applying critical thinking models in implementing nursing care for patients for five days. The sample was 30 nurses who worked in surgical in patients who carried out nursing care. The data was analyzed using a dependent test and multiple linear regression. The results showed there was a significant difference between the nurse's knowledge before and after being trained (p-value 0.001) whereas there was a significant difference between the application nurse's critical thinking before and after being trained (p-value 0.004). A slight difference was found in the diagnosis, nursing intervention, and evaluation. The characteristics of nurses that can influence the knowledge of nurses about 0.59% and which can affect the application about 15.2%, the rest is influenced by other factors. Nurses who are trained can improve critical thinking skills by 14.95. The application of critical thinking skills models can improve nursing care for post-operative patients.

**Keywords**— Critical Thinking Model, Assessment, Diagnosis, Intervention, Implementation, Evaluation

## I. INTRODUCTION

The demands of the community's need for health services in the 21st century, including the demands for

quality nursing care will be even higher. Supported by the Undang-Undang Keperawatan No. 38 tahun 2014 pada BAB I Pasal 3, which contains nursing arrangements aimed at improving the quality of nurses, improving nursing services, providing legal protection and certainty to nurses and clients, as well as improving public health degrees [1].

The demands of the workplace in carrying out nursing practices, especially in the emergency department can increase stress because it requires sharpness and speed in carrying out tasks [2]. It takes work more professionally by developing knowledge and skills to be able to be competent in meeting the demands of work in critical patients [3] while the results of the study found a significant difference in the perception of critical thinking between nurse educators who work in public universities and nurse educators in the private (P = 0.07) [4].

Based on the results of a preliminary study through observations made by researchers in the ward after post hospital surgery Kepahyang, the number of post-operative patients each year has increased. Observation of the implementation of nursing care in postoperative patients when assessment, diagnosis determination, determination of interventions, and implementation of nursing actions and evaluations do not describe the development of nurses' critical thinking skills. Whereas in carrying out nursing care it is necessary to increase nursing knowledge and services through critical thinking skills.

This study was conducted to determine the effect of the application of nurses' critical thinking skills models in carrying out nursing care for postoperative patients in surgical inpatients of the General Hospital of the Kepahyang.

## II. METHODS

This research used a quasi-experiment with the equivalent in control group with pre and post-test design. The sample of this study were thirty professional nurses who carry out nursing care for postoperative patients in the hospital's surgical room. The nurse was trained to apply critical thinking in carrying out nursing care in patients. Training was given for five days. Then the measurement of pre and post-training knowledge and measurement of the implementation of pre and post implementation of nursing care in patients. Knowledge measurement used

questionnaires and application by observation. The analysis was used to find the middle value, frequency distribution, the difference value using a different dependent test T-test, and look for influential factors using multiple linear regression.

**III. RESULT**

**1. Respondent characteristics**

The majority sex were women (70%), education level of nursing bachelor degree (ners) (70%), marital status (97%) were mostly married and employment status of most (97%) Civil Servants. Average age is 32 years. The length of work of nurses in the operating room on an average of 3 years. As well as the length of work of nurses at the hospital on an average of 8 years.

**2. Overview of the application of nurses' critical thinking as well as differences before and after the application of critical thinking nurses in carrying out nursing care (Table I)**

**TABLE I. THE APPLICATION OF CRITICAL THINKING NURSES IN CARRYING OUT NURSING CARE**

Variable	Result		
	Mean ± SD	P value	n
Assessment			30
Pre	28.17±3.47		
Post	30.37±2.58		
Diagnosis			30
Pre	12.47±1.73		
Post	13.37±1.90		
Nursing interventions			30
Pre	25.83±3.90		
Post	27.70±3.22		
Nursing implementation			30
Pre	12.73±2.31		
Post	16.73±2.03		
Nursing Evaluation			30
Pre	8.20±2.15		
Post	9.57±1.45		
Knowledge			30
Pre	10.33±2.45	0,001	
Post	16.57±2.31		
Application of skills			30
Pre	78.03±10.48	0,004	
Post	84.37±7.00		

Table I shows average differences that have Table 2.1 shows average differences that have more than two values are found in the application of critical thinking when assessing and implementing nursing actions. The results of *dependent T test oftest* knowledge value  $0.01 < \alpha 0.05$ , and the results of *dependent T test* application of p-value  $0.04 < \alpha 0.05$ . It can be concluded that there is a significant difference between pre and post training knowledge and the significant difference between pre and post application of nurse in implementing nursing care.

**3. Multiple linear regression analysis characteristics of the application of critical thinking nurses in implementing nursing care (Table II)**

**TABLE II. ANALYSIS CHARACTERISTIC OF THE APPLICATION OF CRITICAL THINKING NURSES IN IMPLEMENTING NURSING CARE**

Variable	Result			
	P Value	R	R Square	Adjusted R Square
Constants		0.390	0.152	0.025
Gender	0.489			
Age	0.473			
Education level	0.522			
Working period at hospital	0.359			
Working time in the room	0.301			

Table II shows the coefficient of determination (R square) of 0.152, it means that the five characteristics of nurses explain the variable of application of nurses to think critically when implementing nursing care in postoperative patients by 15.2%, while the rest is explained by other factors, namely: education, training, habits/ routines and experiences clinical practice.

**IV. DISCUSSION**

**1. Characteristics of nurses**

The results of this study have not been able to compare the ability of critical thinking skills between men and women because the number of female nurses (70%) is more than male nurses. The proportion of nurses who tend to think critically is more female than male [5] while the other research explains that the ability to think critically is not influenced by gender [6].

The education level of nurses is mostly nursing bachelor degree (ners) (70%). The results of this study have not been able to compare the ability of critical thinking skills between education with a bachelor's degree in nursing and nursing bachelor with ners, because education with a nursing background without ners is more.

The results of the age correlation contributed not significantly (p-value 0.473). The results of this study are in line with research; there was no significant relationship between age and quality of nursing care [5]. The results of this study are not in line with the results of research shows that the factors that most influence the ability of a nurse to provide nursing care in addition to work experience is age. [7]. The average age of a nurse is 32 years, according to Erikson, the age range of 25 - 45 years is the stage of development of generativity versus stagnation, where one pays attention to ideas, the desire to share knowledge, and increase creativity.

The length of work of nurses in a post-operative patient care room is an average of 3 years. The results of the correlation of multivariate analysis of the length of work of nurses showed a meaningless contribution to critical thinking (p-value 0.301). The results of this study are in line with the research; there is no longer working relationship with the quality of nursing care [5].

A person is more work period, and more experience will increase clinical skills [8]. The practical experience will add to the clinical learning experience where this is needed to fulfill decision-making skills [9] whereas the other study suggests that exposure to clinical problems in the field of nursing practice provides nurses with the opportunity to apply and familiarize their skills so that someone who ignores his critical thinking skills will increasingly blunt his skills [10].

## 2. Application of critical thinking nurses in carrying out nursing care for postoperative patients.

The application of critical thinking in carrying out nursing care in postoperative patients is mostly made when conducting an assessment and taking nursing actions. Assessment is the initial stage carried out by nurses in carrying out their care. Appropriate studies can find problems, analyze problem-solving, and make conclusions and follow-up [11]. Different opinions expressed that there is no correlation between critical thinking and decision-making ability [12]. Whereas the other study states that nurses make decisions in every intervention they do, while nurses also plan and provide care. The effectiveness and accuracy of decision making require proficiency in collecting data. Nursing actions performed on patients require critical thinking because critical thinking when performing nursing actions can provide a rapid response to changes that occur. Nurses who have critical thinking skills when performing nursing actions will show a confident, conceptual, creative, flexible, curious, open-minded, diligent and reflective attitude [13].

There is a significant difference between the application before and after being trained by critical thinking nurses when carrying out nursing care for patients after surgery. The application of critical thinking models when implementing nursing care is adapted to the local culture by developing a feeling model, vision model and examine model. This model can help nurses carry out nursing care well. There is a significant relationship between critical thinking and nurse response time with the quality of nursing care [14]. Nurses who think critically have six times the opportunity to demonstrate the quality of good nursing care. The results of this study are in line with the research which states that his research shows a relationship between critical thinking and the quality of nursing care [5].

Critical thinking in nursing is a critical component of professional accountability. Nurses who have critical thinking skills will demonstrate a confident, conceptual, creative, flexible, curious, open-minded, diligent and reflective attitude.

## 3. Nurse characteristic factors that influence the knowledge and critical thinking skills of nurses in carrying out nursing care

The research results test the correlation of five variables characteristics of gender, age, level of education, overall length of work, and room length of work has a coefficient of determination (R square) of 0.152, this explains the application of nurses' critical thinking when implementing nursing care for postoperative patients by 15.2%, other factors, namely explain the rest: education, training, habits/routines.

Various factors influence critical thinking ability. Critical thinking in nursing is strongly influenced by psychological, physiological and environmental traits such as age, level of trust, skills, stress, fatigue, and co-workers.

[15]. However, the critical thinking skills of nurses in the nursing process are not influenced by age, gender, education, work experience and marital status [16,6].

The results of the final linear regression modeling show that if the nurse is not trained in the application of critical thinking and is controlled by the entire nurse's work period, it will experience an increase in critical thinking skills of 99,281. Whereas if the nurse is not trained in critical thinking skills, it will reduce the application of critical thinking by 0.344. Training is an intervention that can improve the ability of nurses to think critically.

In line with research intervened with training, it was said that supervision significantly improved the performance of nurses [17] whereas learning models *Inquiry Training* affect developing/improving critical thinking skills [18].

The effect of training is beneficial for individuals and organizations. For training organizations, it can be seen as a form of investment, so that every agency that wants to develop should have an education program for employees continuously and training is essential to do, because of the way the organization maintains, maintains, maintains, and simultaneously enhances expertise [19,20]

The factors that can reduce critical thinking ability is being trapped in a routine, and the most common way that gets us trapped in routine is the use of excessive habits [6,21]. To avoid the occurrence of these problems nurses should be able to develop their ability to create new ideas and creativity in carrying out nursing care. One way that can be done to develop this ability is by conducting research, attending training and reading nursing books. While the research the factors that affect the competence and propensity (disposition) critical thinking nurses in addition to the length of experience of clinical practice and education levels are the age and experience of other hospitals to significantly affect the competence of critical thinking nurses [7].

## V. CONCLUSION

Critical thinking training for nurses who carry out nursing care in postoperative patients can increase knowledge and improve their ability when reviewing patients and taking nursing actions, to improve the quality of nursing care.

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