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Dominant factors affecting self-efficacy of emergency department nurse in implementing resusitation

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Abstract

The purpose of this research is to analyze the most dominant factors that influence the self-efficacy of emergency room nurses in carrying out resuscitation in cardiac arrest patients at RSUD Dr. R. Koesma Tuban via observational analysis with a cross-sectional study

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approach. As a result, the resulting coefficient of significance was mastery experience (p = 0.043) and verbal persuasion (p = 0.039) which is smaller than 0.05, showing a meaningful relationship. In conclusion, mastery experience was the dominant factor influencing the self-efficacy of emergency room nurses in carrying out resuscitation in cardiac arrest patients in the emergency room.

Keyword: Mastery experience, Self-efficacy, Hospital nurse.

Factores dominantes que afectan la autoeficacia de la enfermera del departamento de emergencias en la implementación de la reanimación

Resumen

El propósito de esta investigación es analizar los factores más dominantes que influyen en la autoeficacia de las enfermeras de la sala de emergencias para llevar a cabo la reanimación en pacientes con paro cardíaco en RSUD Dr. R. Koesma Tuban a través de análisis observacional con un enfoque de estudio transversal. Como resultado, el coeficiente de significación resultante fue la experiencia de dominio (p = 0.043) y la persuasión verbal (p = 0.039), que es menor que 0.05, mostrando una relación significativa. En conclusión, la experiencia de dominio fue el factor dominante que influyó en la autoeficacia de las enfermeras de la sala de emergencias para llevar a cabo la reanimación en pacientes con paro cardíaco en la sala de emergencias.

Palabra clave: Experiencia de dominio, Autoeficacia, Enfermera del hospital.

1. INTRODUCTION

Cardiac arrest is a medical emergency condition that requires quality treatment from health workers. According to NUGROHO (2010), the heart condition is an emergency condition that can threaten

the soul and requires treatment as soon as possible[1]. Based on data from the Indonesian Ministry of Health's Data and Information Center in NUGROHO (2017), mortality due to cardiac rank placed the highest arrest in Indonesia for non-communicable disease deaths group[2]. In assessing the case fatality rate in 2009 and 2010, heart disease is the first cause of death (21.85%) of five other non-communicable diseases. High-quality Pulmonary Resuscitation (RJP) measures by health workers in this case hospital nurses is one of the treatments to be carried out for the case (NUGROHO, 2010).

A person's self-concept in acting is influenced by Self-efficacy. Self- efficacy is a person's belief in his ability to carry out specific tasks or parts of various task components[3]. Self-efficacy is someone's judgment on their ability to plan and carry out actions that lead to the achievement of certain goals[4]. Self-efficacy is closely related to the concept of self that the self can act in accordance with what is expected. High self-efficacy in a person will make him have the view that a problem is a challenge or obstacle to achieving goals (SHINTA, 2001).

2. METHODOLOGY

This is an observational study with a cross-sectional study approach. The population in this study was all nurses who worked at IGD Dr. R. Koesma Tuban. The sampling technique is a total population of 30 nurses in the IGD Dr. R. Koesma Tuban. The research design used was observational analytic with a cross-sectional study approach. The researchers did not intervene in the studied variables. Variable

measurements were carried out simultaneously (momentary) to identify variables and look for the relationship of independent variables including Mastery Experience, Vicarious Experience or Modeling factors, Verbal Persuasive factors and Physiological and Affective State factors to the dependent variable namely nurses' self-efficacy in implementing Resuscitation in patient's cardiac arrest at the ED EDD Dr. R. Koesma Tuban (ERIANTO, 2016).

Analysis of the data used in this study is the bivariate test and multivariate test. Bivariate analysis is used to see the relationship between two variables, namely the relationship of each independent variable including the Mastery Experience, Vicarious Experience, Verbal Persuasion, and Physiological and Affective State factors and the dependent variable in the form of nurse's self-efficacy. Multivariate tests are used to assess the relationship of one or more independent variables to one dependent variable (RUSTIKA, 2012).

3. FINDINGS AND DISCUSSION

Bivariate analysis in this study is the second step to determine the relationship between independent variables (Mastery Experience, Vicarious Experience or Modeling, Verbal Persuasion, and Physiological and Affective State) and dependent variable (self-efficacy). Relationship between Mastery experience and nurses' self-efficacy in carrying out resuscitation in cardiac arrest patients

Table 1: Cross-mastery experience and Nurse's self-efficacy in carrying out resuscitation in cardiac arrest patients

Mastery Experience	Self-Efficacy				Total		r	p
	Positive		Negative					
	N	%	N	%	N	%		
Standard	17	94,4	1	5,6	18	100	0,404	0,015
Tidak Standart	7	58,3	5	41,7	12	100		
Total	24	80	6	20	30	100		

Based on table 1 of all respondents who have positive self-efficacy, as many as 94.4% have a standard category mastery experience. While all respondents who had negative self-efficacy, only 5.6% had a standard category mastery experience. Based on the results of the contingency coefficient test, p-value = 0.015 ($p < 0.05$), thus, there was a significant relationship between mastery experience and nurses' self-efficacy in carrying out resuscitation of cardiac arrest patients at EDD Dr. R Koesma Tuban with a correlation value of 0.404, showing moderate category correlation. Skills are important in cardiac resuscitation[5]. This skill can be obtained based on the results of experiences that have been experienced. The experience of success causes individual self-efficacy to increase, while repeated failure results in decreased self-efficacy, especially if it occurs when individual self-efficacy has not been strongly established. This shows that the experience of success becomes important to increase self-efficacy in someone. The experience will increase one's knowledge of things. According to RAUDATUSSALAMAH & VIVIK (2014), knowledge is important for nurses in performing cardiac resuscitation.

Based on table 1, of all respondents who have positive self-efficacy (94.4%) have a standard mastery experience. While all respondents who had negative self-efficacy, only 5.6% had a standard mastery experience. Based on the results of the contingency coefficient test, p-value = 0.015 (p <0.05), thus, there was a significant relationship between mastery experience and nurses' self-efficacy in carrying out resuscitation of cardiac arrest patients at EDD Dr. R Koesma Tuban with a correlation value of 0.404. This shows the moderate category correlation. Skills are important in cardiac resuscitation[5]. This can be obtained from the experiences that have been experienced (MUKHID, 2009).

Experience of success increases individual self-efficacy, while repeated failure decreases self-efficacy, especially if the failure occurs when individual self-efficacy has not been strongly established. This shows that the experience of success becomes important to increase self-efficacy in someone. The experience will increase one's knowledge of things. According to SUHARSONO & RIZA (2016), knowledge is important for nurses in performing cardiac resuscitation. Relationship of Vicarious Experience and nurses' self-efficacy in carrying out resuscitation in patients with cardiac arrest.

Table 2: Vicarious Experience and Self-Efficacy Nurses in Implementing

Vicarious Experience	Self-Efficacy				Total		R	P
	Positive		Negative					
	N	%	N	%	N	%		
Good	15	83,3	3	17,7	18	100	0,200	0,535
Moderate	7	70,0	3	30,0	10	100		
Low	2	100	0	0	2	100		
Total	24	80	6	20	30	100		

Based on table 5.6, of all respondents with positive self-efficacy (83.3%) had good vicarious experience categories, while of all respondents with negative self-efficacy, only 17.7% of them had good vicarious experience categories. Based on the results of the contingency coefficient test, p-value = 0.535 (p <0.05), thus, there is no significant relationship between vicarious experience with nurses' self-efficacy in carrying out resuscitation of cardiac arrest patients at EDD Dr. R. Koesma Tuban with a correlation value of 0.200. This shows that there was a weak category correlation (PUTRI, 2014).

Vicarious experience is a source of information that a person learns to receive from outside himself or others that allows them to observe and imitate behavior and adopt it into their behavior patterns. Individual observation of the success of other individuals in a particular field will increase the self-efficacy of that individual in the same field. Individuals persuade themselves by saying if other individuals can do it successfully. He also can do it well. Individual observations of failures experienced by other individuals despite having done a lot of effort to reduce the individual's assessment of his abilities. Verbal Relationship Persuasive and self-efficacy of nurses in carrying out resuscitation in patients with cardiac arrest.

Table 3: Persuasive Verbal Cross and Self-efficacy of Nurses in Carrying

Verbal Persuasion	Self-Efficacy				Total		R	P
	Positive		Negative					
	N	%	N	%	N	%		
Strong	20	90,9	2	9,1	22	100	0,412	0,013
Weak	4	26,3	4	50	8	100		
Total	24	80	6	20	30	100		

Based on table 3 of all respondents with positive self-efficacy, 90.9% had strong verbal persuasion categories. Of all respondents with negative self-efficacy, only 9.1% had strong verbal persuasion. Contingency coefficient test p-value = 0.013 (p <0.05), which shows a significant relationship between verbal persuasion and nurses' self-efficacy in carrying out resuscitation of cardiac arrest patients at EDD Dr. R Koesma Tuban. This shows a moderate category relationship. Verbal/social persuasion is used to convince individuals that they can enable individuals to achieve what they want. Bandura revealed that verbal persuasion will encourage someone to make more effort and maintain it to achieve success. In developing self-efficacy, he argues that verbal persuasion is often used as a feedback evaluation of the performance carried out. Evaluation is not always useful because feedback like this can encourage or hinder the development of self-efficacy.

Table 4: Psychological and Affective State Cross Table with Nurses Self-efficacy in Conducting Resuscitation in Cardiac Patients

Psychological and affective state	Self-Efficacy				Total		R	p
	Positive		Negative					
	N	%	N	%	N	%		
Moderate	7	70,0	3	30,0	10	100	0,147	0,333
Low	17	85,0	3	15,0	10	100		
Total	24	80	6	20	30	100		

Based on table 4, of all respondents who have positive self-efficacy, 70% had a moderate category of psychological and affective

state, while of all respondents who have negative self-efficacy; only 30% have a moderate category of psychological and affective state. Based on the results of the contingency coefficient test, it was found that p-value = 0.333 (p <0.05), meaning that there was no significant relationship between psychological and affective states with nurses' self-efficacy in carrying out cardiac arrest resuscitation in IGD RSUD Dr. R Koesma Tuban with a correlation value of 0.147 indicates a weak category correlation. Physical and psychological conditions are important sources of information that bring changes to one's self-efficacy beliefs. Someone needs a lot of energy to do mechanical activities and cause physical fatigue. Generally, a person can experience fatigue and stress after strenuous physical or emotional activities.

Although physiological conditions affect the development of one's self-efficacy, this does not cause a direct effect. One effective or emotional union that makes an important contribution to self-efficacy is mood. When someone is in a good mood then they will perform well. Conversely, when they are in a weak mood, they will face difficulties in carrying out certain tasks. This study also uses multivariate logistic regression analysis because the dependent variable is the self-efficacy scale of data in the form of categorical with positive and negative. The requirement for the multivariate analysis is if the p-value <0.25 so that it meets the requirements for multivariate logistic regression analysis. This logistic regression analysis uses the LR backward method so that the final result is as follows:

Table 5: Results of Multivariate Logistic Regression Analysis

		B	Sig.	Exp(B)
Step 3[a]	Mastery_exp(1)	-2.855	.043	.076
	Verbal_reg(1)	-2.683	.039	.068
	Constant	1.427	.210	4.168

Based on table 6, the variables that significantly influence self-efficacy are Mastery experience (p = 0.043) and verbal persuasion (p = 0.039). The strength of the relationship from the largest to the smallest is Mastery experience (OR = 0.076) and persuasive verbal (OR = 0.068). From the OR value or (Exp (B) it can be concluded that nurses with standard mastery experience tend to have positive self-efficacy by 0.076 times greater than nurses experience mastery that is not standard, whereas nurses with strong persuasive verbal tend to have self-positive efficacy is 0.068 times greater than nurses with weak verbal persuasion. Assessment of respondents' self-efficacy probabilities in this study, calculated using the equation formula:

$$y = \text{constanta} + a_1x_1 + a_2x_2 + \ldots + a_ix_i$$

$$\text{And } p = 1/(1+e^{-y})$$

Where:

a = coefficient value of each variable x = free variable value

p = probability for a situation to occur e = natural number = 2,7

Categorical dependent variable coding

Mastery Experience: 1 standard; 0 not standard

Verbal persuasive: 1 Strong; 0 Weak

Based on the formula above and table 5.11, the equations obtained from this study are: Y = -1.427 + 2,855 (ME) + 2,683 (VP)

Y = - 1,427 + 2,855 (1) + 2,683 (1) Y = 4,111

Thus the probability is:

p = 1/(1+e-y)

p = 1/(1+2,7-4,111)

p = 0,983

Based on the above calculation, the probability of nurses' positive self-efficacy in performing resuscitation at cardiac arrest with a standard mastery experience and strong verbal persuasion was 98.3%. The value of positive self-efficacy probability with mastery experience that is not standard and weak verbal persuasion is 19.5%. When IGD nurses had a standard category of mastery experience and strong verbal persuasion then they had a positive self-efficacy of 98.3%, whereas nurses with a non- standard category mastery and weak verbal persuasion had 19.5% positive self-efficacy.

Table 6: Hosmer and Lemeshow Test Results

Chi-square	Df	Sig
5.049	2	.080

Based on the results of the Hosmer and Lameshow test in table 6, equation y has the quality of the equation which shows good calibration with the significance value obtained (0.080), exceeding (0.05). This means that the mastery experience and verbal persuasion variables have a good level of accuracy as a nurse's self-efficacy predictor.

Table 7: ROC Curve Test Results

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence interval	
			Lower Bound	Upper Bound
.854	.115	.008	.628	1.000

Based on table 7, the Area Under Curve (AUC) value is 85.4% which means that the discrimination value of this equation model is in a strong category. This shows that 85.4% of the regression equations obtained can differentiate self-efficacy based on Mastery experience and verbal persuasion variables, the remaining 14.6% is influenced by other factors not examined in this study. Based on the above results also means Mastery experience and verbal persuasion can predict self-efficacy by 85.4% of the total population.

The most dominant factor influencing self-efficacy is Mastery Experience. However, there is another thing that must be taken into account, namely Persuasive Verbal Factors, because environmental

support and management are important factors in increasing the ability and confidence in resuscitation in cardiac arrest patients[10].

4. CONCLUSION

Based on the results of the analysis and discussion that has been done, the most dominant factor influencing the self-efficacy of emergency room nurses in carrying out resuscitation in cardiac arrest patients in the ED hospital Dr. R. Koesma, Tuban is a Mastery experience. Emergency room nurses are expected to be able to carry out their roles and functions for patients when carrying out nursing services to patients with resuscitation.

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ETHICAL CLEARANCE

The study was approved by the institutional Ethical Board of the Public Health, Airlangga University

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