

The Effectiveness of Education Percutaneous Coronary Intervention (PCI) Care on Nurse's Skills in PCI Care at Dr. M.Djamil Padang in 2020

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ABSTRACT

Nurse skills are very important in treating patients with PCI (Percutaneous Coronary Intervention). If the actions taken are not appropriate, it will have an impact on the patient's condition and even cause death. In theory, behavior or skills can be improved by the learning process. This study aims to determine the effectiveness of Education on Percutaneous Coronary Intervention (PCI) Nurses' Skills in PCI Actions. This research was conducted at Dr. RSUP. M.Djamil Padang in June – December 2020. This research is a Pre-experimental study with the design of One Group Pre-test-Post Test. The population and sample of this study were cathlab nurses as many as 16 people. The research instrument was a knowledge questionnaire and a nurse's skill observation sheet. The results showed that the average knowledge and skills of nurses prior to education were 65.5 and 22.5. After being given education, it became 89.4 and 29.6 for the knowledge and skills of nurses. The results of the paired t-test statistic showed that there was an effect of PCI action education on nurses' skills in PCI action at Dr. RSUP. M.Djamil Padang with p value = 0.001. It is hoped that the hospital can provide education on a regular basis in an effort to improve nurses' PCI action skills.

Keywords: Education, Knowledge, PCI (Percutaneous Coronary Intervention) care.

1. INTRODUCTION

Heart attacks are usually acute events and are mostly caused by blockages that prevent blood from flowing to the heart or brain. The main cause is fatty deposits on the walls of blood vessels that supply the liver or brain, which can cause further damage or complications such as; myocardial infarction (death of heart cells) to the failure of the heart muscle to get an oxygen supply which can result in a person's death [1].

Acute coronary syndrome (ACS) is a constellation of clinical symptoms that indicate acute myocardial infarction (MI) [2]. In other literature it is stated that Acute Coronary Syndrome (ACS) is a term commonly used to describe a collection of thrombotic coronary syndromes of the heart that are divided according to the order of severity, namely unstable angina, non-ST-segment elevation myocardial infarction (NSTEMI), and elevation myocardial infarction. ST segment (STEMI) [1].

Coronary heart disease is heart disease caused by narrowing of the coronary arteries due to atherosclerosis or spasm or both. Coronary heart disease causes problems in the heart organs and especially in the blood vessels. Acute coronary syndrome (ACS) is a serious coronary heart disease that threatens life because it can cause sudden death [5]. Coronary heart disease in 2008 caused the death of 17.3 million people (30%). It is estimated that in 2030, as many as 23.3 million people in the world will die from various cardiovascular diseases [6]. The number of results of this study will continue to increase in the Asian region, including Indonesia [11]

The main problem with CHD is the narrowing of blood vessels that occurs due to atherosclerosis or arterial spasm or both. Atherosclerosis occurs due to the accumulation of cholesterol and connective tissue in the walls of blood vessels slowly [8]. This condition causes the myocardium or heart muscle to not get oxygen and blood supply, so the deterioration leads from ischemia to tissue

death in the heart [4]. Coronary heart disease is categorized as a critical illness because the patient is in a state of threat of death.

Generally, ACS sufferers are women and aged over 45 years in the United States [6]. In another source mentions that ACS caused 1 of every 6 deaths in the United States in 2008. Coronary heart disease (ACS) caused 405 309 deaths in 2008 and every year, it is estimated that 785 000 new ACS cases appear in America and an estimated 470,000 of them have the potential experiencing relapse [8]

According to a study conducted by Try Yulianti in 2012 [12] with the title "Overview of the Quality of Life of Acute Coronary Syndrome Patients at the Cardiology Polyclinic of Al Islam Hospital in Bandung" it was found that half of the respondents (50%) described moderate physical activity limitations, half of the respondents (47%) had stable angina, almost all respondents (80%) had very rare angina, satisfaction with treatment of most respondents (67%) was satisfactory and half of respondents (41%) had a bad perception of their disease. So it can be concluded that a small proportion of respondents (30%) have a low quality of life. Broadly speaking, the actions in ACS patients include, assessment measures, ECG examination, cardiac markers and risk stratification will direct the management of STEMI on revascularization measures. Revascularization is the definitive management of ACS (STEMI). Revascularization measures can be performed using fibrinolytic therapy or through PCI procedures. Acute reperfusion therapy using PPCI or fibrinolytic therapy in patients with STEMI is able to restore blood flow in the arteries. This process depends on the management of the patient, the size of the thrombus and the probability of mortality in the patient. PCI is able to provide optimal revascularization in 90% of subjects and reduce mortality in subjects. On the other hand, fibrinolytic therapy is able to restore normal coronary flow (in patients with TIMI category 3) in 50% to 60% of subjects [9].

Both PPCI and Fibrinolytic therapy have their respective indications, contraindications and benefits [10]. Efforts to prevent further complications in the heart can be in the form of vascular complications, hematomas, coronary acute syndrome (STEMI) which can aggravate health conditions that can actually be prevented, therefore one method is needed so that a person can survive a heart attack, namely medical treatment, one of them, namely the Percutaneous Coronary Intervention (PCI) method. PCI (Percutaneous Coronary Intervention) is a technique to remove and widen narrowed coronary arteries. This action can remove blockages immediately, so that blood flow can

return to normal, so that damage to the heart muscle can be avoided (Majid, 2007), but the installation of PCI in patients suffering from heart disease can affect the patient's physical activity and quality of life (Quality of Life) [4].

Predisposing/individual factors describe the health of workers with their personal characteristics and work experience [6]. Predisposing factors are factors that come from the individual himself such as knowledge, attitudes, education level and years of service [7]. According to Mustikawati [8] identification of individual characteristics is the initial factor that can have a direct impact on the results of the service provider's appearance whether the display is acceptable or not. Education will provide knowledge not only for the implementation of services but also for self-development in utilizing existing facilities for smooth tasks without ignoring the application of standard precautions.

Theoretically knowledge, attitudes and practice are the stages of changing a person's behavior in adopting new behaviors [11]. Nurses who have good knowledge about care for patients with PCI are more likely to apply it when compared to nurses who have poor knowledge [8].

This study aims to determine the effectiveness of Care Education on Percutaneous Coronary Intervention (PCI) Nurse Skills in PCI Treatment Measures.

2. METHODS

This research was conducted in a pre-experimental design with a research design of One Group Pre-test-Post Test. This research was conducted in June – December 2020. The population in this study were cathlab nurses at RSUP M.Djamil Padang with a sample of 20 people. The intervention provided was education using the lecture method and leaflet media. Evaluation in this study is the knowledge and actions of nurses in performing PCI treatment actions. Research data is processed computerized.

3. RESULTS

In this study, the test to determine the Effectiveness of Percutaneous Coronary Intervention (PCI) Care Education on Nurses' Skills in PCI Treatment used the paired t-test. The results obtained are as follows:

Table 1. The difference in the average knowledge of nurses before and after the intervention

Variable	Mean	SD	95%CI		P Value
			Lower	Upper	
Knowledge			25,5	23,2	0,0

Pretest	65,	89,	2,1	88	87	01
Posttest	50 24, 44	94	59			
Action				7,80	5,31	0,0
Pretest				8	7	01
Posttest	22, 50 29, 06	6,5 62	2,3 37			

Based on Table 1, It can be seen that there is a difference in the average and standard deviation of knowledge of nurses before and after intervention is 24.44 and 2.159 and p value is 0.001, it can be concluded that there is a significant difference between knowledge before and after the intervention. Meanwhile it can be seen that there is a difference in the average and standard deviation of the actions of nurses before and after the intervention, namely 6.562 and 2.337 and p value is 0.001, it can be concluded that there is a difference significant difference between the actions before and after the intervention.

4. DISCUSSION

Based on the results of the study, there were differences in the average knowledge and actions of respondents before and after giving education and the results of the paired t test of knowledge and action obtained p values of 0.001 and 0.001. So it can be concluded that there is an effect of education on cathlab nurses in performing PCI treatment.

The results of the collection of questionnaires about nurses' knowledge in PCI meas sures, it was found that the knowledge of nurses before being given education was in the range of sufficient knowledge (56%-75%), while after being given education, nurses' knowledge was in the range of good knowledge (76%-100%). The results of the questionnaire data collection showed that the most questions answered correctly were what the Circulating nurse did before taking PCI. Things that need to be done by circulating nurses before carrying out PCI include preparing sterile sets needed for scrub nursing, accepting patients, ensuring patient administration completeness (SEP/ IKS/GENERAL), performing detailed patient checks including risk factors. , pre-action preparation documents (lab results, informed consent, etc.), signing in, assessing the patient's pain level, documenting the patient's pain level in the pain assessment form (Numeric rating Scale / Visual Analog Scale), providing information to patients and their families about information on actions to be taken during the catheterization room, assessing the

patient's anxiety level, making the atmosphere relaxed, preparing the patient on the action table, installing hemodynamic monitors (blood pressure, electrocardiography, and oxygen saturation), monitoring hemodynamics, oxygenation, pulmonary ventilation, level of consciousness, ECG, responsible for the completeness of the number of instruments and catheters time out [7].

Meanwhile, the most incorrectly answered questions based on the results of questionnaire data collection were two points on what actions were taken by the Circulating nurse during PCI, namely evaluating the use of contrast and monitoring pain in patients during the procedure and providing therapy according to the pain range, According to the results of collaboration with doctors, the actions taken by the circulating nurse when performing PCI were evaluation in the use of contrast and pain monitoring in patients during the procedure and providing therapy according to the range of pain, according to the results of collaboration with doctors [14]. Give the necessary drugs during the procedure, monitor hemodynamics, oxygenation, and ECG during the PCI procedure, monitor hemodynamics during the procedure, record the patient's vital signs, record every process that occurs during the procedure and record the results of the action on a disc (CD), and perform sign out[4].

From the results of the study, it was found that the average action before being given an intervention was 22.50, the median was 23.00 with the lowest value 19 and the highest value 25. While the average action after the intervention was 29.06, the median was 28.50 with the lowest value. 26 and the highest score was 35.

The results of observations from several points about the skills of nurses in PCI action,it was found that the most common action was to prepare sterile sets required for patient acceptance (100%). The procedure for Percutaneous Coronary Interventions (PCI) is divided into three, namely patient preparation, equipment preparation and monitoring preparation [17]. In patient preparation in the form of mental preparation by explaining to the patient about the procedure, the benefits and complications that can occur and the patient is asked to fill out informed consent. The next preparation is administration where the patient's status is complete, before the action the patient's family is asked to take care of hospitalization letters, and take care of the required administration. The last preparation is physical by checking physical preparation before PCI includes; patients fasted for eating about 4-6 hours before the procedure, height, weight were measured and

recorded (Height:174 cm, weight: 79 kg), vital signs were measured blood pressure 181/99 mmHg, heart rate 86 x/minute, install IV line. Supportive examination by checking the completeness of supporting examinations including 12-lead ECG and laboratory results [3].

In the preparation of the equipment before the action begins, the hemodynamic machine equipment such as a transducer is connected to a computer so that it can display a monitored hemodynamic picture. Then prepare the electrodes and also attach them to the patient for monitoring the patient's ECG and prepare the printer for documenting the results of the examination[12].

Meanwhile, the actions that are mostly not carried out are checking (emergency trolley, oxygen, suction, availability of emergency pacing, drugs and bmhp), assessing the patient's pain level and documenting it in the pain assessment form (numeric rating scale / visual analog scale), monitoring pain in patients during the procedure and providing therapy according to the pain range, according to the results of collaboration with doctors. Meanwhile, based on cardiac catheterization procedures, nurses play a role in monitoring the patient's hemodynamics such as cardiac output, and vital signs, one of which is pain. It aims to immediately identify abnormal conditions so as to prevent unexpected complications from occurring [7]. Treatment after undergoing cardiac catheterization procedures aims to identify the presence of post-procedure ischemia or infarction, identify the effects of contrast agents, the presence of edema and bleeding in the puncture area and identify the presence of peripheral circulation disorders. All of these actions are expected to identify the problems experienced by the patient as soon as possible, prevent infection and accelerate the healing of the patient's condition. Therefore, comprehensive patient care is required both before, during and after cardiac catheterization procedures [11].

Opening the cap of the syringe using the one-handed technique (15.2%) and closing the syringe using the one-handed technique (23.9%). According to the standards issued by the Ministry of Health [16]. reclosing used syringes can use the one-handed scoop/single handed recapping method. This action aims to prevent needle sticks in health care workers including nurses [5]. Health workers who get needle stick wounds are at risk of contracting at least 20 potential pathogens, the two pathogens that cause the most problems are hepatitis B (HBV) and human immunodeficiency virus or HIV (Potter & Perry, 2005). Safe injecting practices are washing hands before taking action (20%) and washing hands after taking action (15.2%)[13] This significant change indicates that providing education about

PCI has an impact on nurses' skills in PCI action. Knowledge or cognitive is one of the important domains in the formation of a person's actions/behaviors. Knowledge is the result of someone's observations or the results of knowing objects through their senses (eyes, nose, ears and so on) [6]. Behavior that is based on knowledge will be more lasting than behavior that is not

based on knowledge [8]

Based on the results of statistical tests with the Paired t-test test, the average pre-test score was 22.50 and the post-test average was 29.06 where the pre-post standard deviation was 2.337 and the p-value was 0.0001. ($\alpha < 0.05$). This shows that there is a difference in the mean before and after being given percutaneous coronary intervention (PCI) education on the skills of nurses in PCI.

5. CONCLUSION

The results of research that has been carried out on the Effectiveness of Care Education Percutaneous Coronary Intervention (PCI) Nurse Skills in PCI Treatment Actions, it is found that there is a difference in the average knowledge and actions of respondents before and after providing education and the results of the paired t test of knowledge and action obtained values p are 0.001 and 0.001. So it can be concluded that there is an effect of education on cathlab nurses in performing PCI treatment.

It is hoped that health services can provide education about the care of patients with PCI on a regular basis to improve the skills of nurses.

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