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INCREASING EMPLOYEE KNOWLEDGE ABOUT CODE BLUE AT PALEMBANG BARI REGIONAL HOSPITAL

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ABSTRACT

Basic Life Support for cases of life-threatening medical emergencies, such as cardiac or respiratory arrest is carried out by medical staff following an immediate medical assistance call or "code blue". However, there are some gaps between the staff's capabilities and the regulations. Therefore, to enhance employees' ability to respond effectively to Cardiorespiratory Arrest emergencies, it's crucial to conduct Code Blue Training for Palembang BARI Hospital employees. A quantitative descriptive study was conducted in this study. The implementation of activities was carried out with a health management program approach from January to March 2022 starting from the program initiation, planning, implementation, monitoring, and evaluation stages. The implementation of the activity was carried out on 17 and 18 February 2022 at the Second Floor Hall of Palembang Bari Hospital. Evaluation of participants was carried out with pre-test and post-test questionnaires through Google Form. Descriptive analysis was conducted to describe the participants' knowledge. The results showed that there was a positive difference between the mean posttest (91.44) and pretest (71.5) scores of participants (+19.94 points) on a scale of 100 regarding code blue. An increase in participants' knowledge also occurred by 15.8% to 25.1% on some question items. This activity indicates an increase in employee knowledge related to code blue through lecture and simulation methods.

Keywords: Code Blue, hospital employees, health management program

Introduction

Sudden cardiac arrest (HJM) is a condition where normal heart activity suddenly stops and is accompanied by hemodynamic collapse caused by problems with the heart.Some cases of death due to heart disease are caused by HJM (Sudden Cardiac Arrest). In patients who do not have a history of heart problems, most experience HJM as much as the first symptom. So this condition is also considered a silent killer. HJM incidents can happen anywhere, anytime, and to anyone. Treatment involves knowledge of basic resuscitation techniques which is important while waiting for medical help. Therefore, a series of actions are needed to prevent death due to cardiac arrest, including providing Basic Life Support (BHD).[1]

In hospitals, BHD (Basic Life Support) for cases of life-threatening medical emergencies, such as cardiac or respiratory arrest, is carried out by medical staff after a call for immediate medical assistance or "code blue". Code blue is an emergency procedure code that must be

activated immediately if someone experiences cardiac respiratory arrest in the hospital area. The application of code blue guidelines is usually regulated by the decision of the hospital director.[2]

This basic life support is provided until the code blue team that provides advanced life support arrives. The code blue response team or code blue team is a team formed by the hospital whose task is to respond to code blue conditions within the hospital area. This team consists of doctors and nurses who are trained in treating cardiac respiratory arrest conditions. Cardiopulmonary resuscitation is a series of actions to increase survival after cardiac arrest. Although the optimal achievement of cardiopulmonary resuscitation can vary, depending on the abilities of the rescuer, the victim's condition, and available resources, the fundamental challenge remains how to perform cardiopulmonary resuscitation as early and effectively as possible.[2]

At the Palembang BARI Regional General Hospital, the rules regarding code blue have been regulated in a decree regarding the implementation of code blue. However, based on initial observations there are some gaps, as there areemployees who do not have the ability to initially evaluate patients/victims with respiratory arrest and cardiac arrest, there are employees who are not yet able to provide basic and advanced life support according to the guidelines for improving the quality of services at the Palembang BARI Regional Hospital, and there are employees who are not yet skilled in providing assistance with and without using tools.

Basic life support emphasizes the importance of maintaining circulation by immediately applying compressions before opening the airway and providing rescue breaths. The change in the basic life support cycle to CAB (compression airway breathing) is with the consideration of immediately restoring cardiac circulation so that tissue perfusion can be maintained. The importance of knowledge, abilities and special skills in carrying out basic life support actions in code blue if a patient experiences cardiac arrest so that these actions have procedures that must be understood. Therefore, to enhance employees' ability to respond effectively to Cardiorespiratory Arrest emergencies, it's crucial to conduct Code Blue Training for Palembang BARI Hospital employees.

Methods

The implementation of this activity adopted a hybrid approach, combining in-person and online participants via Zoom meetings, divided into two sessions. Knowledge enhancement was achieved through material delivery and Code Blue simulations, using PowerPoint presentations. Each session lasted approximately 150 minutes, including a question and answer segment. The resource persons were medical practitioners, specifically anesthesiologists, while the instructors included general practitioners and intensive care unit nurses.

The series of activities occurred from January 2022 to March 2022, following a health program management approach, encompassing initiation, planning, execution, monitoring, and

evaluation stages. The initiation stage started with a program request, leading to program approval.[3] Problem identification was conducted by analyzing the current and expected conditions, prioritizing issues with the USG table (Urgency, Seriousness, Growth), preparing terms of reference, schedules, and obtaining agency head approval.

The planning stage involved 12 teams, including the hospital's main director, deputy director of services, chief executive officer, activity secretary, and activity committee (comprising doctors, nurses, and general staff). Planning covered work division, technical and administrative preparations.

The activities were carried out on February 17 and 18 2022 in the II Floor Hall of the Palembang Bari Hospital. Activities consist of delivering material, practice or code blue simulations, and discussions and questions and answers. Monitoring and supervision is carried out on participants, resource persons, and activity instructors from training preparation, training process, and the end of training a maximum of one month after the activity. Evaluation is carried out all of the process to assess the strengths and challenges of training. Evaluations are also carried out on participants by using a pre-test and post-test questionnaire via Google Form. The questionnaire consists of five questions prepared by the informant (table 1). Then, descriptive analysis was conducted to describe participants' knowledge level.

Results

Participants in the activity were Palembang BARI Hospital service staff consisting of emergency room doctors, room heads, intensive unit nurses, midwives, technical staff and service administration. A total of 125 people took part in activities offline and 759 people online. The results of the implementation of employee knowledge improvement activities related to code blue at Palembang BARI Hospital can be seen in Table 1.

Table 1. Changes in employee knowledge regarding code blue

No.	Question	Pretest (n=760)		Posttest (n=677)		Enhancement (%)
		Correct answer	%	Correct answer	%	
1.	When did ALS begin or was the ALS algorithm carried out?	538	70.8	595	87.9	17.1
2.	At what wave is a shockable DC shock carried out?	508	66.8	622	91.9	25.1
3.	In shockable VT VT amiodarone is given after what?	506	66.6	597	88.2	21.6
4.	In the ACLS 2021 algorithm, until how many new CPS cycles can it stop?	598	78.7	640	94.5	15.8
5.	At AHA 2020 how deep is the hard push massage compression?	567	74.6	641	94.7	20.1

Based on table 1, there is an increase in participant knowledge of 17.1% regarding the application of the ALS algorithm in code blue situations. In addition, there was an increase in knowledge of 25.1% regarding the type of wave used during shockable DC shock, an increase in knowledge of 21.6% regarding the administration of amiodarone during shockable ventricular tachycardia (VT) or ventricular fibrillation (VF), an increase in knowledge of 15 .8% regarding the ACLS algorithm, and 20.1% regarding hard push massage compression at the AHA 2020.

Based on the research results, an increase in participants' scores occurred in the wave type concept used during shockable DC shock (25.1%) and administration of amiodarone during shockable ventricular tachycardia (VT) or ventricular fibrillation (VF) (21.6%).

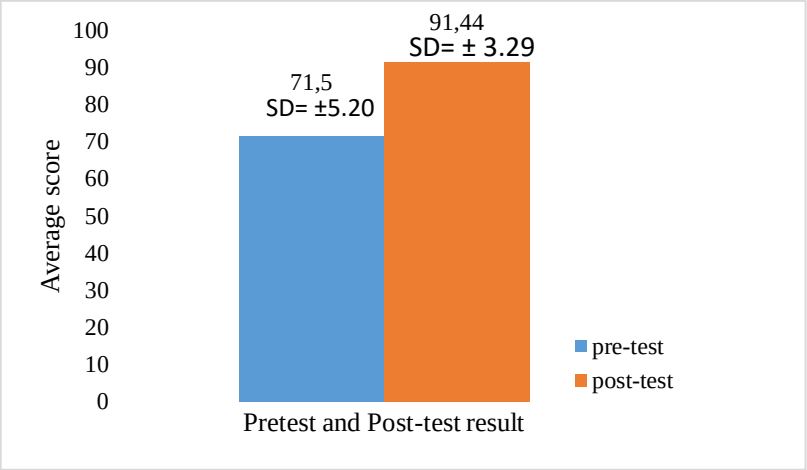

Figure 1. Comparison of the average scores of all participants

Figure 1 shows that there is a positive difference between the average posttest (91.44) and pretest (71.5) scores of participants (+19.94 points) on a scale of 100. This shows that code blue training positively increases the average score average obtained by participants.

Discussion

The prevalence of cardiac arrest in Indonesia has not been well recorded, but this incidence tends to increase along with the increase in cases of coronary heart disease (CHD).[4]Death from sudden cardiac arrest is caused by not getting adequate help. According to statistics, approximately 80% of all hospital deaths result from cardiac arrests that were not treated quickly and appropriately by medical staff. Proper medical care is estimated to save 20% of cardiac arrest patients out of every 1,000 events.[5]Therefore, the skills of rescuers in providing basic assistance, the speed of response of personnel in carrying out defibrillation, and the time to evacuate the patient to the hospital can increase the life expectancy of cardiac arrest sufferers.[6]

When a person or patient is found to be in cardiopulmonary arrest in a hospital, the code for an emergency procedure must be activated immediately. Code blue is one of the procedure codes

developed to reduce the high rate of death due to in-hospital cardiac arrest (IHCA).[4]Health workers, especially nurses, play an important role in providing basic life support when cardiac arrest occurs in the treatment room before the code blue team arrives. The first nurse or staff member to arrive at the scene of a cardiac arrest has the role of a local code blue team who activates the emergency system and performs cardiopulmonary resuscitation.[7]

The Code Blue process involves implementing an implementation algorithm that focuses on the chain of survival, which consists of several important stages. The first stage is to quickly detect the victim's condition and request immediate assistance (early access). The second stage involves immediate cardiopulmonary resuscitation (CPR). The third stage includes early defibrillation. The fourth stage is related to immediate advanced cardiovascular life support (early advanced cardiovascular life support). The fifth stage deals with aspects of postcardiac arrest care (postcardiac arrest care).[5]

According to previous research, delivering material through online seminars and live simulations can increase the average knowledge score of participants.[8–11]With new information, participants can build a better understanding and understand the information more deeply.[12]In addition, utilizing experience as a source of knowledge is a method for accessing the truth of knowledge by reapplying previously acquired insights in dealing with past problems. The development of learning experiences not only increases professional knowledge and skills, but also stimulates the development of decision-making abilities as a result of integrated scientific and ethical thinking, which is rooted in real situations in the field of work.[4]

Based on monitoring and evaluation results, the absence of participant participation during the pre-test and post-test was due to differences in participant characteristics, such as urgency in the work unit, service schedules, as well as limited time and resources in the work unit.

Conclusion

This research shows an increase in the average score of Palembang BARI Hospital employees through training using lecture and simulation methods. It is hoped that this training activity can improve the capabilities of Palembang BARI Hospital employees and optimize hospital services.

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Conflict of Interest:

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