

EFFECTIVENESS OF BASIC LIFE SUPPORT (BLS) TRAINING ON THE KNOWLEDGE AND SKILLS OF HIGH SCHOOL STUDENTS IN PROVIDING ASSISTANCE TO CARDIAC ARREST VICTIMS

Ayu Wahyuni Lestari* and Zulkarnain

Lecturer Nursing Departement, School of Nursing, Institute of Health Science Yahya, Bima, West Nusa Tenggara, Indonesia.

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*Corresponding author: Ayu Wahyuni Lestari

Lecturer Nursing Departement, School of Nursing, Institute of Health Science Yahya, Bima, West Nusa Tenggara, Indonesia.

Email Id:

ABSTRACT

Background: In improving health development the main part is in emergency services. In order to realize the improvement of the quality of services in the treatment of victims or emergency patients is necessary a system of victim care that is carried out in an integrated and integrated manner by engaging several parties because it does not cover the possibility of emergency conditions can occur in areas that are difficult to reach health workers, then in those conditions, the role of the community to help victims before being found by health officials becomes very important. Pulmonary cardiac resuscitation is one of a series of life-saving measures to improve the survival rate of sudden cardiac arrest patients. **Objective:** The purpose of this research is to find out the effectiveness of BLS training on the knowledge and skills of high school students in providing assistance to cardiac arrest victims. **Methods:** This study used quantitative pre experimental method with one group pre-post test design. The sampling technique uses simple random sampling technique with a number of samples of 30 respondents. Data collection techniques using paired t-test. **Result:** The average value of knowledge obtained by respondents before being given training is $1,2667 \pm 0,44978$ and the average value of knowledge after training is $2,5000 \pm 0,68229$. The average value of skills obtained by respondents before being given training is $1,1333 \pm 0,34575$ and the average value of skills after being given training is $2,3667 \pm 0,71840$. The results of the Wilcoxon Signed Rank Test on the knowledge variable obtained a value of Z of -4,604 with p value = 0,000 and in the skill variable obtained an Z value of -4,344 with p value 0,000. This shows there is a significant influence between BLS training and the knowledge and skills of high school students in providing assistance to cardiac arrest victims. **Conclusion:** There is an influence of basic life support training on the knowledge and skills of high school students in providing assistance to cardiac arrest victims.

KEYWORDS: Training, Basic Life Support, Knowledge, Skills.

INTRODUCTION

In improving health development the main part is in emergency services. To realize the improvement of the quality of services in the treatment of victims or emergency patients, a system of victim care is needed in an integrated and integrated manner involving several parties.^[1]

So the emergency services become one of the essential services in the event of cardiac arrest. Emergency conditions can occur anywhere, and at any time. It is the duty of health officials to deal with the problem, however, not to close the possibility that emergency conditions can occur in areas that are difficult for health workers to reach, then in those conditions, the role of the

community to help victims before being found by health officials becomes very important.^[2]

In addition to traffic accidents, heart disease is also known to be very deadly. The world health organization's (WHO) last data in 2012 found cardiovascular disease was the leading cause of death of all uns transmitting diseases and was responsible for 17.5 million deaths or 46% of all uns transmitting disease deaths. Pulmonary cardiac resuscitation is one of a series of life-saving measures to improve the survival rate of sudden cardiac arrest patients. Pulmonary cardiac resuscitation techniques are performed by combining chest compression and artificial breath to provide the oxygen necessary for the continuity of the body's cell function.

This method is performed to maintain circulation function during cardiac arrest. Ignorance of helpers, even the incompetent management of BLS from helpers often occurs in real cases in the field.^[3]

The extent of understanding, knowledge, skills and readiness of community in providing basic life support to deal with emergency situations especially in cases of cardiac arrest there is no clear data. Facing an emergency requires individuals, groups or communities to know and be self-reliant on first aid, because most people will eventually be in a situation that requires first aid for others or themselves.^[4]

BLS training should be given to the community, one of which is high school students. BLS training is expected to provide students with skills in the face of critical (cardiac arrest) situations. Civilians who are trained in bls usually have a tendency to be more confident and able to perform BLS procedures when finding a heart attack situation.^[5]

Jones et al ^[6] found that adolescents between the ages of 13-14 can perform chest compression as adults do. To achieve the goal of improving the survival rate of heart attacks, there needs to be training to train high school students about BLS. The purpose of this research is to find out the effectiveness of BLS training on the knowledge and skills of high school students in providing assistance to cardiac arrest victims.

Based on the results of preliminary studies conducted at State High School 1 Donggo, bls training has never been done in State High School 1 Donggo students so students still do not understand and are less skilled in handling victims in emergency situations especially in cardiac

arrest cases. Based on the above description, researchers are interested in conducting research under the title Effectiveness of BLS Training on the Knowledge and Skills of High School Students in Providing Relief to Cardiac Arrest Victims.

METHOD

This research is quantitative research, this research is to assess the effectiveness of BLS Training on the Knowledge and Skills of High School Students in Providing Relief to Cardiac Arrest Victims. The type of research used in this study is to use pre experimental method with design design one group pre-post test design. The sample in this study was 30 respondents. The data analysis used in this study is the Wilcoxon test. The instrument used in this study is a questionnaire to find out the extent of knowledge to which this questionnaire has been conducted to test validity and reality. For Instrument skills using the observation sheet of the Indonesian emergency and disaster nurse association (HIPGABI) (2018) adopted from BLS measures according to the American Heart Association (AHA) (2015).

RESULT

Table 1: Demographic Data.

Characteristics	Frequency	%
Gender		
Male	10	33,3
Female	20	66,7
BLS Training Status		
Ever	0	0
Never	30	100

Table 2: Distribution of knowledge of high school students before and after training in providing assistance to cardiac arrest victims.

	N	Mean	Z value	p
Knowledge before training	30	1,2667 ± 0,44978	-4,604	0,000
Knowledge after training	30	2,5000 ± 0,68229		

Based on the above research results, that the average value of respondents' knowledge before training was 1.2667 ± 0.44978 and after training the average score increased to 2.5000 ± 0.68229 . The results of the bivariate analysis using the Wilcoxon test, obtained a Z value of -

4,604 and a significance value of 0.000 ($p < 0.05$). The results of this statistic test can be concluded that there is an influence of BLS training (Basic Life Support) on the knowledge of high school students in providing relief to cardiac arrest victims.

Table 3: Distribution of skills of high school students before and after training in providing assistance to cardiac arrest victims.

	N	Mean	Z Value	p
Skills before training	30	1,1333 ± 0,34575	-4,344	0,000
Skills after training	30	2,3667 ± 0,71840		

Based on the above research results, that the average skill score of respondents before training was 1.1333 ± 0.34575 and after training the average score increased to 2.3667 ± 0.71840 . The results of the bivariate analysis

using the Wilcoxon test, obtained a Z value of -4,344 and a significance value of 0.000 ($p < 0.05$). The results of this statistic test can be concluded that there is an influence of BLS training (Basic Life Support) on the skills of high

school students in providing relief to cardiac arrest victims.

This is in line with research conducted by Dewi,^[7] which examined the influence of cardiopulmonary resuscitation training on the knowledge and skills of high school students. The results of Dewi's research,^[7] show that there is an influence of cardiopulmonary resuscitation training on knowledge and skills with statistical results p knowledge of 0.000 ($p < 0.05$) and skills of 0.000 ($p < 0.05$).

The results of this study are also supported by research conducted by Owojuyigbe, et al^[8] related to the influence of basic life support training on knowledge with a value of $p = 0.01 < 0.05$, this result can be concluded there is an influence of training on knowledge. Based on other research conducted by Ghauri, et al^[9] on the influence of basic life support training on knowledge with a value of $p = 0.01 < 0.05$ can be concluded there is an influence of training on knowledge. In Prasetyo's research^[10] on the influence of basic life support training on the knowledge of muhammadiyah disaster management team obtained a value of $p = 0.0001 < 0.05$ can be concluded there is an influence of training on knowledge.

According to Pirton & Nazmudin,^[11] Basic Life Support (BLS) is a simple effort made to address the life-threatening circumstances of a person so as to sustain his life for a while. Basic Life Support is done until further help or assistance arrives. Basic life support is part of medical emergency management that aims to prevent the stop of circulation or the stop of respiration.^[12] The circumstances of the crash victims can get worse or lead to death if not dealt with quickly.^[13] Basic Life Support can be interpreted as an effort made to preserve the life of a person who is at risk of life.^[12] Frame also states that Basic Life Support should be provided to victims who experience stop-and-search, cardiac arrest, and bleeding. One's skills in order to provide BLS properly must go through training. The results of this study are also in line with research conducted by Sansare and Jacob^[14] namely the influence of basic life support training on knowledge and skills in Employees with a value of $p = 0,000 < 0.005$, concluded there is an influence of training on skills.

Training is a learning concept that focuses on skills. Training forms the basis of the implementation of one's skills. Training should be sustainable with the aim of remembering and updating the knowledge and skills. According to Keenan^[15] retraining should take 6-12 months to maintain basic life support skills.

The effectiveness of basic life support training on knowledge and skills is in accordance with the theory presented by Hasibuan^[16] because training is a process of learning to teach certain knowledge and skills and attitudes so that participants are more skilled and able to carry out their responsibilities properly, in accordance with standards. This research supported by Pratiwi^[17]

shows there is a significant relationship between training and the knowledge of high school students with a p -value of 0.001 (< 0.05). This demonstrates the positive benefits of BLS training. The majority of respondents showed increased knowledge during post-test. This may be due to the desire and passion to learn from respondents.

Notoadmodjo^[18] says knowledge is the result of manusia and this occurs after people have sensed a particular object. And he also explained that the higher a person's level of knowledge, the higher one understands the importance of doing activities to achieve the goal. While according to^[19] knowledge is a result of curiosity through sensory processes, especially in the eyes and ears of certain objects. Knowledge is an important domain in the formation of open behavior. Knowledge is influenced by formal educational factors and is very closely related. It is hoped that with higher education, the wider the knowledge will be. But low-educated people are not absolute low-knowledge anyway. Increased knowledge is not absolute obtained from formal education only, but can also be obtained from non-formal education.^[18]

The development of a knowledge is evident from a person's ability to apply it, one of which is in the form of skills. Skill development must go from what students master to skills they have not yet mastered. Skill is the ability to use reason, mind and ideas and creativity in working, changing or making things more meaningful so as to generate a value from the work. There is also another understanding that defines that skill is an ability to translate knowledge into practice so that it achieves the desired work.^[20]

CONCLUSION

There is an influence of basic life support training on the knowledge and skills of high school students in providing assistance to cardiac arrest victims.

ETHICS

This research has passed the Medical Research Ethics Committee Institute of Technologi and Health Science Bali with the letter number: 04.0059/KEPITEKES-BALI/X/2020.

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CONFLICT OF INTEREST

There is no conflict of interest in this research.

REFERENCES

1. Ministry of Health indonesia. Emergency Health and Its Handlers. Jakarta, 2016.
2. Sudiharto & Sartono Basic Trauma Cardiac Life Support. Jakarta: CV Sagung Seto, 2011.
3. Wijaya M.A. The Effect of Basic Life Support Training on Knowledge Level, Skills, Attitude to Basic Life Support in Pondok Pesantren Gontor Kediri. PPDS, Department of Anesthesiology and Intensive Therapy, Medical Faculty Of Universitas Airlangga, 2015.
4. Turambi The Effect of Basic Life Support Training (BHD) on Improving The Knowledge And Skills of Grade XI and XII Students of SMA N 2 Langawon. Buletin Sariputra, 2016; 6(2).
5. Kayo Tanigawa, Taku Iwami, Chika Nishiyama, Hiroshi Nonogi, Takashi Kawamura. Are trained individuals more likely to perform bystander CPR? An observational study, Resuscitation, 2011; 82(5): 523-528.
6. Jones, I, Whitfield, R, Colquhoun, M, Chamberlain, D, Vetter, N, & Newcombe, R. At what age can schoolchildren provide effective chest compressions? An observational study from the Heartstart UK school training programme. BMJ, 2007; 1-3.
7. Dewi A,R. The effect of pulmonary cardiac resuscitation training on the knowledge and skills of students in public high school 2 sleman yogyakarta. High school of health sciences 'Aisyiyah Yogyakarta, 2015.
8. Owojuyigbe, A, Adenekan, A, Faponle, A, & Olateju, S. 'Impact of basic life support training on the knowledge of basic life support in a group of Nigerian Dental Students', Nigerian Postgraduate Medical Journal, accessed on October 19, 2020. <https://doi.org/10.4103/1117-1936.170740>.
9. Ghauri, S, Khan, H, Bangash, M, Mustafa, K, & Khan, A. Impact of Basic Life Support Training on the knowledge of Basic Life Support in Undergraduate Medical Students. South Asian Journal of Emergency Medicine. Vol.1, accessed on October 19, 2020. <https://doi.org/10.5455/sajem/184-1532789417>.
10. Prasetyo, R.(2019). The effect of basic life support training on the knowledge and skills of Muhammadiyah Disaster Management (MDMC) Banyumas. Proceedings of national seminar 2018. accessed on October 19, 2020. <https://doi.org/10.32528/psn.v0i0.1732>
11. Pirton, L & Nazmudin. BTCLS & Disaster Management. (First Edition). South Tangerang: YPIKI (Indonesian Nursing Science Training Foundation), 2015.
12. Frame. PHTLS: basic and advanced prehospital trauma life support. Jakarta: EGC, 2010.
13. Sunyoto. Case Study Presentation, Simulation. Accessed on 15 october 2020 http://fkm.unsri.ac.id/index.php?option=com_content&view=article&id=44:presentasicasestudy-simulasi&catid=8:informasi, 2010.
14. Sansare, KR, & Jacob, S. (2018). 'Effect of basic life support training programme on knowledge and practice among administrative employees of health institutes, Navi Mumbai', International Journal of Nursing Education and Research, Accessed on 15 october, 2020. <https://doi.org/10.5958/2454-2660.2018.00039.x>
15. Keenan, M. Lamacraft, G., & Joubert, G. A Survey Of Nurse Basic Life Support knowledge and training at a tertiary hospital. African Journal Of Health professions Education, 2009; 1(1).
16. Hasibuan, Malayu S.P. Human Resources Management. Jakarta: PT Bumi Aksara, 2010.
17. Pratiwi. Basic life support: pengetahuan dasar siswa sekolah menengah atas. 7 (2). Accessed on 15 october 2020 <http://ejournal.umm.ac.id/index.php/keperawatan/issue/view>, 2016.
18. Notoatmodjo, S. Public Health Science and The Arts.Jakarta: Rineka Cipta, 2014.
19. Donsu, J.D.T Nursing Research Methodology. Yogyakarta: Pustaka Baru Press, 2016.
20. Suprpto, Tommy. Introduction to Theory & Communication Management. Yogyakarta: MedPress, 2009.