

THE EFFECTIVENESS OF EDUCATION BASIC LIFE SUPPORT (BLS) SIMULATION TOWARD INCREASING OF THE YOUTH RED CROSS STUDENT ABILITIES

Ni Nyoman Chrisna Purnama Devi, Baiq Nurainun Apriani Idris*, Supriyadi

Sekolah Tinggi Ilmu Kesehatan YARSI Mataram, Jl. Lingkar Selatan, Pagutan Barat, Mataram, Nusa Tenggara Barat 83361, Indonesia

[*bqainunapriani22@gmail.com](mailto:bqainunapriani22@gmail.com)

ABSTRACT

Heart failure is deadly disease and was still as the main cause of death in society, however, low level of knowledge about treating heart failure victims makes the crisis treatment was failed to help cardiopulmonary resuscitation (CPR). People's understanding, especially the younger generation, about basic life support needs to be developed and trained so that they can help people who suffered cardiac arrest anywhere. Objective: this research was to determine the effectiveness of education of basic life support simulation toward the increasing of students especially the youth of red cross teenagers of the school abilities. Method: The research design used was experimental with one group pre-test post-test design. Result: The statistical test used was Wilcoxon signed rank test to determine differences on knowledge levels before and after treatment. The research results obtained that p value of 0.000 (<0.05), it's showing that there is effectiveness of education through basic life support simulations in increasing the abilities of teenage red cross students. Conclusions: this research obtained that the simulation can improve teenage red cross student' s basic life support abilities.

Keywords: basic life support; heart failure; students; simulation

INTRODUCTION

Heart failure is a deadly disease and is still the leading cause of death in society and many people still do not know the signs and symptoms of respiratory failure and heart failure. The low level of knowledge about handling heart failure victims makes crisis treatment fail to help initiate cardiopulmonary resuscitation (CPR) so that a person's understanding, especially the younger generation, of basic life support (BLS) needs to be developed and trained so that they can help the general public who experience cardiac arrest anywhere (Syafei, 2021). Based on data from the Global Health Data Exchange (GHDx) in 2020, the number of cases of congestive heart failure in the world reached 64.34 million cases with 9.91 million (Lippi & Gomar, 2020). Based on RISKESDAS data in (2018), there is no exact figure for the number of cases of heart failure in Indonesia. However, about one third of all deaths in Indonesia are caused by cardiovascular disease. Based on research by the NTB Provincial Hospital (2022), there are no exact figures regarding heart failure, but out of 5 million NTB residents, 150 thousand people are at risk of developing the disease and of that number, 50,000 people are at risk of developing acute heart disease which can cause sudden death.

The Youth Red Cross (PMR) is the front line for helping with health problems in schools. Where students who are members of the organization should have more skills and knowledge than ordinary students regarding health, especially regarding basic life support. However, in reality, the youth red cross students are rarely exposed, some even do not know what basic life support is (Ngirarung et al., 2017). Basic life support (BLS) is an important ability or skill that must be possessed by all levels of society, not only health workers who work in hospitals. Skills or skills

are very much needed when performing basic life support by means of cardiopulmonary resuscitation. However, lay people are less exposed to events that require cardiopulmonary resuscitation (CPR), do not have competence in basic life support (BLS). Therefore, it is important to provide education using the right method related to the steps of CPR. The learning method with simulation is learning using an imitation situation in groups and it is hoped that this method can improve the intellectual aspect and cooperation between teams in solving problems both in terms of knowledge and skills (Putu Juni, 2019).

METHOD

This type of research is quantitative research, the research method is pre-experimental with a one group pretest-posttest research design. The characteristics of this study are describing and linking cause and effect by involving a group. This group was observed before being given treatment or intervention and then re-observed after being given treatment or intervention. The sampling technique in this study used the cluster random sampling technique and met the inclusion criteria of 18 respondents. The time of this research was carried out two weeks. For data collection in this study, research instruments were used in the form of knowledge questionnaires, skills checklists and observed ability the respondents that had been tested and declared valid and reliable to be used as research instruments.

RESULTS AND DISCUSSION

Respondent characteristics based on age and gender are shown in table 1 where the most age is 17 years and with female gender as many as 10. Age is one of the things that affects knowledge. Adolescence is a transition period that experiences very good cognitive improvement and the older the age, the more the ability to understand and think so that the knowledge obtained is better where the overall age of respondents is in middle adolescence.

Table 1.
 Distribution age and gender of respondent characteristics (n= 18)

Respondent characteristics	f	%
Age :		
17 yo	8	44.4
16 yo	6	33.3
15 yo	4	22.3
Gender :		
Girls	10	55.5
Boys	8	44.5

Table 2.
 Distribution level of knowledge respondents

Variable	f	%
Before intervention (Pre-test)		
Good level	0	0
Sufficient level	1	5.6
Low level	17	94.4
After intervention (Post-test)		
Good level	18	100
Sufficient level	0	0
Low level	0	0

Table 3.
 Distribution level of skills respondents

	Variable	f	%
Before intervention (Pre-test)	Good level	0	0
	Sufficient level	18	100
	Low level	0	0
After intervention (Post-test)	Good level	18	100
	Sufficient level	0	0
	Low level	0	0

Table 4.
 Distribution level of ability level respondents

	Variable	f	%
Before intervention (Pre-test)	Good level	0	0
	Sufficient level	17	64.4
	Low level	1	5.6
After intervention (Post-test)	Good level	18	100
	Sufficient level	0	0
	Low level	0	0

Table 5.
 Effectiveness of education basic life support (BLS) simulation toward increasing of the youth red cross student abilities

		N	Mean Rank	Sum of Ranks	<i>P value</i>
Level knowledge					
Pre-post	Negative ranks	0 ^a	0.00	0.00	0.000
	Positive ranks	18 ^b	9.50	171.00	
	Ties	0 ^c			
Level of skills					
Pre-post	Negative ranks	0 ^a	0.00	0.00	0.000
	Positive ranks	18 ^b	9.50	171.00	
	Ties	0 ^c			
Ability level					
Pre-post	Negative ranks	0 ^a	0.00	0.00	0.000
	Positive ranks	18 ^b	9.50	171.00	
	Ties	0 ^c			

From tables 2, 3 and 4 it can be seen that there are differences in knowledge, skills and abilities before and after the intervention was carried out. Knowledge, skills and abilities are components in increasing a person's level of knowledge. Simulation education carried out to see changes in knowledge and behavior can improve the knowledge of youth red cross students. This can also be seen in table 5 where the results using the Wilcoxon method show changes in knowledge, skills and abilities with the results of the Wilcoxon non-parametric statistical test, the P Value results were 0.000 (<0.05), which indicates that H₀ is rejected and H_a is accepted, namely there is a

significant influence before and after providing education basic life support simulations on increasing both knowledge, skills and abilities of the youth red cross students.

Based on the results of the study, it can be seen that the analysis of the average skill level before and after being given a simulation education intervention. This shows that there is an increase and difference in skill levels before and after the simulation intervention. This is in line with research conducted by (Khalilati, 2020) which concluded that there was a difference and change in the average skills of senior high school students before and after being given health education with simulation media. By using the simulation method, respondents seemed to easily understand the information provided. In addition to the method used being right, the respondents' desire to receive information and increase their knowledge was very good so that there was an increase in skills after being given a simulation intervention.

This means that there is a difference in the average value before and after being given a simulation intervention. The analysis of the average level of ability before and after being given a simulation education intervention. This shows that there is an increase and difference in the level of ability before and after the simulation intervention. This is in line with research conducted by (Khalilati, 2020) which concluded that there was a difference and change in the average ability of senior high school students before and after being given health education with simulation media. The average increase in ability in students who were respondents before and after being given health education, the respondents seemed to easily understand the information provided. In addition to the method used being right, the respondents' desire to receive information and increase their knowledge was very good so that there was an increase in ability after being given a simulation intervention. This means that there is a difference in the average value before and after being given a simulation intervention.

CONCLUSION

Based on the results of research conducted in the Batang, Kajang, Herlang Health Center working area of 60 respondents with the research title of the relationship between taboo food culture and the nutritional status of pregnant women in the Konjo community in Bulukumba Regency, it can be concluded that the taboo food culture of the Konjo community is still thick in the region and there is a relationship with nutritional status according to the chi-square test conducted using SPSS with a p-value of 0.002, so there is a relationship between taboo food culture and nutritional status in pregnant women in the Konjo community in Bulukumba Regency.

REFERENCES

- Abdillah, P. P. (2020). The Effect of Providing Basic Life Support Training on Increasing Knowledge and Skills in Students of Smkn 1 Geger Madiun (Doctoral dissertation, STIKES BHAKTI HUSADA MULIA MADIUN).
- American Heart Association. (2020). Main Focus of the 2015 American Heart Association Guidelines Update for CPR and ECC
- Arsyad, Azhar. (2018). Learning Media. 15th edition. Jakarta: Rajawali Pers

- Chaplin, Hasan, & Robbins, S. P. (2015). In Syafaruddin, Education and Community Empowerment (pp. 71-72). Medan: Perdana Publishing.
- Christian Rompis, D.P.(2019). Relationship between the level of maternal knowledge about children's dental health and the severity of caries in kindergarten children in Tahuna City. e-GiGi Journal (eG), Volume 4 number 1, 47-48
- Colquitt, Jason A., Jeffery A. LePine, and Michael J. Wesson, 2015. Organizational Behavior: Improving Performance and Commitment in the Workplace. New York: McGraw Hill
- Fatmawati, B. R., Suprayitna, M., & Prihatin, K. (2019). The Effectiveness of Basic Life Support Education with Audiovisual Media and Practice on the Level of Knowledge and Skills of Nursing Study Program Students Level D. III Stikes Yarsi Mataram in 2018. Qamarul Huda Health Journal, 7(1), 6-12.
- Fauzan Suhaimi, Nurlatifah, Nada Elize, Ichsan Budiharto, Student of Study Program, Faculty of Nursing, University Medicine, Faculty of Nursing, And University Medicine. 2019. "Effectiveness Between Finger-Holding Relaxation and Deep Breathing Relaxation on Anxiety Levels of Orthopedic Pre-Surgery Patients at Dr. Soedarso Pontianak Hospital."
- Handayani, Ririn.2020. Social Research Methodology. Yogyakarta: Trussmedia Grafika.
- Hanik (2018). The Influence of Basic Life Support (BLS) Health Education on the Knowledge Level of Students of SMAN 1 Wonoayu Sidoarjo. Nursing Study Program, Faculty of Medicine, Brawijaya University. Malang.
- Hardisman. (2014). Emergency Medical Practice. Yogyakarta: Gosyen Publishing.
- Institute for Health Metrics and Evaluation. (2020). Global Health Data Exchange (GHDx). Institute for Health Metrics and Evaluation (IHME).
- I Putu Juni Andika, et al. (2019). Types of Simulation Methods Applied in Learning Systems. Nursing Education, Yogyakarta.
- J. Umbaran, Definition, Methods, and Types of Simulation. Jakarta: Academia, 2018.
- Khalilati, N., Firdaus, S., & Rukmana, H. (2020). Effectiveness of Basic Life Support Skills (Bhd) Using Simulation Methods With Student Abilities at Sman 1 Tabunganen. Health Dynamics: Journal of Midwifery and Nursing, 11(2), 452-461.
- Kleinman, Monica.E, Brennan, Erin.E, Goldberger, Zachary.D, Swor, Robert.A, Terry, Mark, Bobrow, Bentley.J, Gazmuri, Raul.J, Rtaves, Andrew.H, Rea, Thomas. (2015). Part 5: Adult Basic Life Support and Cardiopulmonary Resuscitation Quality: 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Journal of the American Heart Association.
- Kronick, S.L, Michael C. Kurz, Steve Lin, Dana P. Edelson, Robert A. Berg, John E. Billi, Jose G. Cabanas, David C. Cone, Deborah B. Diercks, James (Jim) Foster, Reylon A. Meeks, Andrew

- H. Travers, Michelle Welsford. (2015). Part 4: Systems of Care and Continuous Quality Improvement 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Journal of the American Heart Association*.
- Lippi, G., & Gomar, F. S. (2020). Global epidemiology and future trends of heart failure. *AME Medical Journal*, 5(15), 1–6.
- Mancini, M.E, Douglas S. Diekema, Theresa A. Hoadley, Kelly D. Kadlec, Marygrace H. Leveille, Jane E. McGowan, Michele M. Munkwitz, Ashish R. Panchal, Michael R. Sayre, Elizabeth H. Sinz. (2015). Part 3: Ethical Issues 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Journal of the American Heart Association*.
- Maulana, M. A., Hartono, D., & Hamim, N. (2023). The Effect of Basic Life Support Education Using Audio Visual and Simulation on the Bystander Ability of Students at SMA Zainul Hasan 1 Genggong. *Mandira Cendikia Health Science Journal*, 2(9), 18-29.
- Ngirarung, S., Mulyadi, N., & Malara, R. (2017). The effect of cardiopulmonary resuscitation (CPR) simulation on the level of student motivation to help cardiac arrest victims at SMA Negeri 9 Binsus Manado. *UNSRAT Nursing Journal*, 5(1), 108532.
- Ningsih, V. S. (2018). The Effect of Health Education on the Level of Knowledge of Young Women about BSE at SMK Negeri 1 Godean.
- Nurmey, S. W., & Winarti, Y. (2016). The Difference in Effectiveness of Basic Life Support Health Education with the Lecture Method Through Image and Audio-Visual Media on the Level of Knowledge of Grade XI Students about Basic Life Support at SMAN 1 PPU.
- Nursalam. 2017. *Nursing Science Research Methodology: Practical Approach*: Jakarta: SalembaMedika
- Notoatmodjo, S. (2017) *Health Research Methodology*. Jakarta: EGC.
- Pro Emergency. *Basic Trauma Life Support*. Cibinong: Pro Emergency; 2018.
- Resuscitation Council (UK), (2019). *Resuscitation Guidelines*.
- Basic Health Research (Riskesdas) (2018). *Health Research and Development Agency of the Ministry of the Republic of Indonesia in 2018*.
- Rahmawati, I., Pawiliyah, Fernalia, Ichsan Dwi Putra, M., & Yuanda, E. (2022). Simulation-Based Basic Life Support Training for Nursing Students. *Community Service Journal*, 1, 22–29.
- Sugiyono. (2016). *Quantitative, Qualitative Research Methods and R&D*. Bandung: PT Alfabet.
- Sugiyono P.D., (2018) *Quantitative and Qualitative Research Methods and R&D*. Bandung: PT Alfabet.

Susilo, J. (2018). Guidelines for Management of KSR TSR Volunteers. PMI Headquarters.

Susilo, T., & Mustain, M. (2022). The influence of health education on basic life support (BHD) on the level of knowledge of PMR members at SMK N 1 Bawen. *Journal of Health and Medical Service*, 1(1), 27-36.

Suriasumantri in Nurroh (2017). *Knowledge Concept*. Jakarta: Salemba Medika

Syafei, A. (2021). Health Education on Life Support. *Journal of Health and Development*, 11(21), 6–13.

Tilong, A.D. (2014). *Complete Book of First Aid for Various Diseases*. Yogyakarta: FlashBook.

Wissenberg, M. et al. (2018). Association of national initiatives to improve cardiac arrest management with rates of bystander intervention and patient survival after outofhospital cardiac arrest. *Jama*, 310 (13), pp. 1377–84.

WHO (2019). *Cardiovascular Diseases*. World Health Organization
Sediaoetama AD. (2019) *Ilmu gizi*. Jakarta: PT Dian Rakyat.

Sukandar D. (2020) Makanan tabu di Jeneponto Sulawesi Selatan. *Jurnal Gizi dan Pangan*.

