

Original Article

The Health Education Regarding Basic Life Support (BLS) According To AHA 2020 On The Level Of Knowledge And Skills Of Health Personnel

Kamesywor¹, Eka Haryanti¹

¹ Poltekkes Kemenkes Palembang Prodi D III Keperawatan Lahat, South Sumatra, Indonesia.

ARTICLE INFO

Article History

Submit : Jun 11, 2022

Revised : Nov 6, 2022

Accepted : Dec 18, 2022

Keywords:

Basic Life Support, Knowledge, Skills.


ABSTRACT

Background: An emergency is a condition or situation in which there is a threat of danger or where the negative impact of that danger has occurred, which results in further damage. These emergencies and emergencies require quick action outside of daily activities using different special methods and procedures. This research aims to determine the influence of health education regarding basic life support according to the AHA 2020 on the level of knowledge and skills of health workers at the Pagar Agung Lahat Community Health Center in 2023.

Methods: The research method used was quasi-experimental with a one-group pretest-posttest design. The total sample was 25 health workers. Based on statistical output results paired with Sample Delivery of results from the pretest and posttest, this shows an increase in the knowledge of Health Officers at the Pagar Agung Lahat Community Health Center.

Results: The T-test results are valuable $p=,000 (<.0.5)$, so it can also be concluded that health education influences basic life support, according to AHA 2020. Meanwhile, for skills before the intervention, data on skilled Health employees was 8%, whereas after the intervention was given, there was an increase, which is quite significant at 80% for the skilled. Based on test Paired Sample T-test From the $p\text{-value} = 0.000 (<.0.5)$, it can also be concluded that there is an influence of health education regarding basic life support, according to AHA 2020 on the skills of Health Workers at the Pagar Agung Lahat Community Health Center in 2023.


Conclusion: there is an influence health education to level knowledge and skills on health workers at the Pagar Community Health Center Great Everything.

 Corresponding Author


: Kamesywor^o

 Affiliation

: Poltekkes Kemenkes Palembang Prodi D III Keperawatan Lahat, South Sumatra, Indonesia

 Email

: kamesywor^o260473@gmail.com

 Cite this as

: Kamesywor^o, K., & Haryanti, E. (2023). The Health Education Regarding Basic Life Support (BLS) According To AHA 2020 On The Level Of Knowledge And Skills Of Health Personnel. Journal of Applied Nursing and Health, 5(2), 300–306. <https://doi.org/10.55018/janh.v5i2.161>

Introduction

An emergency is a condition or situation in which there is a threat of danger or where the negative impact of that danger has occurred, which results in further damage. These emergencies require quick action outside of daily activities using

different unique methods and procedures (Prof. Aryono D 2016). Based on Law No. 44 of 2009, an emergency is a patient's clinical condition requiring immediate medical action to save life and prevent further disability. Emergency conditions can occur anywhere, anytime, and health workers



must handle these problems. Emergency assistance must be carried out quickly, precisely, and carefully to prevent death and disability. The principle of emergency patient care is that time is life (Time-saving is life-saving) (Humardani, 2016). Emergency conditions include heart attacks (Kleinman et al., 2015; Koster et al., 2010; Perkins et al., 2015).

Data from the World Health Organization (WHO) states that heart attacks are still the number one killer of humans in developed and developing countries, contributing to 60 percent of all deaths. Health workers spearheading improving health status should increase their knowledge to support behavior in providing health services (Berg et al., 2010; Merchant et al., 2020; Olasveengen et al., 2021)

The literature results show the effect of life support training on knowledge and preparatory school teachers in Sheben Elkon City Menoufia Gevonnernorate, Egypt. A sample of 300 teachers participated in the research, using random sampling techniques, with the dominant gender being male (79%) and middle social status (84.3%). The average value of pretest knowledge and practice (2.04 ± 2.4) & (3.44 ± 0.85). The post-test knowledge and practice scores were (10.1 ± 1.8) & (7.46 ± 1.4); thus, the basic life support program successfully increased teachers' knowledge and practice in schools. This can also be seen in Vina Nirmalasari and Wiwin Winarti's research on the Effect of BLS Training on the Knowledge and Skills of Public Health Students. The analysis used Paired t-test results significantly influence BLS training, knowledge ($p=0.000$) and skills ($p=0.000$). This shows a significant influence between BLS training and the knowledge and skills of HMKM UPN "Veteran" Jakarta. Apriani and Abdul Safei (2021) also researched Health Education

regarding Basic Life Support using the Simulation Method on Student Skills. The research design used a pre-experiment with a one-group pre-test and post-test design approach. The research results show an influence of health education regarding Basic Life Support using the simulation method on student skills with $p\text{-value} = 0.000$.

Based on the primary survey, bare living rock is an effort to keep the airway open to support breathing and circulation without using assistive devices (Auble et al., 1995; Kramer, 2012; Morrison et al., 2009).

The Pagar Agung Community Health Center was founded in 1976 when it was initially part of the working area of the Bandar Jaya Community Health Center. Based on the Decree of the Regent of Lahat regarding the division of the working areas of Community Health Centers within the Lahat District, the Working Areas of the Pagar Agung Community Health Center were divided into several Community Health Center Working Areas, including the Selawi Community Health Center in 2009, the Pseksu Community Health Center and the Pagar Agung Community Health Center with the status of becoming UPT for the Pagar Agung Outpatient Health Center. Pagar Agung Community Health Center oversees two villages and four sub-districts in the Pagar Agung Community Health Center working area, including Pagar Sari Village and Pagar Negara Village, which geographically and in terms of health service coverage are closer to the Pagar Agung Community Health Center working area. Therefore, these two villages are included in the area. Pagar Agung Community Health Center UPT work. UPT Puskesmas Pagar Agung is an area consisting of land and hills. Tropical forests and smallholder plantations still cover some of the land. They crossed the middle road of Sumatra.

Methods

The research design used is pre-experimental research with a draft design one *group pretest-posttest design*; that is, this design does not have a comparison group (control), but at least a first observation (pretest) be carried out, which allows the researcher to test changes that occur after the experiment (treatment). The research was conducted at the Pagar Agung Community Health Center, Lahat Regency. The population in this study were health workers at the Pagar Agung Lahat Community Health Center. The research sample was 25 health workers. This research sample included subjects who met the criteria and exclusions. Data collection techniques use questionnaires. The research data was analyzed descriptively by frequency, and hypothesis testing was carried out using a paired t-test. The questionnaire data has a normal distribution. The data is usually distributed from the results of the data normality test using Kolmogorov Smirnov get $value_{asymp\ sig} (2\text{-tailed}) 0.120 > 0.005$.

Results

Table 1. Knowledge Before Health Education.

Category	N	%
Good	5	20
Enough	11	44
Less	9	36

Table 2. Knowledge After Health Education.

Category	N	%
Good	16	64
Enough	8	32
Less	1	4

Table 3. Skills before and after Health Education.

Skills	Before		After	
	n	%	n	%
Skilled	2	8 %	20	80%
Enough Skilled	8	32 %	5	20%
Less Skilled	15	60 %		
Total	25	100 %	25	100 %

Table 4. Effect of Health Education about BLS According to AHA 2020 on the Knowledge of Health Workers at the Pagar Agung Lahat Community Health Center.

Variable	N	P Value
Before Intervention	25	0,000
After Intervention	25	

The data above showed that the level of knowledge was sufficient for 11 employees (44%), less than nine employees (36%), and suitable for five employees (20%). The data above shows that the level of knowledge is suitable for 16 employees (64%), sufficient for eight employees (32%), and less than one employee (4%). The category with the most suitable knowledge was 64%. Based on the table above, in the skills variable before being given education about BLS, there were 15 employees (60%) in the less skilled category, eight employees (32%) were exceptionally skilled, and two employees (8%) were skilled. After being given BLS simulation education, the employee skill level increased, with 20 employees (80%) being skilled and five (20%) being quite skilled. The results of the T-test analysis have a value of $000 (<0.5)$ on the test result *Sample T-Test* that is, if H_a is accepted and H_o is rejected, it can also be concluded that education about AHA 2020 Basic Life Support influences knowledge.

The results of the T-test analysis have a value of 000 (<0.5). Then, the test result aired *Sample T-Test*: if H_a is accepted and H_o is rejected, it can also be concluded that education about AHA 2020 Basic Life Support influences skills.

Discussion

The results of the research that has been carried out show that the average level of knowledge of respondents before implementing health education regarding AHA 2020 Basic Life Support was sufficient or less, with percentages of 44% and 36%. This can be caused by a lack of information obtained by health workers. The information a person obtains can influence their life, which will cause changes or increases in knowledge. The more information, the more knowledge they will gain (Notoatmojo, 2016). Based on researchers' observations of the results of knowledge among health workers at the Pagar Agung Lahat Community Health Center, it was caused by many factors: for example, the Covid-19 disaster, lack of BLS or BTCLS training in Lahat Regency, the extended distance from the Provincial Center to Lahat Regency which is around 6 hours by road. According to Asadi, Ziabari, Onsef Kasmaei (2021), the lack of interest in learning and updating primary life support material is due to time constraints and very tight work hours, lack of equipment to train resuscitation skills such as mannequins that meet standards, lack of training schedule. BLS or no regulations that require nurses to have a BLS certificate.

Meanwhile, after intervention in the form of health education regarding AHA 2020 Basic Life Support, there was a significant increase in knowledge, namely 16 employees (64%), just eight employees (32% 0 and less than one employee (4%). (Notoadmodjo, 2010) said that changes in knowledge and skills are caused by the

provision of information, which includes a learning process. The influence of primary life support health education on the knowledge of members of the student activity unit of the Undergraduate Nursing Health Team. STIKES Dharma Husada Bandung that there is a significant value between before the health education intervention was carried out, 64% was in the poor category, and after the intervention, 44% was in the excellent category. Factors that influence good knowledge are sources of information. Health education regarding essential life support (BLS) on the knowledge of essential life support (BLS) of cleaning staff at STIKES Dharma Husada Bandung, showing that there was an influence between knowledge before and after being given health education, obtained p value = $0.000 < 0.05$ (Susilo et al., 2022).

Regarding the skills of health workers, after the intervention was carried out in the form of health education in the form of the AHA 2020 Basic Life Support simulation, there was a very significant increase where at the beginning, only two employees (8%) were skilled, after the intervention there were 20 employees (80%) who were skilled. The results of the T-test analysis have a value of 000 (<0.5). Then, the test result shows that if H_a is accepted and H_o is rejected, it can also be concluded that education about AHA 2020 Basic Life Support influences skills. This aligns with research conducted by Siti Ngasih (2019) on the Relationship between Knowledge and Basic Life Support (BLS) Skills of Pre-hospital Staff. Referring to RST Dr. Soedjono Magelang, this research shows a relationship between knowledge and essential life support (BLS) skills. Pre-hospital staff refers to RST Dr. Soedjono Magelang with p-value = 0.002). Abdillah Pujo Priosusilo (2019) researched the effect of providing basic life support training on

increasing knowledge and skills in SMKN 1 Geger Madiun students. Using test analysis, it was found that providing basic life support training increased knowledge and skills in students at SMKN 1 Geger Madiun. Wilcoxon statistics obtained p value = $0.000 < 0.005$.

Essential life support is one of a series of aids for cardiac arrest and respiratory arrest consisting of IHCA (In-Hospital Cardiac Arrest) and OCHA (Out Of Hospital Cardiac Arrest), which consists of emergency response activation, high-quality CPR, defibrillation, advanced resuscitation, post-operative care. Cardiac arrest and recovery. Essential life support is an important series and cannot be separated ([Brooks et al.](#), 2016; [Handley et al.](#), 2001; [Waalewijn et al.](#), 2002; [Wang et al.](#), 2018).

Based on the research results and theoretical explanation above, the researchers assume that providing health education about Basic Life Support (BLS) can improve the skills of health workers in providing first aid to anyone in an emergency, especially to people experiencing cardiac and respiratory arrest. This is an indication for administering BLS. The more often health workers are exposed to health education about Basic Life Support (BLS), the better or higher the skill level of health workers in providing BLS emergency first aid to patients with cardiac and respiratory arrest ([Spooner et al.](#), 2007).

Conclusion

Community Health Center, it can be concluded that Health workers before giving it health education level of knowledge enough Health workers, after giving it health education level of knowledge good, there is an influence health education to level knowledge and skills on health workers at the Pagar Community Health Center Great Everything.

Authors Contributions

The author carries out tasks from data collection, data analysis, and discussions to making manuscripts.

Conflicts of Interest

There is no conflict of interest.

Acknowledgment

Thank you to the respondents and to those who have helped in this research

References

- Auble, T. E., Menegazzi, J. J., & Paris, P. M. (1995). Effect of Out-of-Hospital Defibrillation by Basic Life Support Providers on Cardiac Arrest Mortality: A Metaanalysis. *Annals of Emergency Medicine*, 25(5), 642–648. [https://doi.org/10.1016/S0196-0644\(95\)70178-8](https://doi.org/10.1016/S0196-0644(95)70178-8)
- Berg, M. D., Schexnayder, S. M., Chameides, L., Terry, M., Donoghue, A., Hickey, R. W., Berg, R. A., Sutton, R. M., & Hazinski, M. F. (2010). Part 13: Pediatric basic life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*, 122(SUPPL. 3), S862–S875. <https://doi.org/10.1161/CIRCULATIONAHA.110.971085>
- Brooks, S. C., Simmons, G., Worthington, H., Bobrow, B. J., & Morrison, L. J. (2016). The PulsePoint Respond mobile device application to crowdsource basic life support for patients with out-of-hospital cardiac arrest: Challenges for optimal implementation. *Resuscitation*, 98, 20–26. <https://doi.org/10.1016/j.resuscitation.2015.09.392>
- Handley, A. J., Monsieurs, K. G., & Bossaert, L. L. (2001). European resuscitation council guidelines 2000 for adult basic

- life support - a statement from the basic life support and automated external defibrillation working group and approved by the executive committee of the European Resuscitation Council. *Resuscitation*, 48(3), 199–205. [https://doi.org/10.1016/S0300-9572\(00\)00377-4](https://doi.org/10.1016/S0300-9572(00)00377-4)
- Humardani, A. (2016). *Hubungan Pengetahuan Tentang Peran Perawat Ugd Dengan Sikap Dalam Penanganan Pertolongan Pertama Pada Pasien Gawat Darurat Kecelakaan Lalulintas*. Universitas Muhammadiyah Ponorogo.
- Kleinman, M. E., Brennan, E. E., Goldberger, Z. D., Swor, R. A., Terry, M., Bobrow, B. J., Gazmuri, R. J., Travers, A. H., & Rea, T. (2015). Part 5: Adult basic life support and cardiopulmonary resuscitation quality: 2015 American Heart Association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*, 132(18), S414–S435. <https://doi.org/10.1161/CIR.0000000000000259>
- Koster, R. W., Baubin, M. A., Bossaert, L. L., Caballero, A., Cassan, P., Castrén, M., Granja, C., Handley, A. J., Monsieurs, K. G., Perkins, G. D., Raffay, V., & Sandroni, C. (2010). European Resuscitation Council Guidelines for Resuscitation 2010 Section 2. Adult basic life support and use of automated external defibrillators. *Resuscitation*, 81(10), 1277–1292. <https://doi.org/10.1016/j.resuscitation.2010.08.009>
- Kramer, E. P. (2012). *101 Successful networking strategies*. Nelson education.
- Merchant, R. M., Topjian, A. A., Panchal, A. R., Cheng, A., Aziz, K., Berg, K. M., Lavonas, E. J., Magid, D. J., & Adult Basic and Advanced Life Support Neonatal Life Support, Resuscitation Education Science, and Systems of Care Writing Groups, P. B. and A. L. S. (2020). Part 1: Executive summary: 2020 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*, 142(16_Suppl_2), S337–S357. <https://doi.org/https://doi.org/10.1161/CIR.0000000000000918>
- Morrison, L. J., Verbeek, P. R., Zhan, C., Kiss, A., & Allan, K. S. (2009). Validation of a universal prehospital termination of resuscitation clinical prediction rule for advanced and basic life support providers. *Resuscitation*, 80(3), 324–328. <https://doi.org/10.1016/j.resuscitation.2008.11.014>
- Notoadmodjo, S. (2010). *Promosi Kesehatan dan Ilmu Perilaku*. Rineka Cipta.
- Olasveengen, T. M., Semeraro, F., Ristagno, G., Castren, M., Handley, A., Kuzovlev, A., Monsieurs, K. G., Raffay, V., Smyth, M., Soar, J., Svavarsdottir, H., & Perkins, G. D. (2021). European Resuscitation Council Guidelines 2021: Basic Life Support. *Resuscitation*, 161, 98–114. <https://doi.org/10.1016/j.resuscitation.2021.02.009>
- Perkins, G. D., Handley, A. J., Koster, R. W., Castrén, M., Smyth, M. A., Olasveengen, T., Monsieurs, K. G., Raffay, V., Gräsner, J.-T., Wenzel, V., Ristagno, G., Soar, J., Bossaert, L. L., Caballero, A., Cassan, P., Granja, C., Sandroni, C., Zideman, D. A., Nolan, J. P., ... Greif, R. (2015). European Resuscitation Council Guidelines for Resuscitation 2015. Section 2. Adult basic life support and automated external defibrillation. *Resuscitation*, 95, 81–99. <https://doi.org/10.1016/j.resuscitation.2015.07.015>
- Spooner, B. B., Fallaha, J. F., Kocierz, L.,

- Smith, C. M., Smith, S. C. L., & Perkins, G. D. (2007). An evaluation of objective feedback in basic life support (BLS) training. *Resuscitation*, 73(3), 417–424. <https://doi.org/10.1016/j.resuscitation.2006.10.017>
- Susilo, T., Maksum, & Mustain, M. (2022). Pengaruh pendidikan kesehatan tentang bantuan hidup dasar (BHD) terhadap tingkat pengetahuan anggota PMR di SMK N 1 Bawen. *Jurnal Abdi Kesehatan Dan Kedokteran*, 1(1 SE-Articles), 27–36. <https://jakk.candle.or.id/index.php/jakk/article/view/7>
- Waalewijn, R. A., Nijpels, M., Tijssen, J. G., & Koster, R. W. (2002). Prevention of deterioration of ventricular fibrillation by basic life support during out-of-hospital cardiac arrest. *Resuscitation*, 54(1), 31–36. [https://doi.org/10.1016/S0300-9572\(02\)00047-3](https://doi.org/10.1016/S0300-9572(02)00047-3)
- Wang, P.-Y., Hung, Y.-N., Smith, R., & Lin, C.-C. (2018). Changes in the Use of Intensive and Supportive Procedures for Patients With Stroke in Taiwan in the Last Month of Life Between 2000 and 2010. *Journal of Pain and Symptom Management*, 55(3), 835–842. <https://doi.org/10.1016/j.jpainsymman.2017.11.024>