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Correlation Analysis of Knowledge and Education Against the Implementation of Basic Life Support (BHD) in Patients of *Cardiac Arrest* by Nurses in Emergency Installation and ICU of General Hospital of Dr. Soedarso Pontianak

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KEYWORDS

Cardiac arrest
BHD
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Abstract *Cardiac arrest* is a condition where the heart stopped abruptly, and this condition usually occurs in someone who has had heart disease or has never experienced it. In terms of clinical, someone who is experiencing a state of cardiac arrest found no signs of a palpable pulse and other signs of circulation. Efforts in terms of handling cases of the cardiac arrest itself need the role of nurse, one cardiac arrest treatment efforts by nurses are implementing Basic Life Support. The factors that affect the implementation of BHD itself is knowledge and education. The purpose of this research is analizing the correlation between knowledge and education on the implementation of BHD in cardiac arrest patients by nurses in the Emergency Installation and ICU of the General Hospital of Dr. Soedarso Pontianak. This study uses a cross-sectional approach with descriptive corelational type. The population in this study are 56 nurses. Sampling technique using total sampling. The result of this study, based on two variables: the knowledge and education have the same p-value that is p=0.000 or α <0.05. It means that there is a correlation between knowledge and education on the implementation of BHD in patients with cardiac arrest in General Hospital of Dr. Soedarso Pontianak.

Introduction

Cardiac arrest is a condition where the heart stopped abruptly, and this situation usually occurs in someone who has had heart disease or someone who has never experienced it. In terms of clinical, someone who is experiencing a state of cardiac arrest found no signs of a palpable pulse and other signs of circulation (Mutaqqin, 2009). Health problems that may cause most of the deaths experienced by the people in the world are cardiac arrest. Cardiac arrest patients themselves are usually more often experienced by adults (Lenjani *et al*., 2014). The prevalence of cardiac arrest incidence rates ranged from 10 out of 10,000 normal people and often occur at the age of 35 years where every year reach up to 300,000-350,000 cases of cardiac arrest (PERKI, 2016).

Efforts in terms of handling cases of cardiac arrest themselves need the role of nurse (Turangan *et al*., 2017). One effort to handle cardiac arrest by the nurse is the implementation of the Basic Life Support to increase the chance of living in such patients (Travers *et al*., 2010). According to Berg *et al*. the (Field *et al*., 2010) states that BHD is a very important foundation that will serve to save lives. The BHD process itself includes, among others, the identification of cardiac arrest and activation system of Emergency Medical Services (EMS), early CPR, defibrillator using automatic defibrillator paddles or so-called Automated External Defibrillator (AED).

Quality of cardiopulmonary resuscitation (CPR) can have a huge influence on the survival rate of a person, should be known that 10 to 30% of blood flow to the heart and 30 to 40% of

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the flow of blood flowing to the brain can only happen if CPR has been conducted following SOP. Thus, the nurse as a provider of resuscitation should be able to provide CPR with the best quality and as early as possible. Nurses have an important role as someone who gives immediate relief to the problem of cardiac arrest patients both inside and outside of the hospital (Glaa & Chick, 2011).

Health workers, especially nurses required basic skills in the management of cardiac arrest or handling problems that BHD/BLS (Lee & Low, 2010). The success of the administration of the CPR course is influenced by several factors: such as knowledge, and education. The understanding of knowledge and skills when dealing with cases of cardiac arrest can cause a significant impact in increasing the survival rate in cases of cardiac arrest (Glaa & Chick, 2011). Nurse is a major component of a health care unit, where the change from a quality of care and a nursing process would be perceived by the consumer. Therefore nurses are expected to master the concepts, theories, and practices applied following the process of learning that has been acquired. According to (Maliono, 2007) the level of education is a factor that affects the level of knowledge of the person. Increasing the person's level of education it is easy to receive and equalize novelties. Education itself is a process of expanding the personality, the ability of a person inside or outside the school.

The case of the cardiac arrest itself in General Hospital of Dr. Soedarso Pontianak based on the results of the annual report (LAPTAH) in 2016-1017 has increased the incidence by 50% with the number of 36 cases of cardiac arrest in 2016 and 54 cases of cardiac arrest in 2017. Based on the observations that have been carried out on 10 nurses, 60% of nurses have not obtained the appropriate action following SOP especially on the High Quality of CPR. This study aims to determine the correlation between knowledge and education on the implementation of BHD in cardiac arrest patients by nurses.

Methodology

This study using the cross-sectional approach with descriptive corelational type. The population in this study are 56 nurses. Sampling technique using total sampling because the population is less than 100. The study is conducted at Hospital Dr. Soedarso Pontianak on 21 December to 1 January 2019. This study uses two types of data, they are primary data and secondary data. The primary data of the data retrieved from researchers measured subjects after administration of a questionnaire and SOP on Basic Life Support. Secondary data is not obtained directly, for example in the form of the number of patients whose records admission and discharge patients, age, gender, and emergency training. The bivariate analysis using the Spearman test and multivariate analysis using multiple linear regression.

Results

The following are study results that were conducted from 21 December 2018 to 1 January 2019.

Table 1. Distribution of Respondents According to Gender, Age, and Education (n = 56)

Characteristics	Category	Frequency	Percentage%
Gender	Male	28	50
	Female	28	50
Age	<40 years	38	67.9
	>40 years	18	32.1

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Characteristics	Category	Frequency	Percentage%
Education	D3	44	78.6
	S1 + Nurses	12	21.4

Sources: Primary data (2019)

According to Table 1 obtained data that the gender of the respondents between the male and female are equal, with a total number of 28 male and 28 female (50%). For the age of the respondents found the number of respondents that had aged <40 years old as many as 38 people (67.8%), while respondents aged>40 years old as many as 18 respondents (32.1%), for the highest education level of respondents most of them are D3 Nursing with several 44 people (78.6 %), S1+nurses with several 12 people (21.4%).

Table 2. Distribution of respondents according to knowledge, and the implementation of the BHD, (n = 56)

Variable	Mean	Median	Min-Max	SD
Knowledge	17:52	17	15-20	1:38
Implementation of BHD	12:30	12:00	8-14	1.65

Sources: Primary data (2019)

According to Table 2, obtained middle value (median) of nurse's knowledge obtained a value of 17 with the lowest value of 15. The median of BHD implementation obtained a value of 12 with the lowest value of 8 and the lowest value of 14.

Table 3 Correlation Between Knowledge Against BHD Implementation by Nurses in the ER and ICU of General Hospital of Dr. Soedarso Pontianak (n=56)

	Implementation of BHD
Knowledge	r=0.824
	p=0.000 *

* Significant at p-value <0.05

Statistical test results obtained by Table 3, p=0.000 (α <0.05) can be interpreted that there is a significant correlation between knowledge and BHD implementation by the nurse in the General Hospital of Dr. Soedarso Pontianak. The correlation between knowledge with BHD implementation shown the correlation with the strength of the correlation is very strong, where (r=0.824) and positive pattern which means the higher knowledge it will be better the BHD implementation by the nurse in General Hospital of Dr. Soedarso Pontianak.

Table 4. Correlation Between Education Against BHD Implementation By Nurses in the ER and ICU of General Hospital of Dr. Soedarso Pontianak (n=56)

	Implementation of BHD
Education	r=0.499
	p=0.000 *

* Significant at p-value <0.05

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Statistical test results obtained by Table 4 p=0.000 (α <0.05) can be interpreted that there is a significant correlation between education and BHD implementation by the nurse in the General Hospital of Dr. Soedarso Pontianak. The correlation between education and BHD implementationshown the correlation with the strength of the correlation is strong enough, where (r=0.499) and positive pattern which means the higher education will be better the BHD implementation by the nurse in General Hospital of Dr. Soedarso Pontianak.

Discussion

Correlation Knowledge against Basic Life Assistance (BHD) Implementation in patients with cardiac arrest by nurses in the Emergency Installation and ICU of the General Hospital of Dr. Soedarso Pontianak.

The results of this study indicate a link between the knowledge of the implementation of BHD in patients with cardiac arrest in the Emergency Installation and ICU of General Hospital Dr. Soedarso Pontianak, with a p-value of p=0.000 (α<0.05). In this study, the questions asked to the respondents related to the knowledge about BHD there are as many as 20 indicators about BHD, but in practice, there are still some respondents who are still wrong in answering the questionnaire related to the question on high-quality CPR, ventilation administration and implementation process of the CPR. Errors in answering these questions according to the results of research that said that if the retention of the implementation of the basic life support is generally low, particularly true of the chest compression and rescue breathing. In research (Lim *et al*., 2014) also stated most of the respondents did not implement the provision of effective ventilation it is due to a lack of knowledge and skills in implementing BHD. This statement is following the research of (Meaney *et al*., 2013) says that the need for oxygen in the metabolic processes will be the big drop when a person experiencing cardiac arrest and for doing CPR.

According to the results of research conducted in the Emergency Installation and ICU of General Hospital of Dr. Soedarso, researchers found almost most nurses already know the implementation of basic life support. Such knowledge can usually be obtained from respondents from various sources, such as books, education, and media.

Knowledge is important and needed by nurses in providing nursing services. A person's knowledge also cannot be separated from the age factor of that person. Based on this study, it was found that 67.9% or about 38 respondents were in the age range <40 years and as many as 32.1% or about 18 respondents aged >40 years, where the results of the questionnaire with the highest score were more dominantly obtained by respondents with age ranges <40 years compared to respondents who were >40 years old. At the age of <40 years it is said to be young adulthood, at this age an individual should spend a lot of time reading, because by reading they can optimize their intellectuals. At this young adult age, they also have no decrease in intellectual abilities. Age can also influence one's mindset and capture power, the more a person ages, the person's mindset will develop, and the better the knowledge.

Correlation Education against Basic Life Assistance (BHD) Implementation in patients with cardiac arrest by nurses in the Emergency Installation and ICU of the General Hospital of Dr. Soedarso Pontianak.

The results of this study indicate the correlation between education against the implementation of BHD in patients with cardiac arrest in the Emergency Installation and ICU of General Hospital of Dr. Soedarso Pontianak, with a p-value of p = 0.000 (α <0.05). Where the number of respondents with education D3 is more (44 respondents) than nursing S1 (12 respondents), the results of the data are

following one of the policies of the provincial government itself and the director of General Hospital of Dr. Soedarso Pontianak who made composition that more D3 nursing nurses because Nursing D3 nurses from year to year are increasing in number and D3 nurses are vocational nurses or skilled nurses while for nursing nurses S1 nurses are usually needed by hospitals as managerial nurses who usually focus more on managing good service problems in each room in the General Hospital of Dr. Soedarso Pontianak, but nurses with an education level of nursing D3 with an awareness of themselves improve their education by continuing their education in nursing undergraduate.

Education that exists today has been aligned with the progress of science and technology, nursing education has increased both the level and the quality of education. The study of nursing education in Indonesia itself is made up of the Academy or the Associate Expert nursing educators and nursing undergraduate program (nurses) and S2 or master's programs as well as consultants (S3) associated with nursing. But, they are different although education but they respect each other and have a desire to learn together and try to remain a professional nurse by training capabilities they already possess.

D3 level of education held by the higher education curriculum with the goal of nursing had to get alumnus competent as an executor of nursing care, while nurses nursing S1 aims to generate a first level registered nurse. But according (Sitorus and Pandjaitan, 2011) for graduates D3 can be regarded as a professional nurse beginner because nurses D3 already have a professional attitude are enough to have nursing and skilled professionals which in this case includes technical skills, intellectual and interpersonal wanted it to be can do according to SOP nursing care nursing and nursing ethics.

The service demands of health in terms of nursing care for patients will always grow, both in terms of quality or service. To fight the public demands, particularly on the part of nursing must be able to perform a change of the terms of aspects including nursing education (Kusnanto, 2003). Research conducted by (Benner & Tenner, 1992), which revealed that novice nurses are more often unsure or hesitant in implementing treatments, even to patients who handled votes compared with nurses who are not beginners. this is because a nurse who has knowledge and experience can act more quickly to address the situation of patients facing it. Therefore, nursing education is one of the number one things that need arrangement as through educational advancement of the nursing profession will be neater and extends in line with the progress of science and technology and to create a qualified nurse (Murwani, 2008).

Conclusion

Based on the study result can be concluded that there is a correlation between knowledge and education on the implementation of BHD in patients with cardiac arrest in the Emergency Installation and ICU of General Hospital of Dr. Soedarso Pontianak. The increasing knowledge related to BHD implementation procedures should be carried out continuously so that the capabilities and skills of nurses can be increased. Research related to the ability of nurses in implementing BHD in patients with cardiac arrest should be developed to evaluate objectively related to the ability of the nurse as a form of reflection on the skills possessed by the nurse.

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