

Conference Paper

Coping Mechanism and Stress among Emergency Department Nurses after Unsuccessful Cardiopulmonary Resuscitation

Hudzaifah Al Fatih and Fitriani

Universitas BSI, Bandung, West Java, Indonesia

Abstract

Cardiopulmonary Resuscitation (CPR) is a life-saving procedure that performed when patient's heart stops beating. Unsuccessful resuscitation that causes death inflicted a strong emotions and feelings, also potentially developed into emotional stress for nurses. In dealing with stress, each individual has different abilities depend on physical, psychological, behavioral or cognitive sources which called coping mechanisms. This study aimed to describe the coping mechanism and the stress level of nurses after the unsuccessful CPR, along with the relationship between those two variables. The research design used in this study was descriptive correlational with a total sample of 50 Emergency Department and Intensive Care Unit nurses taken by convenient sampling technique from one public hospital in Cimahi. To answer the research question, critical care coping mechanisms questionnaire adapted from Mulyani & Litia were used to measured nurses coping mechanisms. Meanwhile, the stress level of nurses was measured using Perceived Stress Scale (PSS). The data obtained described using frequency and percentages, while the relationship between nurses coping mechanism and the level of stress measured using Pearson's correlation. The results showed that most 28 (56%) nurses had moderate stress levels, and most 29 (58%) nurses had adaptive coping mechanisms after unsuccessful CPR. Finally, there was a significant relationship between coping mechanism and the level of stress of emergency and ICU nurses after unsuccessful CPR ($r = -0.348$, $P = 0.013$). Hospital stake holder expected to facilitate training and counseling regarding stress management and the use of adaptive coping mechanisms when nurses performed an unsuccessful CPR.

Keywords: Coping Mechanism, Emergency Department Nurse, Intensive Care Unit Nurse, Level of Stress, CPR

Corresponding Author:

Hudzaifah Al Fatih
ns_fatih@yahoo.com

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1. Introduction

One of emergency case wick conceivably become life threathening if not properly handled by healthcare provider was cardiac arrest [1]. Cardiac arrest was one of leading cause of death worldwide and contribute up to 10% of the number of death in developing countries [2]. Furthermore, 80% of hospital mortality rate were associated with cardiac arrest [3]. In Indonesia, according to Indonesian Heart Association, the incidence of

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cardiac arrest cases ranges from 10 out of 100.000 people aged under 35 years and reaches 300.000-350.000 events annually [4]. Cardiac arrest cases frequently found in the emergency department (ED) with the incidence 1 out of 4 patient admissions [5]. As well, the Intensive Care Unit (ICU) also had a high incidence of cardiac arrest with 59% of total intra hospital cardiac arrest cases (Perman, et al. 2016). With the survival rate less than 12% for pre-hospital cardiac arrest and 22.3% - 25.5% for intra hospital cardiac arrest, the American Heart Association (AHA) recommends the Cardiopulmonary Resuscitation (CPR) as a principal action to increased patient's survival rate up to 2 or 3 times if conducted immediately [6].

CPR is a series of life saving effort in an emergency situation which is performed manually to resuscitate someone who experienced cardiac arrest [7]. Although CPR was a recommended action, yet the survival rate of cardiac arrest patients following CPR was still quite low, 14.63% in the ED [8], 2016) and 15.7% in the ICU [9]. Overall, the successful rate of CPR vary from 3.1% to 16.5% (Tobi & Amadasun, 2015). In Indonesia, previous study showed that nearly 98% cardiac arrest patients died despite having received CPR [9]. Unsuccessful resuscitation which caused patient's death produced strong emotions and feelings, and potentially became an impending source of emotional stress for nurses. Experiencing unsuccessful resuscitations may lead nurses to frustrations, anger, feelings of guilt, hopelessness, unprofessional feelings (Colle et al, 2011), and elicit a psychological impact in the form of stress [10].

Stress defined as a psychological and physiological reactions toward a situations which considered beyond individual coping resources [11]. In dealing with stressors, each individual has different capacities and abilities, as well the capability to adapt with various situations full of stress, this ability called as individual coping [12]. Moreover, individu used a set of strategy and mechanism to adapt with threatening events, manage stressful situations, control physiological and emotional responses, reduce stress levels and improve quality of life which are called as coping mechanisms [13]. Appropriate use of coping leads to problem reductions, increased adaptability, and problem solving. While, inappropriate use of coping leads to the increased of stress level [14]. Coping behavior categorized into two types, the effective and ineffective coping behavior. Effective coping behavior could reduce or eliminate stress significantly, whereas ineffective coping behavior such as avoidance and drug use might increase psychological stress and decrease psychological health [14].

According to literature, nurses participating in CPR reported the feelings of anxiety, sadness, regrets, anger, vanity, and helplessness [15]. To prevent nurses falling into

worse stressful conditions, this study aims to understand the relationship between nurses' coping mechanisms and stress levels after unsuccessful CPR.

2. Methods

This study was conducted using a cross-sectional design, all participants were recruited from one of public hospital in Cimahi City, Indonesia by convenient sampling. The inclusion criteria of this study were nurses who work in ED and ICU for at least for 6 months and had experienced an unsuccessful CPR. 50 nurses were eligible from both ward and all were agreed to participate in this study. To answer research questions, nurses' coping mechanisms were measured using a questionnaire adapted from Mulyani & Ulfah (2017) consisting of 16 questions with score ranging from 1 to 4, 1 = never, 2 = sometimes, 3 = often, and 4 = always. Total score ranges from 16 to 64, with adaptive criteria if scores > mean and maladaptive if scores \leq mean. While, nurses' stress levels were measured using the Perceived Stress Scale (PSS-10) from Cohen, Kamarck & Mermelstein (1983) which contained 10 questions with score ranging from 0 to 4, 0 = never, 1 = seldom, 2 = sometimes, 3 = often, 4 = very often. Total score ranges from 0 to 40, with mild stress if scores \leq 13, moderate stress if scores = 14-26, and high stress if scores = 27-40. To ensure the validity and reliability of the instruments, 10 items of stress level questions and 16 questions of coping mechanism were tested on 20 participants and the result of all items were valid with correlation scores ranging from 0.462 to 0.774 for stress level questionnaire and 0.588 to 0.761 for coping mechanism questionnaire. Collected data was processed and analyzed using IBM SPSS Statistics version 25. Spearman Rank correlation test was used to examine the relationship between nurses' coping mechanisms and stress levels with a significance level of $\alpha < 0.05$.

3. Results

Of the 50 nurses willing to participate in this study, most were aged between 25-35 years (56%), female (70%), had a diploma education (72%), had <5 years working experience (66%), and 88% had attend emergency training. Participants' ages were ranged between 22 to 40 years with the average of 28.56 (SD = 4,441). Nurses' working experience was 1-9 years with the average of 3.94 (SD = 1,942).

Table 2 showed that the majority of nurses had moderate stress levels (56%), almost half had mild stress levels (42%), and only a few had high stress levels (2%).

TABLE 1: Demographic and occupational characteristics of respondents (n= 50).

Demographic variable	n	%	M	SD
Age			28.56	4.441
17-25	17	34		
26-35	28	56		
36-45	5	10		
Gender				
Male	15	30		
Female	35	70		
Level of education				
Diploma	36	72		
Bachelor	14	28		
Have emergency training				
Yes	44	88		
No	6	12		
Working experience			3.94	1.942
< 5 years	33	66		
≥ 5 years	17	34		

TABLE 2: Critical care nurses' stress level after unsuccessful CPR (n = 50).

Variable	n	%
Stress level:		
Low	21	42
Moderate	28	56
High	1	2
Total	50	100

Table 3 showed that most nurses 29(58%) had adaptive coping mechanisms, and 21 (42%) had maladaptive coping mechanisms.

TABLE 3: Critical care nurses' coping mechanism after unsuccessful CPR.

Variable	n	%
Adaptive	29	58
Maladaptive	21	42
Total	50	100

Table 4 showed that there was significant relationship between nurses' coping mechanisms and their stress level ($r=0.331, p=0.019$).

TABLE 4: Relationship between critical care nurses' stress level and coping mechanism.

		Nurses' stress level
Nurses' coping mechanism	r	0.331*
	p	0.019
	N	50
*p <0.05		

4. Discussion

Results showed that more than half of nurses experienced moderate stress (56%). Table 1 showed that more than half (56%) of ED and ICU nurses were in the early adulthood (26-35 years). Early adulthood is a productive age, where a person starts working and a period full of emotional tension that is affected by success or failure experience in their lives [16]. This result was supported by Tobi [17] which states that nurses from the early adulthood tends to experience work stress, especially after having experienced an unsuccessful CPR.

However, this is not in line with the study of Mulyani & Ulfah [18] which shows that the majority of nurses (69.4%) experience mild stress. This is because in the study more than half of the respondents (53.2%) were aged > 30 -65 years. Age factor is closely related to maturity or level of maturity. The older a person is, the more mature he will be, his soul maturity and more capable in carrying out his duties and responsibilities (Siagian, 2011).

Another factor causing nurses stress is gender [19]. Based on the results of the study most of the respondents were dominated by women as many as 35 (70%) and men 15 (30%) respondents, from this result it can be seen that women are more vulnerable to stress. Women are more sensitive to their emotions which ultimately affect the level of anxiety [20]. This is in line with the study of Healy and Tyrrell (2011) which states that women are more vulnerable to stress than men.

In this study the majority of nurses who had a diploma education had a moderate stress level (58%) which was higher when compared to nurses who had a bachelor education (50%). Higher levels of education will affect the power of criticism and reasoning power so that individuals are more able to solve problems encountered, overcome stresses so they are able to adjust to work, and ultimately be able to control the stress they experience [20].

This is in accordance with previous research by Giriwati [21] which showed that the majority of nurses (57.7%) with tertiary education did not experience stress. In line with

Ismafiaty's research [22], almost all respondents who were diploma (88.9%) experienced moderate work stress, the higher a person's education, the more knowledge gained so that they would be better able to cope with the stress that occurs in him compared to those whose education lower.

The results showed that most (58%) nurses had adaptive coping mechanisms, this is because most nurses had emergency training (88%). Nurses who have attended the training assume that failure in conducting CPR is a natural thing and nurses have taken these actions in accordance with procedures. Training will improve nurses' abilities related to resuscitation training, with good knowledge and skills nurses will be able to do high-quality resuscitation [23].

This result was in line with the research of Mekka, Ratnawati, & Rachmawati [23], saying that respondents who experience the failure of repeated resuscitation will be calmer, more relaxed and try to take nursing actions correctly and more thoroughly, the failure is used as motivation to work better and optimal in the future.

Another factor that supports the use of adaptive coping strategies in this study is the majority of respondents are women (70%). Men and women have different coping strategies [24], men are more likely to hide the problems they face and be more resolute. While women show more feelings, tend to cry and express emotions. Thus, women tend to use adaptive coping strategies [25]. An appropriate use of coping leads to problem reductions, increased adaptability, and problem solving [14].

5. Conclusion

This study addressed limited literature about the relationship between coping mechanisms and stress after unsuccessful CPR situation in Indonesia. Result showed that there was positive relationship between nurses coping mechanisms and stress. Thus, to reduced stress level, ED and ICU nurses must use adaptive coping mechanisms. Emergency Department (ED) and Intensive Care Unit (ICU) nurses are vulnerable to stressor situations such as critical patient conditions or unsuccessful CPR that resulted patients' death. To minimize the negative impact of stress, it is necessary to know personal factors that can affect stress. The hospital management must make a policy that requires every critical nurse to have a critical nurse training certificate.

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