

The Influences of Nurses' Communication toward Code Blue Team Activation Decision Making at Hospitals

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Abstract

Communication with peers and making decisions are the main successful components in code blue team activation. Communication provides information concerning patients. Thus, *code blue* team activation becomes the appropriate thing. This research aims to find out the nurses' communication toward the code blue team activation decision in the hospital. This research applied a *cross-sectional* study design. The applied sampling technique was purposive *sampling*. The sample consisted of 93 hospitalized patients. The data collection was done by distributing the questionnaire. The questionnaire had undergone validity and reliability tests. The data analysis process applied *spearman rank* statistics test and multiple linear regression. The results show that the average score of nurses' communications is 34.7 (SD + 2.23). The decision making of the nurses was based on their intuition, 72%. The linear regression shows the communication component in the form of common interest. It became the dominant factor in decision making. It could be concluded there was communication influence in deciding the code blue team activation.

Keywords: *Communication, decision making, code blue.*

Introduction

A code blue is a code applied at hospitals around the world to tell any emergencies dealing with cardiac arrest or respiratory problems ⁽¹⁾. This code was first introduced around the 1990s in Bethany Medical Center, Kansas. The purpose of a code blue is to intervene in cardiac-arrested or critically ill patients administered by the code blue team at hospitals⁽²⁾. A code blue team consists of a doctor, a nurse, and other staff that have skills in emergencies ⁽³⁾.

This code blue activation implementation influences the service quality and improves the life quality of the patients at the hospital⁽⁴⁾. The applied intervention promoted by the code blue team for any critical patients could increase their survivability until 26%. It also could increase the survivability rate of cardiac arrest patients with a percentage of 11.13%⁽⁵⁾. Other studies mention that a code blue activation could decrease 18-19% mortality cases due to cardiac arrest in inpatient services^(6,7).

Communication with peers and making decisions are the main successful components in code blue team activation⁽⁸⁾. Communication provides sufficient

information exchange so a reason to promote *code blue* team activation would be deemed accurate. Lack of communication creates a situation in which any mistake while providing care could occur. Such mistakes have potencies to cause severe injuries or even unexpected mortality for the patients⁽⁹⁾. Poor communication and feeling afraid to be criticized due to the mistakes in activating the code blue team is frequently occurred⁽¹⁰⁾.

This research aims to find out the nurses' communication influences in making the blue code activation at hospitals.

Research Method

This is analytic correlation research with a cross-sectional design. This research was carried out from March until April 2020 in a hospital, located in, East Java Province, Indonesia. The population of this research consisted of the nurses in the inpatient hall. The eligible and condescend respondents consisted of 93 nurses. They were selected by random sampling. The data collection was done by distributing the questionnaire. The questionnaire had undergone validity and reliability tests.

The descriptive analysis uses average, the standard of deviation, minimum and maximum scores, and percentage for the variables with categories. The applied bivariate test was used to connect those two variables. Meanwhile, to find out the most dominant factor, it was done by using multiple linear regression test. In this research, the data was analyzed by IBM Statistical Package for the Social Sciences (SPSS) version 26.0 with a significant score of 0.05.

This research had been deemed ethically feasible from the research-ethics commission of Medicine Faculty of Brawijaya University Malang, Number 58/EC/KEPK-S2/03/2020. This research was also deemed ethically feasible by the research site with number 005/Etik/III/2020.

Results and Analysis

Respondents’ Characteristics: The findings showed from 93 nurses, most of them were averagely aged 34.07 years old (SD + 6.97). The numbers of female nurses were 57 (61.3%). The male nurses were 36 (38.7%). The latest educations of the respondents when they filled up the questionnaire were Diploma III (70 people or 75.3%) and 23 people (24.7%) were a bachelor of nursing program. The years of service were 11 years (7.37) with a minimum year of service was one year and the maximum year of service was 24 years (Table 1).

The statistics test of the respondents’ characteristics factors with the decision-making show that age ($p = 0.043$), education ($p = 0.000$), and experience (0.022) have a significant correlation in the nurses’ making decisions to activate the code blue team.

Table 1. The Respondent distribution (N-93)

Characteristics	Mean ± SD	Min-max	p Score
Age, (years)	34 ± 6.97	24-48	0.043
Experience, (years)	11 ± 7.37	1-24	0.022
Characteristics	Frequency (N)	Percentage	p Score
Sex			
Male	36	38.7%	0.919
Female	57	61.3%	
Education			
Diploma	70	75.3%	0.000
Bachelor	23	24.7%	

SD: Standard of deviation

The Nurses’ Communication in Making Decision: The communication factor has an average score of 34.7 (SD + 2.23). Its sub-variables consist of control power 7.5 (SD + 0.6), Scope of Practice with 9.8 (SD + 1.4), mutual interest with 11.4 (SD + 0.6), and common goal with 6.1 (SD + 0.8). In the code blue team activation decision, it showed most of the nurses chose the intuitive pattern in making decisions. There were 67 respondents (72%). The parameter or process in making decision showed the average score 20.22 (SD + 1.99),

problem identification with score 20.6 (SD + 2.11), planning activity 21.09 (SD + 2.77), and implementation or evaluation with 20.79 (SD + 2.65). The statistics test results between communication and decision making showed $p\text{-value} = 0.000 < 0.05$ and $r\text{ score} = 0.373$. It meant the nurses’ communication influenced the nurses’ decision making in activating the *code blue* team. It meant better communication of nurses would lead to better decision making in activating the code blue team (Table 2).

Table 3 The distributive factors of cognition and communication (N=93)

The variable data	Mean \pm SD	Min-max	p Score
Communication	34.7 (SD \pm 2.23).	30-39	0.000 r = 0.373
Parameters			
Control-power	7.5 (SD + 0.6)	6-8	0.005
The environment of the practice	9.8 (SD + 1.4)	6-12	0.007
Common interest	11.4 (SD + 0.6)	10-12	0.002
Common objective	6.1 (SD + 0.8)	5-8	0.008

The Decision-Making Pattern	n	Percentage
Intuition	67	72%
Quasi-rational	21	22.6%
Analysis	5	5.4%
The process of making a decision	Mean \pm SD	Min-max
The data collection	20.2 (1.99)	16-18
Problem identification	20.6 (2.11)	14-26
The activity plans	21.0 (2.77)	14-28
The implementation and evaluation	20.7 (2.65)	14-29

The results of multiple linear regression analysis tests show that the influential communication elements of the nurses' blue code activation decision are power control (0.007), common interest (0.000), and common

objective (0.002). Table 4 shows that the most influential component in making decisions was a common interest with a standardized coefficient beta score of 0.333.

Table 3. The variable coefficients based on multiple linear regression

Model		Unstandardized B	Standardized Coefficients Beta	t	Sig.
1	Constanta	5,127		0.352	
	Control-power	2,852	0.251	2.740	0.007
	Common interest	3.722	0.333	3.622	0.000
	Common objective	2.278	0.297	3.230	0.002

Discussion

The nurse experience will provide valuable information about the decision-making process. The nurse's experience could improve intuitive decision making although the intuitive decision making might not better or could be worse than the analytic or other decisions⁽¹⁷⁾. The cumulative experience of the nurses would be information and knowledge to take sufficient decisions dealing with the patients' conditions⁽¹⁸⁾.

The findings showed there was a correlation between age and decision-making factors. It could be concluded that the decision making was well-prepared and excellent as the age got older⁽¹⁹⁾. When an individual gets older, then his experience would cumulatively increase⁽²⁰⁾. This matureness in an individual's decision making as determined by psychological matureness. It was directly correlated to the ages of the nurses. The more mature and the more obtained experiences, the wiser an individual would be to make a decision⁽²¹⁾.

The education in this research was the result of the obtained learning from the college or formal educations. This research results showed the educational factor influenced the nurses' decision making in activating the code blue team. This research is in line with⁽²²⁾. It found that education positively influenced the decision-making process. Education could also influence awareness of how to care for the patients and to make the best decision for them⁽²³⁾. The nurse decision-making combined both theories the nurses obtained during their education and the real conditions of the patients they handled⁽²⁴⁾.

The communication in its correlation to the code blue team call is defined as how a nurse could collaborate properly to decrease the patients' clinical conditions⁽¹¹⁾. Decision making and communication are important dynamic processes in caring for the patients⁽¹²⁾. It is in line with the research that there was a significant correlation between communication and decision making of the nurses to activate the code blue team as communication was the part of a frequently and sustainable applied process while making a decision⁽⁹⁾.

Communication facilitated accurate, consistent, and easy nursing process so the nurses were capable to make proper decisions and improve their satisfaction⁽¹³⁾. Communication is fostered from various components so it could be empowerment inside of a patient care system. The component is power-control that has authority provision concerning with patients' that suffered clinical worsening conditions⁽¹⁴⁾. The second was the practice environment. This condition was strongly correlated to how a hospital environment supported the decision making of the nurses concerning the patients' conditions. The third was a common objective. It is also correlated that focus on a code blue team activation dealt with objective-oriented interest to save emergency state patients⁽¹⁵⁾. The fourth dealt with a common objective. It was a final process of a blue code team decision making.

The decision making in this research is the nurse's decision in activating the code blue team based on the hospitalized patients' clinical condition decrease. Our findings showed that most of the nurse decision-making had an intuitive pattern. Intuitive decision making is an immediate and accurate decision based on an individual's cognition and experience⁽¹⁶⁾. This condition could be proved in this research that there was a significant correlation between the experience and cognition factors to the nurse decision-making in activating the code blue team.

The hindrances and the success of the nurses' decision making are based on the characteristics of the nurses such as cognition, communication skill, and collaboration skill. The success in activating the code blue team becomes the key for the patients' safety at hospitals.

Conclusion

There was an influence between the nurses' communication and decision making of the code blue team activation. It showed good communication between nurse to nurse and doctors were expected to empower the decision making to save the patients.

Suggestions: Communication in decision making was important. Thus, before activating a *code blue* team, it should be better to be communicated whether the data of the patients had surely supported to activate the *code blue* team hospital.

Ethical Clearance: This article has been approved by the Medical faculty of Brawijaya University

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