

SKILLS IN EARLY WARNING SCORE SHEET FILLING WITH NURSING DECISION MAKING IN CODE BLUE TEAM ACTIVATION

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ABSTRACT

Background: Code blue team activation decision making always begins with recommendations from the Early Warning Score (EWS) sheet. Adequate skills in filling EWS sheets have an impact on the nurse's ability to make decisions for activation of the code blue team. This study aims to determine the relationship between the skills in filling EWS sheets with nurse decision making in code blue activation in the hospital. **Methods:** The study design was observational analytic with the cross-sectional approach. The sampling technique used was simple random sampling consisting of 93 nurses. Nurses' skills were measured by the method of observation and decision making using "The Nurse Decision Making Instrument questionnaire". **Results:** The results show that nurses' skills in filling EWS sheets 58% were categorized skillful. The majority of nurse decision making was 72% intuition. Statistical test results show a significant relationship between skills and decision-making activation code blue team ($r = 0.207, p = 0.013$) **Conclusion:** The increase was found in skills in filling the EWS sheets required and the decisions were made on the recommendations of the EWS.

Keyword: Skills, Early Warning Score, Decision Making, Code Blue

INTRODUCTION

Early warning score (EWS) is used to monitor the patient's vital signs and to detect early or absent emergencies of patients in hospitalization (Lydon *et al.*, 2016). Patients with cardiac arrest and death are often marked by abnormal changes in vital signs several hours earlier (Mathukia *et al.*, 2015). Changes in vital signs can be known through monitoring conducted by nurses, so there is no sudden emergency (Gardner-Thorpe *et al.*, 2006). EWS can also be used as a basis for activating the code blue team in the hospital.

So far, the application of EWS has not been optimal. Lapkin *et al.*, (2010) stated that there were skill factors to detect the clinical condition of patients. Damayanti, Trisyani & Nuraeni, (2019) stated that nurses' skills in calculating and understanding EWS are still not optimal. Skills in EWS filling and early detection of patient deterioration are needed by nurse (McGaughey *et al.*, 2017). The skills to identify patients at risk are very important for determining subsequent decision making (Bick *et al.*, 2014). One of the nurses' skills during

clinical emergencies in patients is activating the code blue team based on recommendations from the EWS (Jansen & Cuthbertson, 2010).

Some code blue team countries are combined with the Rapid Response Team related to human resources (Odell, Victor & Oliver, 2009; Rashid *et al.*, 2014). The application of code blue team activation can affect the quality of service and improve the quality of life of patients in the Hospital (Jones *et al.*, 2013). Improved services due to interventions carried out by the code blue team in critical patients were able to reduce the mortality rate by 17-23% (Konrad *et al.*, 2010). The risk of death in critical patients in hospital services decreased by 12% after the activation of the code blue team (Konrad *et al.*, 2010). Other research showed that with the activation of the code blue team there was 18-19% reduction of cases of death due to cardiac arrest in inpatient services (Sabahi *et al.*, 2012; Sharek *et al.*, 2007).

Therefore, this study discusses a relationship between skills in filling up the EWS sheets with decision making in the activation of the code blue team at the hospital.

METHODOLOGY

Study Design

The research design was observational analytic with the cross-sectional approach, linking the skills with the decision making of code blue team activation. The study was conducted from March to May 2020.

Subject

Respondents in this study were 93 ward nurses in one hospital in East Java. Respondent criteria used were nurses who had worked for ≥1 year and performed inpatient services.

Measurement

The skill observed in this research is completing EWS sheets while the nurse was serving in 1 day. The criterion for skills is “Skillful” if the nurses filled out the EWS score correctly and the recommendations needed in the EWS sheet. Meanwhile, “Not skilled” is given if the nurses were wrong in filling out EWS sheets.

The nurse decision-making questionnaire uses “The Nurse Decision Making Instrument” (Lauri & Salanterä, 2002). The questionnaire consists of 24 questions graded from 1-5, using a Likert scale with choices, “always”, “often” “sometimes” and “never”, “never at all”. Decision making categories include score <67 Analysis, score 68 - 78 Quasirational, and score >79 Intuition. This instrument has been tested for validity with the results of $r > 0.46$ (r table), and reliability with Cronbach’s alpha of 0.844.

RESULTS

Characteristics of Respondents

The results showed that the average age of the respondents was 34.07 (between 24 - 48 years). Most of them are female (61.3%), with diploma level education (75.3%) and an average of 11 years of work experience (Table 1).

Table 1: Characteristics of Respondents (n = 93)

Characteristics	Results
Age, years (average ± SD)	34±6.97
Experience, years (average ± SD)	11±7.37
Sex	
Male	36 (38.7%)
Female	57 (61.3%)
Education	
D3 Nurse	70 (75.3%)
S1 Nurse	23 (24.7%)

The results show that of the respondents who were skillful in filling the EWS sheets were 54 respondents (58%), while the less skillful were 39 respondents (42%). Decision making by majority respondents were intuitive decision making by 67 (72%) (Table 2).

Table 2: Frequency Distribution of Skills and Decision Making

Variable	Category	Frequency	Percentage
Skill	Skilled	54	58%
	No Skilled	39	42%
	Total	93	100%
Decision making	Intuition	67	72%
	Quasirational	21	22%
	Analysis	5	5.4%
	Total	93	100%

The results of cross-tabulation between the skills and decision making showed that respondents who were in the skilled category in terms of filling out the EWS tended to choose intuitive decisions in the activation of the code blue team were shown by 34 respondents (36.6%). The statistical test using Kendal Tau shows that there was a significant relationship between skills and nurse decision making in the activation of code blue team ($0.04 < 0.05$) with a positive correlation value and has weak strength.

Table 3: Bivariate Analysis of The Relationship Between Skills and Decision Making

		Skill				correlation coefficient	Value p
		No Skilled		Skilled			
		F	%	F	%		
Decision making	Intuition	33	35.5	34	36.6	0.207	0.043
	Quasirational	3	3.2	18	19.4		
	Analysis	3	3.2	2	2.2		
	Total	39	41.9	54	58.1		

DISCUSSION

This study discusses nurses’ skills in identifying signs of clinical deterioration of patients based on the Early Warning Score (EWS) of the patient. The results showed that most respondents were skillful in filling the Early Warning Score (EWS) sheet. These skills include temperature, pulse, respiration, oxygen saturation, blood pressure, and the patient’s level of consciousness. The nurse’s skill in filling out this EWS sheet was found that the recording of vital signs in the EWS was not accompanied by follow-up on what had been recommended by the EWS sheet. This shows that the problem in terms of skills in filling EWS is process that

nurses maintain to follow up on changes in vital signs that occur in patients (Niegsch, Fabritius & Anhøj, 2013).

Decision making in this study is the nurse's decision to activate the code blue team based on the decrease in the clinical condition of the patient on the EWS sheet. The results show that most of the respondents used intuitive decisions. This is in line with research by Mohammed *et al.*, (2017) stating that decision making with intuition style is a decision making technique that is fast and is formed from skills gained from experience. Decision making in code blue team activation may be better and more accurate if there is a component of intuition and analysis in the nursing process (Simmons, 2010). The different reasoning strategies between intuition and analysis have an impact on the quality of decision making. In this case, the intuition formation and analysis are related to a nurse's knowledge in the development of the nursing process. The approach in the nursing process requires nurses to make judgments and decisions. This is the basis in forming intuition and analysis (Melin-Johansson, Palmqvist & Ronnberg, 2017).

The statistical test shows that there was a correlation between the skills to fill in the EWS sheets with the nurse's decision making in the activation of the code blue team. This is in line with Massey, Chaboyer & Aitken, (2014) stating that skills in early detection of changes in patient conditions affect nurses' decisions in the activation of the code blue team at the hospital. Skills and competencies are created through the capacity of nurses

to integrate the knowledge of abilities and experiences in decision making (Cowan, Norman & Coopamah, 2015). Skills in assessing EWS have to do with experience and decision making of code blue team activation (Waldie, Tee & Day, 2016). Nurses' skills and decision making are always followed by experience or years of service in-hospital services. In this study, it is known that the average nurse experience was 11 years. Sesrianty (2018) stated that the longer the person work in a workplace, the more skillful and experienced and are more able to make decisions. The nurse's skills and experience can increase the use of intuitive decision making, even though intuitive decision making is no better or worse than analysis and another decision making (Pretz & Folse, 2011).

CONCLUSION

The nurse's decision-making skill in the activation of the code blue team is always in line with the nurse's skill in detecting the clinical deterioration of the patient. The increase was found in skills in filling the EWS sheets required and the decisions were made on the recommendations of the EWS.

Conflict of Interests

The authors declare that they have no conflict of interest.

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