

NURSES' KNOWLEDGE OF EARLY WARNING SCORE AT A PRIVATE HOSPITAL IN EASTERN INDONESIA

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ABSTRACT*

Early Warning Score (EWS) is an approach to identify clinical decline and early detection of abnormal condition in regard with patients at hospital. This early clinical decision could influence on patient mortality rates and quality of nursing care. The purpose of this research was to describe nurses' knowledge about EWS at a private hospital in Eastern part of Indonesia. This research applied a quantitative descriptive method. Total of 48 nurses at a private hospital in Eastern part of Indonesia were recruited in this study. This study used a descriptive analysis. This study revealed that most nurses (81.25%) were at the level of adequate in regard with their knowledge of EWS. Further study is recommended to explore nurses compliance on EWS implementation in hospital and how it is associated with patients' deterioration conditions.

Key Words: Early Warning Score, Knowledge, Nurse

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INTRODUCTION

Early detection of signs and symptoms of clinical deterioration in patients in the treatment room is one of the ways to prevent the occurrence of code blue. In addition, this also one way to improve the patient's prognosis as well as to detect early deterioration of the patient's clinical condition. The Early Warning Score (EWS) system is a system to aid health provider to overcome patient's problems in early condition by using seven parameters to determine the patient's clinical activation response (Royal College of Physicians, 2012).

EWS is also a system for scoring the physiological condition based on clinical

response, which is commonly used in medical surgical units before patients experience emergency conditions (Saab et al., 2017).

EWS scoring is based on seven parameters using an assessment of the patient's physiological response (Duncan & McMullan, 2012). The seven parameters include respiration, systolic blood pressure, temperature, pulse, oxygen saturation, additional oxygen, and the level of patient awareness (Duncan & McMullan, 2012).

Kruisselbrink et al. (2016) investigated the prevalence of critical illness using the Modified Early Warning Score (MEWS) at Mulago Hospital, Uganda. It was found

that after using the MEWS, the mortality rate of patients' critical illness in 7 days was only 5.5% and 41.4% of the patients could be discharged. This also showed that EWS contributes greatly to improve the quality of health services.

A previous study conducted by Saifullah (2015) recruited 36 nurses at the surgical wards of Soehadi Prijonegoro Regional General Hospital, this study revealed that nurses' knowledge significantly influenced their actions. In this case, related to patients' management.

One of nursing responsibilities at a private hospital in Eastern part of Indonesia is to conduct an emergency skill such as an Early Warning Score assessment. In this hospital, nurses' documentation and application of EWS is not maximal. The data showed that between January to May 2017, the implementation of EWS documentation by nurses were 37.6%, 43%, 45%, 60% and 63%. These findings showed that the EWS implementations were not optimal. One of the reasons was inadequate nurses' knowledge about EWS.

Some efforts have been applied by the hospitals to improve the EWS implementation in this hospital. For

example, EWS resocialization or re-education and evaluate nurses' EWS implementation by evaluating code blue events and observing patients in the wards. Based on the results of the internal audit at this private hospital to all nurses in March 2017, it is noted that nurses' level of knowledge about EWS were still very low (64.5%).

METHOD

The research applied a quantitative descriptive method. The sample consisted of 48 nurses at a private hospital in Eastern part of Indonesia, which were selected using purposive sampling technique. In addition, the research ethic Committee at Faculty of Nursing Universitas Pelita Harapan has approved and provided ethical clearance for this study.

This current study used a two-part questionnaire that consisted of demographic data and knowledge of EWS. Liswati (2015) has developed the questionnaire and provided permission for using this questionnaire. The questionnaire for this study has also been proven valid and reliable (Cronbach alpha 0.75; $r > 0.40$).

This study also applied univariate analysis. The nurses' level of knowledge is divided into three levels, namely:

- 1) Good: 76% - 100% of right answers
- 2) Adequate: 56% - 75% of right answers
- 3) Poor: <56% of right answers

RESULTS

Table 1. Characteristics of Nurses at a Private Hospital in Eastern Indonesia

Characteristics	Level of Knowledge			
	Good		Adequate	
	n	%	n	%
Age (years old)				
20-23	1	2.08	1	2.08
24-27	7	14.59	30	62.5
28-31	1	2.08	8	16.67
Gender				
Male	2	4.19	4	8.3
Female	7	14.59	35	72.92
Work experience (year)				
1-2	3	6.25	17	35.42
>2	6	12.5	22	45.83
Level of education				
Diploma	2	4.19	23	47.92
Bachelor	7	14.59	16	33.3
EWS Training				
Yes	9	18.75	36	75
No	0	0	3	6.25

The results of this study revealed the nurses' knowledge of EWS. The nurses' knowledge was categorized into three (table 1). The result shows that most nurses (81.25%) had adequate level of knowledge

Tabel 2 Nurses' Knowledge of EWS based on their characteristics

Level of knowledge	n	%
Good	9	18.75
Adequate	39	81.25
Poor	0	0
Total	48	100%

Table 2 shows nurses' knowledge of EWS based on their characteristics. Respondents aged 24-27 years old had adequate (62.5%) to good (14.59%) levels of knowledge compared to those in other age groups. Most women nurses had adequate level of knowledge (72.92%).

Half nurses with more than two years of working experiences had adequate level of knowledge (45.83%). In Addition, almost half of diploma degree nurses had adequate level of knowledge (47.92%), and most nurses with EWS training experience had adequate (75%) to good (18.75%) levels of knowledge compared to nurses without previous EWS training experience.

DISCUSSION

Nurses' knowledge of EWS in this study were in level of adequate. Since nurses' knowledge influence their intervention (Saifullah, 2015), it is expected that the EWS implementations were also optimal. A study conducted by Galen et al. (2016) supported that when nurses incorrectly identify the EWS scoring, it will lead to the deterioration of the patient's condition. On the other hand, a study conducted by Kartika (2014) opposed that there was no significant correlation between the levels of education of the nurses with the implementation of EWS.

EWS scoring was aimed to detect patients' health problems, then, to identify the intervention needed to reduce the incidences of medical emergency of patients (Saaab et al., 2017). EWS implementation is also important for patient in the ward, however, in the reality, many nurses have not implemented it, which has impacted on EWS documentation. A study conducted by Kyriacos et al. (2009) identified that one of the factors linked to the death of patients on the seventh day after the surgery at six wards (55 post-operation patients) was because one of the nurses documented EWS.

The study by Biben et al (2016) further suggested to apply EWS in Emergency Department (ED) to aid clinical decisions and acute care that impact patients. This suggestion is also supported by other research in the United States of America, by Delgado et al. (2015) on 3000 patients admitted to ED. Delgado's study recommended to integrate EWS assessment in the ED room to perform early

assessment on patient's clinical deterioration.

As discussed previously, most of the nurses' knowledge of EWS were adequate in this current study. This condition is probably caused by the nurses' great initiative to participate in internal training that held every month. This participation is believed to increase and refresh the knowledge of the nurses about EWS (Saab et al., 2017). Therefore, training is needed to improve the level of knowledge of the nurses which eventually produces good quality professional nurses today and in the future.

CONCLUSION

Nurses at a private hospital in eastern part of Indonesia had adequate level knowledge of EWS. This condition is probably as the result of nurses' participation in the training that was held once in a month. It is suggested for further research to explore the correlation between nurses' compliance of EWS implementation and incidences of deteriorating health condition of patients.

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