

THE SATISFACTION USE OF EARLY WARNING SCORE APPLICATION AT PONTIANAK HOSPITAL

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Abstract

Introduction: Emergencies are a form of health service in emergency or urgent situations that require immediate action from medical personnel working to overcome potential risks and dangers to life. Various forms of emergency services require nurses in hospitals to save time in the process of providing nursing care. One form of emergency service in hospitals is the Early Warning Score (EWS). The use of technology in developing the Early Warning Score such as application mobile can certainly help in improving the quality of emergency services in hospitals, so it can minimize the severity of patients' conditions in the emergency phase.

Method: The method in this research is quantitative descriptive research, in this case, the Android-based mobile Early Warning Score application. This research was conducted to measure the level of user satisfaction where there are 3 dimensions in measuring the level of satisfaction with application use: quality of application information, quality of application use, and impact of application use.

Results: The results of the research show that the satisfaction level of the Early Warning Score mobile application at Pontianak Hospital obtained a total score of 419 or 50,60% satisfied, and very satisfied with a total score of 217 or 26.21%.

Conclusion: The Early Warning Score mobile application is suitable for use by nursing staff as a medium for improving excellent nursing services.

Keywords: application, Early Warning Score, emergency

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INTRODUCTION

Emergency nursing is a comprehensive nursing service provided to patients with acute injuries or life-threatening illnesses. Nurses play an important role in providing services (Hwang & Kim, 2022). In providing emergency nursing services, nurses and other teams are required to provide fast service because time is life (*time-saving is life-saving*) (Anggraeni & Pangestika, 2020). Because delays in emergency treatment can result in physical disability and even death. Things that can cause emergency events include accidents, anarchic actions that endanger other people, fires, diseases, and natural disasters that may occur in Indonesia.

This condition requires appropriate and immediate emergency treatment so that first aid to the victim/patient can be carried out optimally (Kurniati et al., 2018). Appropriate nursing care is needed to determine the basis for handling patients in everyday conditions and extraordinary events with the main aim of patient safety. Correct decisions require accurate and complete data, minimizing trauma, disability, and/or death (Suryagustina et al., 2019).

One form of nursing care that is often used in emergencies is the *Early Warning Score* (EWS), EWS is an early warning system that uses markers in the form of scores to assess the deterioration of a patient's condition and can improve overall disease care management, as well as being used as an aid in clinical decision making. (Nielsen et al., 2022). EWS can identify patients at risk earlier and uses multiple parameters. Assessment of a worsening patient's condition, combined with vital signs-based monitoring, can support early detection of patient physiological deterioration (Sudjiati et al., 2019). The importance of early detection

has enabled medical response in hospitals and has prompted health services in Canada, Australia, and the United Kingdom to implement Early Warning Score systems (Damayanti et al., 2019)

The Early Warning Score is useful in monitoring or early detection before the patient experiences a worse condition so that they can use referral routes or appropriate action. As for the underlying disease, the clinical signs of worsening the condition are usually similar, which can be seen in respiratory, cardiovascular, and neurological functions. Effective observation of the patients is the first key to identifying the patient's condition. It is very important to have better nursing practices so that we can provide reports as quickly as possible to reduce morbidity and mortality rates (Damayanti et al., 2019)

Some hospitals are starting to use EWS for early identification the patients experiencing acute illnesses and to assess changes in the patient's condition through systematic observation of the patient's physiological changes (Suwaryo et al., 2019). The lack of availability of Early Warning Score media which is interactive and makes it easier for health workers to help observe and identify patient conditions makes the process of observing and identifying patients in emergency nursing care very slow. Slow service delivery capabilities can affect consumer satisfaction. Consumer satisfaction is a central aspect of business and management (Assuari S, 2003). A hospital's ability to meet patient needs can be measured by the level of patient satisfaction. This research aims to measure the impact of using EWS on nurse satisfaction as a users of the Early Warning Score hospital mobile application.

METHODS

Study Design

This research uses a descriptive method, where the method is used to describe or analyze research results but is not used to make broader conclusions (Sugiyono, 2013). The approach used in this research is a quantitative approach, which is used to obtain in-depth data regarding the analysis of the level of satisfaction of users of the EWS mobile application. Data is presented through filling out questionnaires by application users.

The tools and materials in this Early Warning Score application research are a laptop unit as a hardware unit and a cellphone that contains the Early Warning Score application. Meanwhile, the instrument used in this research is a questionnaire on the level of satisfaction with application use which consists of 3 aspects, namely the quality of application information, the quality of application use, and the impact of application use. This research was conducted in July – August 2023 at Tanjungpura University Hospital, Yarsi Hospital, and Bhayangkara Hospital, Pontianak, West Kalimantan.

Population, Samples, and Sampling

The sampling technique used in this research is Cluster Sampling, namely, all nurses on duty who actively work in the Intensive Care Unit (ICU) rooms in hospitals in the city of Pontianak, namely Tanjungpura University Hospital, Yarsi Hospital, and Bhayangkara Pontianak Hospital, each amount 17 people, 10 people and 9 people. In total, there were 36 nurses as respondents to determine the level of satisfaction, using the Hospital Early Warning Score mobile application as a whole.

Procedure

Research data was collected from 3 hospitals in Pontianak City, Tanjungpura University Hospital, Yarsi Hospital, and Bhayangkara Hospital. Researchers do permission and conduct ethical tests. Learning on the use of the Early Warning Score mobile application is carried out before the application is used. The hospital's Early Warning Score mobile application was used for 2 weeks by nurses in the ICU, at the end of use the respondents filled out a user satisfaction questionnaire.

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Data Analysis

Data analysis was carried out by describing the results of the questionnaire by calculating the average score of each question and making it from very dissatisfied to very satisfied.

Ethical Clearance

The ethical clearance was carried out at the Faculty of Medicine Tanjungpura University 6464/UN22.9/PG/2021.

RESULTS

To determine the level of satisfaction of users of the Early Warning Score application, the author uses descriptive analysis, by distributing questionnaires which are measured using 3 aspects and 17 indicators. The explanation

is as follows:

Table 1 Respondent's responses to the quality of EWS application information

Category	n	%
Very Dissatisfied	1	
Dissatisfied	5	2,78
Normal	30	16,67
Satisfied	90	50
Very Satisfied	55	26,21
Total	180	100

Based on Table 1, it was found that the majority of respondents who gave satisfied responses regarding the Hospital Early Warning Score application in terms of information quality were 90 or 50%. Meanwhile, the rest were dissatisfied with 5 or 2.78% and very satisfied with a total score of 55 or 26.21%. Thus, it can be concluded that some respondents were satisfied with the quality of the information contained in the Early Warning Score mobile application in hospitals.

Table 2 Respondent's responses to the quality of using the EWS application

Category	n	%
Very Dissatisfied	1	
Dissatisfied	15	3,47
Normal	74	17,13
Satisfied	223	51,62
Very Satisfied	120	27,78
Jumlah	432	100

Based on Table 2, respondents who gave satisfied responses regarding the Hospital Early Warning Score mobile application in terms of quality in using the application were 223 or 51.62. Meanwhile, the rest were very satisfied with a total score of 120 or 27.78%, just 74 or 17.13%, and dissatisfied with 15 or 3.47%. Thus, it can be concluded that the majority of respondents expressed satisfaction with the quality of using the Hospital Early Warning Score mobile application.

Based on Table 3, it was found that 23 or 10.65% of respondents were

dissatisfied with the use of the mobile Hospital Early Warning Score application. A total of 106 or 49.07% of respondents gave a satisfied response, while the rest were 45 or 20.83% normal and very satisfied with the impact of using the Mobile Hospital Early Warning Score as much as 42 or 19.44%. Thus, it can be concluded that some respondents expressed satisfaction with the impact of using the application.

Table 3 Respondents' responses to the impact of using the application

Category	n	%
Very Dissatisfied	1	
Dissatisfied	23	10,65
Normal	45	20,83
Satisfied	106	49,07
Very Satisfied	42	19,44
Total	216	100

Based on Table 4, it was found that the majority of respondents were satisfied with the Hospital Early Warning Score application, 419 or 50.60%, and very satisfied, 217 or 26.21%.

Table 4 Respondents' total response to application satisfaction

Category	n	%
Very Dissatisfied	1	
Dissatisfied	43	5,19
Normal	149	18
Satisfied	419	50,60
Very Satisfied	217	26,21
Total	828	100

DISCUSSION

This study results showed that measuring the level of satisfaction with the Early Warning Score mobile application at Pontianak Hospital, most of the respondents, nurses on duty in the ICU at Tanjungpura University Hospital, Yarsi Hospital and Bhayangkara Hospital, felt satisfied and very satisfied with using the application. This shows that the research results regarding user satisfaction with the

Early Warning Score application are in the quite high category. These findings indicate that the Hospital Early Warning Score mobile application is quite easy to use in daily practice and able to provide a better impact for nurses in providing nursing care, especially in the field of emergencies.

However, there were still respondents who expressed dissatisfaction, especially in the response section regarding the impact of using the Early Warning Score application in hospitals. Respondents who expressed dissatisfaction regarding the impact of using the application could be because according to respondents they were still not very familiar with using mobile applications even though they had been given examples of using the application before and some respondents felt more comfortable using paper media when filling in the Early Warning Score. In line with research (Megawati et al., 2021) EWS implementation is still incomplete, only 57.6% of nurses in the room are exposed to how to fill out EWS. The main factors that influence the effectiveness of using EWS are the level of education, support from the rapid response team, workload, and familiarity with use and clinical skills. (Jones et al., 2009). These findings indicate that the most important part of emergency management using the Early Warning Score, whether in the form of paper or mobile applications, is that nurses who serve as users must familiarize themselves with the use of EWS media so that they can feel the impact of using the Early Warning Score better.

However, this study has several limitations, the main one being that in this study the subjects used were limited to the nurses in the ICU room only and only consisted of 3 hospitals in the city of Pontianak. The level of satisfaction in using the Early Warning Score application is not

enough to describe conditions in other rooms in general. In addition, considering the emergency level of nursing rooms other than ICU rooms which also require emergency nursing care, it is necessary to carry out further research regarding the use of mobile EWS in these rooms.

CONCLUSION

The use of mobile Hospital EWS applications can positively influence nursing practice. The mobile EWS Hospital application can generally improve the quality of delivering emergency information, help nurses improve performance, and make it easier for nurses to complete their work. In the future, further studies are needed on the effects of using EWS on patients and their satisfaction focuses on patient-centered outcomes.

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CONFLICT OF INTEREST

The Authors declared no conflict of interest.

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