The Relationship Between The Accuracy of Filling Out The Early Warning Score System Form and Nurse Decision Making

Dewi Lindayani[1], Rika E. Nurhidayah[2], R. Kintoko Rochadi[3]

[1,2]Faculty of Nursing, Universitas Sumatera Utara
[3]Faculty of Public Health, Universitas Sumatera Utara

Email Correspondence: linda81dewi@gmail.com

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Abstract

Early Warning Score System plays an important role in monitoring and tracking patient deterioration through vital signs and physical condition. Nursing decision making is a complex process that has the potential to influence the quality of care provided. Clinical decision making requires critical thinking skills for nurses. This study aims to analyze the relationship between the accuracy of filling out the Early Warning Score System form and nurses' decision making. The type of research used is quantitative research using a retrospective descriptive research design with a cross sectional descriptive research design. The sampling technique is purposive sampling. The respondents of this study were nurses in integrated inpatient rooms A and B at the Haji Adam Malik Central General Hospital, Medan. This research was carried out in the integrated inpatient ward at the Haji Adam Malik Central General Hospital, Medan. The sample consisted of 148 respondents in the inpatient ward. The instruments used were the standardized Early Warning Score System monitoring form at Haji Adam Malik Hospital and nurse decision making adopted from the Ekwantoro questionnaire. The data were analyzed using the Spearman rank test to obtain a correlation coefficient of +0.470 with a significant p-value = 0.000. The conclusion is that there is a relationship between the accuracy of filling in the Early Warning Score System formula and nurse decision making which is quite strong and in the same direction. It is recommended that nurses increase their in-depth understanding of filling out the Early Warning Score System form in order to make appropriate decisions in providing nursing care.

Keywords: Accuracy of filling, Decision making, ERWSS

INTRODUCTION

Sudden cardiac arrest has a major impact on public health, especially as its incidence continues to increase worldwide (Vazquez AR, 2023). Cardiac arrest is a leading cause of morbidity and mortality in the United States (DiLibero J, 2021). In-hospital cardiac arrest occurs in more than 290,000 adults each year in the United States. Efforts to prevent cardiac arrest in hospitals require systems to identify deteriorating patient conditions and appropriate intervention responses (Andersen et al, 2019; Barros AJ, 2023).

This EWS has been proven to reduce numbers heart attacks, complications and death up to 50%A problem that often occurs in health services is the delay or failure of health workers in early detection of a decline in a patient's condition, which can cause delays in fast and appropriate management and treatment, and can increase the mortality rate in hospitals (Mirawati et al., 2022). Delays in analyzing these results have an impact on increasing code blue incidents. Therefore, it is important for hospitals to have good hemodynamic measurement

examination components, especially in interpreting and following up on monitoring results, namely with an Early Warning System (EWS) or early warning system (Suyanti et al., 2023).

One of the efforts to monitor and prevent cardiac arrest in the inpatient room is to increase the ability of nurses to monitor changes in the patient's condition, as well as being able to take appropriate action, especially for nurses who work in the inpatient setting. Prevention includes the availability of defibrillators and resuscitation drugs in the treatment room, the formation of an emergency response team or code blue (Subhan et al., 2019). Code blue is a rapid response system developed for emergency resuscitation and stabilization of sudden cardiac arrest (SCA) in hospitals (Hazra et al , 2022). The introduction of rapid response teams has been associated with a downward trend in hospital mortality (Penketh J, 2022).

EWS is a tool used by hospital care teams to recognize early signs of clinical deterioration in patients. EWS plays an important role in monitoring and tracking patient deterioration through vital signs and physical condition. Most patients who have previously experienced heart failure or lung failure show physiological signs outside the normal range, which is an indication that the patient's condition is deteriorating (Zuhri & Nuramalia, 2018). Therefore, one of the efforts to monitor and prevent cardiac arrest in hospital inpatient rooms is to increase the ability of nurses to monitor changes in patients' worsening conditions, and to be able to take appropriate action (yuseasmicel et al, 2024).

EWS (Early Warning Score) is a standardized early warning system for disease and acute clinical deterioration (Williams B, 2022). Monitoring the current and ongoing health status of critically ill patients is an important function in critical care (Liou, 2020). Disease progression often differs between patients. Changes in vital signs, blood oxygen saturation, and consciousness are each closely associated with an acute decline in status. Comprehensive implementation of EWS facilitates early identification and prevention of serious adverse events such as heart attacks and unexpected deaths, and can also help reduce the risk of other unexpected events. Appropriate standard warning systems must be tailored to address varying disease characteristics. Changes in a patient's condition are traditionally handled through nursing assessment followed by physician notification and response. However, this process may be influenced by factors such as judgment accuracy, cultural differences, self-confidence, and past experiences that may result in decision-making errors (Lee, 2020; Zhang et al, 2023).

The EWS scoring system for clinical changes in patients uses an assessment of physiological parameters, namely systolic blood pressure, pulse, temperature, oxygen saturation, need for O2 aids, urine production, and consciousness status to detect worsening of the patient's condition with the aim of reducing inpatient mortality and preventing changes.

Irreversible conditions of inpatients EWS on patient clinical changes is a patient care information system that is needed for early detection of worsening patient conditions and supports decision making regarding changes in the patient's condition (Hidayat et al., 2020).

Knowledge, skills and experience not only influence the results of the work carried out but also influence the decision-making process. In clinical practice, the decision-making process comes from knowledge, experience, the nurse's ability to deal with a condition, and the nurse's perception of seeing a problem (Munawaroh & Barlianto, 2020). decision making that will help you determine priorities, namely every symptom that tends to recur or increases in intensity, every symptom that is accompanied by other definite changes, progressive deterioration. the clinical decision making process, which consists of the assessment process, and giving priority to patients based on clinical conditions (Khairina et al., 2020).

Making clinical decisions requires critical thinking skills for nurses. In Indonesia, decision making is not yet fully carried out jointly between nurse and client. So further understanding is needed regarding nursing clinical decision making in the hope that the role of nurses will be more visible as providers of care which will increase public trust in the nursing profession (Rahayu & Mulyani, 2020). Based on the problems above, researchers are interested in taking the title "The Relationship Between The Accuracy of Filling Out The Early Warning Score System Form and Nurse Decision Making"

METHODS

This type of research is quantitative research using a retrospective descriptive research design that describes the relationship between variables, where the dependent variable data is collected first, then the causal variables that occurred in the past are measured using a cross-sectional descriptive research design. Population In this research, there were all 234 nurses in the Inpatient Room at the Haji Adam Malik Central General Hospital, Medan. The sampling technique used in this research was the purposive sampling method.

This research was carried out in an integrated inpatient room at the Haji Adam Malik Central General Hospital in Medan and has been approved by the research ethics committee Universitas sumatera Utara. This study was conducted from July 6 to July 25 2023. The sample in this study were all executive nurses who served in the inpatient ward at the Haji Adam Malik Central General Hospital, Medan. The inclusion criteria in this study were: 1) nurses who were willing to be respondents, 2) nurses who had been trained in filling out the early warning score system (EWSS) form, 3) executive nurses in the medical-surgical inpatient room. The steps in

determining the sample used in this research are based on the Slovin formula with Margin of Error (5%), the number of samples that must be used in this research is 148 respondents.

Analyze statistical data using the SPSS application program. Univariate analysis in this research was carried out to assess the frequency or average value of each variable using descriptive analysis through frequency distribution and percentage data such as age, gender, education, length of work, accuracy in filling out the EWS form and nurse decision making. Bivariate analysis was carried out to determine the relationship between accuracy in filling out the Early form. Warning System (EWS) with nurse decision making at RSUP. Haji Adam Malik. The bivariate analysis process for this research uses the Spearman Rank test statistic.

RESULTS

Table 1 Characteristics of Respondents Frequency Distribution

No.	Characteristics	Frequency	Percentage
1.	Age (years)		
	a. 22-30	34	23
	b. 31-39	49	33,1
	c. 40-48	34	23
	d. 49-58	31	20,9
2.	Education		
	a. Nurse	56	37,8
	b. Diploma III	92	62,2
3.	Seks		
	a. Male	19	12,8
	b. Female	129	87,2
4.	Years of service (Years)		
	a. 1-5	35	23,6
	b. 6-10	42	28,4
	c. 11-15	29	19,6
	d. 16-20	5	3,4
	e. 21-25	17	11,5
	f. 26-30	20	13,5

The distribution of respondent characteristics showed that the highest age range of respondents was 31-39 years, amounting to 49 respondents (33.1%) and the lowest age range, 49-58 years, amounting to 31 respondents (20.9%). Respondents with a final education of D3 in nursing were 92 respondents (62.2%), and 56 respondents had a recent education as a nurse (37.8%). Based on gender, there were 129 female respondents (87.2%) and 19 male respondents (12.8%). The highest working period of respondents was in the range of 6-10 years, namely 42 respondents (28.4%).

Table 2 Accuracy of filling out the Early Warning Score System Form

No.	Form Filling EWSS	Frequency	Percentage
1.	appropriate	131	88,5
2.	Not exactly	17	11,5

There were 131 respondents (88.5%) who filled out the Early Warning Score System (EWSS) form correctly and 17 respondents (11.5%) filled out the Early Warning Score System (EWSS) form correctly.

Table 3 Nurse Decision Making

No	Decision Making	Frequency	Percentage
1	Intuisi	116	78,4
2	Quasirasional	24	16,2
3	Analysis	8	5,4

The highest frequency and percentage of nurse decision making was based on intuition, 116 respondents (78.4%) and the lowest was based on analysis, 8 respondents (5.4%).

Table 4. Relationship between the accuracy of filling out the Early Warning Score System (EWSS) form and nurse decision making

			Form filling	Decision Making
Spearman's Rho	Form filling	Correlation Coefficient	1,000	0,470
		Sig. (2-tailed)		0,000
		N	148	148
	Decision Making	Correlation Coefficient	0,470	1,000
		Sig. (2-tailed)	0,000	
		N	148	148

The relationship between the accuracy of filling out the Early Warning Score System (EWSS) form and nurse decision making obtained a p-value of 0.000 < 0.05, so it can be concluded that the variables of accuracy in filling out the Early Warning Score System (EWSS) form and nurse decision making are significantly correlated. The correlation coefficient value of +0.470 shows that there is a strong correlation between the accuracy of filling out the Early Warning Score System (EWSS) form and nurse decision making. The correlation between the variables shows a positive correlation number of +0.470, this means that there is a unidirectional increase in both variables, meaning that if the Early Warning Score System form is filled in correctly, the decision taken by the nurse is made subjectively based on previous experience, facts about the inpatient room and involves feelings. and deep emotions when making decisions.

DISCUSSION

Based on the research results, it shows that the accuracy of filling out the EWSS form at the Haji Adam Malik Central General Hospital in Medan was mostly included in the correct category with 131 respondents and 17 respondents inaccurate. The results of this study were that the majority of respondents in this study had a Diploma III level of education in Nursing, the gender was female, the age of the respondents in this study was in the range of 31-39 years and the majority of respondents in this study had worked for 6-10 years. This is influenced by several things including age, gender, education and years of work. This is in accordance with research conducted by Widayati (2021) The research results show that the majority of respondents in this study filled out the EWS form completely. The completeness of filling out the EWS is influenced by several factors, namely the characteristics of the respondent which include age, gender, education and length of service.

This is in accordance with research conducted by Widegdo et al., (2022) The research results show that the majority of respondents are in the sufficient compliance category. This is because there are still nurses who do not write down the total results of the EWS scoring and only write down the observation results from vital signs. Researchers assume that women are more interested in becoming nurses because one of the nursing figures is a woman, namely Florence Nightingale and women also have more maternal instincts than men. Researchers also assume that because the nursing profession is more inclined to work that emphasizes caring and compassion.

In the role of nurses who embody the spirit of Florence Nightingale, they can use EWS as an instrument that can be used to identify, monitor physiological changes, and be the basis for determining follow-up plans for patients. In this case, nurses play a role in carrying out initial assessments, monitoring the patient's condition, and deciding on further actions. Implementation of EWS in healthcare settings can reduce the risk of deterioration, reduce clinical incidents, and improve the ability to detect patient physiological changes

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Based on the research results, it was found that as many as 116 respondents made decisions intuitively, as many as 24 respondents made decisions quasi-rationally and as many as 8 respondents made decisions analytically. Based on this data, it shows that the majority of accurate decision making by nurses at the Haji Adam Malik Central General Hospital in Medan is done intuitively.

This is in line with research conducted by Ekwantoro et al., (2021) The research results show that the majority of respondents make decisions by nurses using an intuitive pattern. Intuitive decision making in this research is because these decisions are immediate and accurate based on individual cognition and experience. Nurse experience can increase the intuition of decision making even though intuitive decision making may not be better or may be worse than analytical or other decisions. The nurse's in-depth experience will provide information and knowledge to make adequate decisions in dealing with the patient's condition.

Decision making by nurses is influenced by educational factors, in this study the majority of respondents had a Diploma nursing education level. The data results are in accordance with data from the Data and Information Center Kemenkes RI (2022), reported that there were 6,183 and 1,189 nurses with a Diploma III education. This is in accordance with research conducted by Ekwantoro et al., (2021); Rulino and Putri (2023) which shows the research results that the majority of respondents have a Diploma III nursing education level.

Decision making made by nurses is also influenced by length of service. In this study, the majority of nurses' work experience was 6-10 years. This is in accordance with research conducted by and Ekwantoro et al (2021) which shows the research results that most of the respondents in this study had a working period of 5-10 years.

The results of the Spearman Rank correlation test between the accuracy of filling out the EWSS form and decision making obtained a P-Value of 0.000 < 0.05, so it can be concluded that the variable accuracy of filling out the EWSS form and decision making are significantly correlated. The correlation coefficient value of +0.470 shows that there is sufficient correlation between the accuracy of filling out the Early Warning Score System (EWSS) form and the nurse's decision making. And the correlation between the variables shows a positive correlation number of +0.470, this means that there is a unidirectional increase in both variables, meaning that if the Early Warning Score System form is filled in correctly, the decision taken by the nurse is made subjectively based on previous experience, facts about the inpatient room and involves deep feelings and emotions when making decisions.

This research is in line with research conducted by Ekwantoro et al., (2021) tentang the *factors correlated to nurses' decision activating code blue team in hospital* Regarding the

factors correlated to nurses' decision activating code blue team in hospital, it shows that the results of the Pearson statistical test between organizational culture and decision making have a significant correlation with cognitive scores (0.006<0.05). The research results show that organizational culture in this study is correlated with the policies of the leaders concerned in making decisions. Thus, it will affect patient safety. Organizational support can take the form of empowerment and development in utilizing facilities, both rapid response teams and code-blue teams. The influence of a unit's organizational culture supports decision making when there are problems or changes in patient care and organizational culture can support nurses' decision making to activate the code-blue team.

Clinical decisions are needed to obtain optimal service quality. The provision of nursing care must be based on the values and ethics held by the client and the values of professional nursing care. Combining professional values, ethics and values held by clients will improve services, identify nursing needs and problems more systematically thereby increasing client understanding in making care decisions (Hasibuan, 2020).

DISCUSSION

The analysis results for the relationship between open defecation and stunting incidence in Medan City in 2023 yielded a p-value of 0.08 (p>0.05). Therefore, it can be concluded that there is no significant association between open defecation and stunting incidence in Medan. This finding aligns with a study conducted by Amir, et al. (2023), where Pillar 1 of the CBTS, which is open defecation free, showed no significant relationship with the prevalence of stunting.

This research also indicates that the majority of mothers fall into the category of good practices regarding open defecation, and Medan City has been implementing open defecation free (ODF) practices since 2019. However, there are still cases where mothers in the study group lack private latrines and neglect hygiene and sanitation in their latrines.

Unsanitary latrine conditions can contribute to various diseases originating from latrines. One of the common illnesses is recurrent diarrhea in children, which is part of the multifactorial support for stunting incidents (Zairinayati & Purnama, 2019). Therefore, Noviansyah et al. (2022), study confirms that the CBTS program is a preventive measure against child stunting by improving sanitation, especially latrine ownership and the practice of avoiding open defecation.

The increase in access to proper sanitation through CBTS programs, while not significantly altering the stunting rates, may be attributed to the unbalanced focus of

interventions (Rahman et al., 2023; Nurhayati et al., 2023). If CBTS programs prioritize the provision of sanitation facilities without accompanying nutritional education and improvements in food intake, their impact on stunting may be limited (Wijayanti, et al., 2023). The effects of CBTS programs on stunting may require a longer time to manifest (Tosepu et al., 2023). The influence of good sanitation on reducing infections may only become apparent in subsequent generations.

Based on the analysis, the relationship between handwashing with soap and stunting incidence in Medan City in 2023 was found to have a p-value of 0.001 ($p < 0.05$). Therefore, it can be concluded that there is a significant association between handwashing with soap and stunting incidence in Medan City in 2023. This finding is consistent with the study conducted by Syam & Sunuh (2020), where statistical testing yielded a p-value of 0.000 ($p < 0.05$), indicating a significant relationship between handwashing with soap behavior and stunting incidence.

Based on the observations and interviews, it was found that some families still lack handwashing facilities with soap, some do not practice handwashing at specific times, and some mothers only wash their hands when visibly dirty. Key considerations for setting up handwashing facilities at home include ensuring water and soap are available at toilets, having handwashing stations easily accessible before food preparation and meals, and understanding specific times that necessitate handwashing (Kementerian Kesehatan Republik Indonesia, 2023).

Handwashing with soap is effective in removing pathogens that can cause infections such as diarrhea and respiratory infections. Recurrent diarrhea can disrupt the absorption of essential nutrients crucial for child growth, thus reducing infection rates can contribute to reducing stunting. By reducing diarrhea incidents, children's bodies can absorb nutrients more effectively. Sufficient and well-absorbed nutrition is critical for optimal growth and development of children.

This study aligns with previous research where handwashing with soap and its association with stunting had a p-value of 0.000>0.05 (Soeracmad, et al., 2019). Handwashing behaviors after defecation and before feeding children were also associated with stunting in Ethiopia (Kwami, et al., 2019), and handwashing practices showed a significant relationship with stunting incidence (Sinatrya & Muniroh, 2019).

The analysis results for the relationship between household drinking water and food management and stunting incidence in Medan City in 2023 yielded a p-value of 0.287 ($p>0.05$). Therefore, it can be concluded that there is no significant relationship between household

drinking water and food management with stunting incidence. Although clean drinking water and safe food are crucial, stunting is more influenced by the quality and quantity of nutritional intake. Without balanced and nutritious food intake, the risk of stunting remains high even if water and food are managed well.

These findings align with Cameron et al. (2022), who stated the absence of a relationship between drinking water and stunting incidence, indicating that despite increased access to clean drinking water, there was no significant decrease in stunting rates. Other factors such as maternal nutrition intake during pregnancy play a more significant role in determining child growth status. These results contrast with the study conducted by Amir, et al (2023), where families implementing Household Drinking Water and Food Management pillar III had a 0.044 times lower risk of stunting compared to those who did not implement Household Drinking Water and Food Management.

Based on observations and interviews conducted regarding drinking water management, it was found that the majority of mothers have access to clean drinking water, despite some instances of water being tasteless, odorous, or discolored. Regarding food management, most mothers ensure that drinking bottles and children's cups are clean, serve food covered, and reheat food served for more than 4 hours, both in the case and control groups, thus no significant differences were found in this study. However, it is possible that some mothers still store drinking water and food in uncovered containers, and there are still families that do not store food utensils properly.

The analysis results regarding the relationship between household waste management and stunting incidents in Medan City in 2023 revealed a p-value of 0.001 ($p<0.05$). Therefore, it can be concluded that there is a significant association between household waste management and stunting incidents. Effective waste management can prevent water and soil contamination, which are often sources of pathogenic diseases.

Contaminated water can lead to chronic diarrhea in children, thereby impeding their growth. Poorly managed waste can serve as breeding grounds for disease vectors such as flies, mosquitoes, and rats. These vectors can spread diseases that cause infections in children, such as diarrhea and respiratory infections, which can hinder nutrient absorption and lead to stunting. These research findings align with studies by Mayasari, et al. (2022), where inadequate waste management was associated with a 5.932 times higher risk of stunting compared to cases where waste management met standards.

Based on interviews and observations conducted, it was found that scattered household waste is still prevalent in the vicinity of mothers' homes, open waste disposal sites persist, and

some mothers dispose of waste by burning it, burying it underground, or dumping it in ditches, with general lack of waste sorting. Adhering to proper waste disposal facilities can prevent insects or other animals from entering the household environment, thereby reducing environmental pollution, including air pollution, and the risk of disease transmission (Sukmawati, et al., 2021). Therefore, community commitment to waste management by individuals is crucial to minimizing stunting cases in a region.

The analysis results for the relationship between household liquid waste management and stunting incidents in Medan City in 2023 revealed a p-value of 0.008 ($p<0.05$). This indicates a significant relationship between household liquid waste management and stunting. Proper liquid waste management can prevent pathogens spread and environmental contamination. Clean water and good sanitation are crucial for reducing the risk of diseases that affect nutritional status and child growth. Poorly managed liquid waste can contaminate water and soil sources, increasing the risk of infections such as diarrhea and parasitic infections. Recurrent infections can impair nutrient absorption in children, contributing to stunting.

The findings of this study align with the research conducted by Mayasari, et al., (2022), which found that households with non-compliant sewage disposal systems have a 5.207 times higher risk of stunting compared to those with compliant systems. In this study, water stagnation was found around homes due to open and non-sealed domestic sewage channels that were not connected to infiltration wells. Some mothers did not always ensure their sewage channels were unobstructed. However, the majority reported that they did not discharge liquid waste directly into open spaces; for example, rice washing water was used for watering plants (Hassan et al., 2021). This simple waste management practice can reduce environmental pollution by decreasing the breeding grounds for disease-carrying insects and animals such as flies, cockroaches, rats, and mosquitoes (Amir, et al., 2023).

CONCLUSIONS

Based on the results of research on the relationship between the accuracy of filling out the Early Warning Score System (EWSS) form and nurse decision making at the H. Adam Malik Central General Hospital, Medan 2023, then it can be concluded that: The accuracy of filling out the Early Warning Score System (EWSS) form at the H. Adam Malik Medan Central General Hospital is generally correct; The accuracy of decisions made by nurses at the H. Adam Malik Central General Hospital in Medan is generally intuitive; There is a significant relationship between the accuracy of filling out the early warning score system form and decision making. On the expected research results the results of this research can provide

information to nurses in providing services in hospitals, especially inpatient rooms at the H. Adam Malik Central General Hospital, Medan, that clinical decision making is very necessary to obtain optimal service quality. the provision of nursing care must be based on the values and ethics held by the client and the values of professional nursing care the findings in this research can be used as additional knowledge in the field of medical-surgical nursing, accuracy of filling out the early warning score system (EWSS) form with nursing decision making which can be disseminated to other students. It is also hoped that the results of this research can be used as reference material to be developed and studied more deeply related to nurse decision making, for further research development, it is recommended to conduct research using different research methods, wider samples, and the use of different and more complete research instruments.

REFERENCE

Alfadhila Khairil Sinatrya, & Lailatul Muniroh. (2019). Hubungan Faktor Water, Sanitation, And Hygiene (Wash) Dengan Stunting Di Wilayah Kerja Puskesmas Kotakulon, Kabupaten Bondowoso . *Amerta Nutrition*, *3*(3), 164–170. Https://Doi.Org/10.2473/Amnt.V3i3.2019.164-170

Amir, A., Juhanto, A., & Azis, R. (2023). Pengaruh Lima Pilar Stbm Terhadap Angka Kejadian Stunting Di Kecamatan Camba Kabupaten Maros. *Jurnal Kesehatan Delima Pelamonia*, *3*(1), 1–9.

Andersen Lw, Holmberg Mj, Berg Km, Donnino Mw, G. A. (2019). In-Hospital Cardiac Arrest: A Revie. *Jama.*, *26;321(12)*, 1200–1210. Https://Doi.Org/10.1001/Jama.2019.1696.

B, W. (2022). The National Early Warning Score: From Concept To Nhs Implementation. *Clin Med (Lond)*, *22(6*, 499–505. Https://Doi.Org/10.7861/Clinmed.2022-News-Concept

Barros Aj, E. K. (2023). In-Hospital Cardiac Arrest. *Merg Med Clin North Am.*, *41(3)*, 455–464. Https://Doi.Org/10.1016/J.Emc.2023.03.003.

Dilibero J, M. K. (2021). Outcomes Of In-Hospital Cardiac Arrest: A Review Of The Evidence. *Crit Care Nurs Clin North Am*, *33(3)*(343-356.). Https://Doi.Org/10.1016/J.Cnc.2021.05.009.

Ekwantoro, Putra, K. R., & Setyoadi. (2021). The Factors Correlated To Nurses' Decision Activating Code Blue Team In Hospital. *International Journal Of Public Health Science*, *10*(1), 202–206. Https://Doi.Org/10.11591/Ijphs.V10i1.20574

Febriana Sekar Wijayanti, Princess Handayani, Veza Azteria, M. N. (2023). Overview Of Cbts Pillar 1 Program Evaluation Stop Open Defecation (Sod) At The Public Health Center, Taman Sari District, West Jakarta City In 2022. *Kesans: International Journal Of Health And Science*, *3*(1).

Hasibuan, A. N. (2020). *Pengambilan Keputusan Klinis Perawat Rumah Sakit*. 8.

Hassan, M. U., Aamer, M., Chattha, M. U., Haiying, T., Khan, I., Seleiman, M. F., Rasheed, A., Nawaz, M., Rehman, A., Aslam, M. T., Afzal, A., & Huang, G. (2021). Sugarcane Distillery Spent Wash (Dsw) As A Bio-Nutrient Supplement: A Win-Win Option For Sustainable Crop Production. *Agronomy*, *11*(1). Https://Doi.Org/10.3390/Agronomy11010183

Hazra D, Nekkanti Ac, Jindal A, Sanjay M, Florence I, Yuvaraj S, A., & Kpp. (2022). Code

Blue: Predictors Of Survival. *J Anaesthesiol Clin Pharmacol.*, *38(2)*, 208-214.

Hidayat, D. I., Agushybana, F., & Nugraheni, S. A. (2020). Early Warning System Pada Perubahan Klinis Pasien Terhadap Mutu Pelayanan Rawat Inap. *Higeia Journal Of Public Health Research And Development*, *4*(3), 506–519.

Kemenkes Ri. (2022). Profil Kesehatan Indonesia 2021. In *Pusdatin.Kemenkes.Go.Id*.

Kementerian Kesehatan Republik Indonesia. (2023). *Pedoman Pelaksanaan Sanitasi Total Berbasis Masyarakat (Stbm) 2023*.

Khairina, I., Malini, H., & Huriani, E. (2020). Pengetahuan Dan Keterampilan Perawat Dalam Pengambilan Keputusan Klinis Triase. *Link*, *16*(1), 1–5. Https://Doi.Org/10.31983/Link.V16i1.5449

Kwami, C. S., Godfrey, S., Gavilan, H., Lakhanpaul, M., & Parikh, P. (2019). Water, Sanitation, And Hygiene: Linkages With Stunting In Rural Ethiopia. *International Journal Of Environmental Research And Public Health*, *16*(20). Https://Doi.Org/10.3390/Ijerph16203793

Lee, R.-P. (2020). Early Warning System Safeguarding Patient Lives. *Hu Li Za Zhi*, *67(1)*, 4–5. Https://Doi.Org/10.6224/Jn.202002_67(1).01

Liou, H.-L. (2020). Early Warning System For Illness Deterioration In Critically Ill Patients. *Hu Li Za Zhi*, *67(1)*, 19–24. Https://Doi.Org/0.6224/Jn.202002_67(1).04

Lisa Cameron, Paul Gertler, Manisha Shah, Maria Laura Alzua, Sebastian Martinez, S. P. (2022). The Dirty Business Of Eliminating Open Defecation: The Effect Of Village Sanitation On Child Height From Field Experiments In Four Countries. *Journal Of Development Economics*, *157*.

Mayasari, E., Sari, F. E., & Yulyani, V. (2022). Hubungan Air Dan Sanitasi Dengan Kejadian Stunting Di Wilayah Kerja Upt Puskesmas Candipuro Kabupaten Lampung Selatan Tahun 2021. *Indonesian Journal Of Helath And Medical*, *2*(1), 51–59.

Mirawati, A., Deswita, D., & Solok Poltekkes Kemenkes Padang, K. (2022). Efektifitas Early Warning System Score Dalam Pencegahan Perburukan Pasien Di Rumah Sakit. *Jurnal Kesehatan Lentera 'Aisyiyah*, *5*(1), 568–576.

Moh. Projo Angkasa1, Suparjo2, Sudirman3, Ahmad Baequny4, Z. A. (2021). *Studi Literatur : Peningkatan Keselamatan Pasien Dalam Deteksi Dini Kegawatdaruratan Pasien Menggunakan Early Warning Score*. 1–9.

Munawaroh, L., & Barlianto, W. (2020). Relationship Between Nurse Knowledge And Decision Making Of Code Blue Activation In Rsud Bangil Pasuruan, Indonesia. *International Journal Of Nursing Education*, *12*(4), 86–90. Https://Doi.Org/10.37506/Ijone.V12i4.11222

Noviansyah, N., Romli, K., Mukmin, H., & Wijayanto, R. (2022). Strategy For Accelerating Stunting Prevention Through Religious Approach To Generate Qualified Generation. *International Journal Of Public Health Science*, *11*(3), 1058–1066. Https://Doi.Org/10.11591/Ijphs.V11i3.21383

Penketh J, N. J. (2022). N-Hospital Cardiac Arrest: The State Of The Art. *Crit Care.*, *6;26(1)*, 376. Https://Doi.Org/10.1186/S13054-022-04247-Y

Rahayu, C. D., & Mulyani, S. (2020). Pengambilan Keputusan Klinis Perawat. *Jurnal Ilmiah Kesehatan*, *10*(1), 1–11.

Rahman, Wirna Armei D, & Febriana Muchtar. (2023). Analysis Of The Implementation Of The Community-Based Total Sanitation Program (Cbts) In Unaaha District, Konawe Regency, Southeast Sulawesi Province, Indonesia. *World Journal Of Advanced Research And Reviews*, *18*(2), 657–670. Https://Doi.Org/10.30574/Wjarr.2023.18.2.0875

Rizka Nurhayati, Devi Angeliana Kusumaningtiar, Putri Handayani, N. W. S. (2023). The Effectiveness Of The Implementation Of The Community-Based Total Sanitation Program, The First Pillar Of Stop Open Defecation In The Work Area Of The Palmerah

District Public Health Centre In 2022. *Kesans: International Journal Of Health And Science*, *1*(April).

Rulino, L., & Putri, M. (2023). *Pengetahuan Perawat Dalam Menerapkan Early Warning Score System Pada Pasien Gawat Darurat* . *9*, 70–76.

Subhan, N., Giwangkencana, G. W., Prihartono, M. A., & Tavianto, D. (2019). Implementasi Early Warning Score Pada Kejadian Henti Jantung Di Ruang Perawatan Rumah Sakit Dr. Hasan Sadikin Bandung Yang Ditangani Tim Code Blue Selama Tahun 2017. *Jurnal Anestesi Perioperatif*, *7*(1), 33–41. Https://Doi.Org/10.15851/Jap.V7n1.1583

Sukmawati, Urwatil Wusqa Abidin, H. (2021). Hubungan Hygiene Dan Sanitasi Lingkungan Terhadap Kejadian Stunting Pada Balita Di Desa Kurma. *Journal Peqguruang: Conference Series (Jpcs)*, *3*(November). Https://Doi.Org/Https://Dx.Doi.Org/10.35329/Jp.V3i2.2553

Suyanti, S., Ilmi, B., & Harun, L. (2023). Analisis Faktor Yang Berhubungan Early Warning System Di Bangsal Rawat Inap Dewasa. *Jurnal Kesmas Asclepius*, *5*(2), 78–93. Https://Doi.Org/10.31539/Jka.V5i2.7649

Syam Mahyudi Dedi, H. S. S. (2020). Hubungan Kebiasaan Cuci Tangan, Mengelola Air Minum Dan Makanan Dengan Stunting Di Sulawesi Tengah. *Gorontalo Journal Of Public Health*, *3*(1), 15–22.

Tosepu, R., Nurmayang Sari, S., Juraiti, W., Maretti Hana, A., Sahara, Y., & Yulianti Ilham, A. (2023). A Description Of Community-Based Total Sanitation (Cbts) Pillar 1 Facilities In The Working Area Of Abeli Public Health Center In 2019 -- 2022. *Kne Social Sciences*, *2023*, 255–261. Https://Doi.Org/10.18502/Kss.V8i9.13336

Vazquez Ar, S. A. (2023). Cardiac Arrest As A Public Health Issue. *Emerg Med Clin North Am*, *1(3)*, 405–411. Https://Doi.Org/10.1016/J.Emc.2023.05.003

Widayati, S. (2021). Hubungan Pengetahuan Dan Beban Kerja Perawat Dengan Kelengkapan Pengisian Early Warning Score (Ews) Oleh Perawat Di Rs Dr. Soetarto Yogyakarta. *Repositori Universitas Muhammadiyah Klaten*, 22–33.

Widegdo, H., Marti, E., & Ratnawati, E. (2022). Hubungan Antara Beban Kerja Dengan Kepatuhan Perawat Dalam Pendokumentasian Early Warning System (Ews) Di Ruang Rawat Inap Rumah Sakit Panti Rahayu Gunung Kidul. *I Care Jurnal Keperawatan Stikes Panti Rapih*, *3*(2), 158–167. Https://Doi.Org/10.46668/Jurkes.V3i2.179

Yuliani Soeracmad, Y. S. (2019). Hubungan Sanitasi Lingkungan Rumah Tangga Dengan Kejadian Stunting Pada Anak Balita Di Puskesmas Wonomulyo Kabupaten Polewali Mandar Tahun 2019. *J-Kesmas: Jurnal Kesehatan Masyarakat*, *5*(2), 138. Https://Doi.Org/10.35329/Jkesmas.V5i2.519

Yuseasmicel1), Rasymi Delvy2), Nentiendestri3), E. (2024). *Hubungan Pengetahuan Perawat Dengan Dokumentasi Pengisian Form Ews (Early Warning Scoring) Di Instalasi Rawat Inap*. *7*(1).

Zairinayati, Z., & Purnama, R. (2019). Hubungan Hygiene Dan Sanitasi Lingkungan Dengan Kejadian Stunting Pada Balita. *Babul Ilmi Jurnal Ilmiah Multi Science Kesehatan*, *10*(1).

Zhang , Jiang Jx, Xia J, Yu C, Zhong Mh, Pang Qy, Mao Yl, D. X. (2023). Analysis Of Clinical Application Effects And Challenges Of Early Warning System For The High-Risk Obstetric Women Of China: A Scoping Review. *J Clin Nurs*, *32(9-10)*, 2073–2085. Https://Doi.Org/10.1111/Jocn.16288.

Alfadhila Khairil Sinatrya, & Lailatul Muniroh. (2019). Hubungan Faktor Water, Sanitation, And Hygiene (Wash) Dengan Stunting Di Wilayah Kerja Puskesmas Kotakulon, Kabupaten Bondowoso . *Amerta Nutrition*, *3*(3), 164–170. Https://Doi.Org/10.2473/Amnt.V3i3.2019.164-170

Amir, A., Juhanto, A., & Azis, R. (2023). Pengaruh Lima Pilar Stbm Terhadap Angka Kejadian Stunting Di Kecamatan Camba Kabupaten Maros. *Jurnal Kesehatan Delima Pelamonia*,

3(1), 1–9.

Andersen Lw, Holmberg Mj, Berg Km, Donnino Mw, G. A. (2019). In-Hospital Cardiac Arrest: A Revie. *Jama.*, *26;321(12)*, 1200–1210. Https://Doi.Org/10.1001/Jama.2019.1696.

B, W. (2022). The National Early Warning Score: From Concept To Nhs Implementation. *Clin Med (Lond)*, *22(6*, 499–505. Https://Doi.Org/10.7861/Clinmed.2022-News-Concept

Barros Aj, E. K. (2023). In-Hospital Cardiac Arrest. *Merg Med Clin North Am.*, *41(3)*, 455–464. Https://Doi.Org/10.1016/J.Emc.2023.03.003.

Dilibero J, M. K. (2021). Outcomes Of In-Hospital Cardiac Arrest: A Review Of The Evidence. *Crit Care Nurs Clin North Am*, *33(3)*(343-356.). Https://Doi.Org/10.1016/J.Cnc.2021.05.009.

Ekwantoro, Putra, K. R., & Setyoadi. (2021). The Factors Correlated To Nurses' Decision Activating Code Blue Team In Hospital. *International Journal Of Public Health Science*, *10*(1), 202–206. Https://Doi.Org/10.11591/Ijphs.V10i1.20574

Febriana Sekar Wijayanti, Princess Handayani, Veza Azteria, M. N. (2023). Overview Of Cbts Pillar 1 Program Evaluation Stop Open Defecation (Sod) At The Public Health Center, Taman Sari District, West Jakarta City In 2022. *Kesans: International Journal Of Health And Science*, *3*(1).

Hasibuan, A. N. (2020). *Pengambilan Keputusan Klinis Perawat Rumah Sakit*. 8.

Hassan, M. U., Aamer, M., Chattha, M. U., Haiying, T., Khan, I., Seleiman, M. F., Rasheed, A., Nawaz, M., Rehman, A., Aslam, M. T., Afzal, A., & Huang, G. (2021). Sugarcane Distillery Spent Wash (Dsw) As A Bio-Nutrient Supplement: A Win-Win Option For Sustainable Crop Production. *Agronomy*, *11*(1). Https://Doi.Org/10.3390/Agronomy11010183

Hazra D, Nekkanti Ac, Jindal A, Sanjay M, Florence I, Yuvaraj S, A., & Kpp. (2022). Code Blue: Predictors Of Survival. *J Anaesthesiol Clin Pharmacol.*, *38(2)*, 208-214.

Hidayat, D. I., Agushybana, F., & Nugraheni, S. A. (2020). Early Warning System Pada Perubahan Klinis Pasien Terhadap Mutu Pelayanan Rawat Inap. *Higeia Journal Of Public Health Research And Development*, *4*(3), 506–519.

Kemenkes Ri. (2022). Profil Kesehatan Indonesia 2021. In *Pusdatin.Kemenkes.Go.Id*.

Kementerian Kesehatan Republik Indonesia. (2023). *Pedoman Pelaksanaan Sanitasi Total Berbasis Masyarakat (Stbm) 2023*.

Khairina, I., Malini, H., & Huriani, E. (2020). Pengetahuan Dan Keterampilan Perawat Dalam Pengambilan Keputusan Klinis Triase. *Link*, *16*(1), 1–5. Https://Doi.Org/10.31983/Link.V16i1.5449

Kwami, C. S., Godfrey, S., Gavilan, H., Lakhanpaul, M., & Parikh, P. (2019). Water, Sanitation, And Hygiene: Linkages With Stunting In Rural Ethiopia. *International Journal Of Environmental Research And Public Health*, *16*(20). Https://Doi.Org/10.3390/Ijerph16203793

Lee, R.-P. (2020). Early Warning System Safeguarding Patient Lives. *Hu Li Za Zhi*, *67(1)*, 4–5. Https://Doi.Org/10.6224/Jn.202002_67(1).01

Liou, H.-L. (2020). Early Warning System For Illness Deterioration In Critically Ill Patients. *Hu Li Za Zhi*, *67(1)*, 19–24. Https://Doi.Org/0.6224/Jn.202002_67(1).04

Lisa Cameron, Paul Gertler, Manisha Shah, Maria Laura Alzua, Sebastian Martinez, S. P. (2022). The Dirty Business Of Eliminating Open Defecation: The Effect Of Village Sanitation On Child Height From Field Experiments In Four Countries. *Journal Of Development Economics*, *157*.

Mayasari, E., Sari, F. E., & Yulyani, V. (2022). Hubungan Air Dan Sanitasi Dengan Kejadian Stunting Di Wilayah Kerja Upt Puskesmas Candipuro Kabupaten Lampung Selatan Tahun 2021. *Indonesian Journal Of Helath And Medical*, *2*(1), 51–59.

Mirawati, A., Deswita, D., & Solok Poltekkes Kemenkes Padang, K. (2022). Efektifitas Early Warning System Score Dalam Pencegahan Perburukan Pasien Di Rumah Sakit. *Jurnal Kesehatan Lentera 'Aisyiyah*, *5*(1), 568–576.

Moh. Projo Angkasa1, Suparjo2, Sudirman3, Ahmad Baequny4, Z. A. (2021). *Studi Literatur : Peningkatan Keselamatan Pasien Dalam Deteksi Dini Kegawatdaruratan Pasien Menggunakan Early Warning Score*. 1–9.

Munawaroh, L., & Barlianto, W. (2020). Relationship Between Nurse Knowledge And Decision Making Of Code Blue Activation In Rsud Bangil Pasuruan, Indonesia. *International Journal Of Nursing Education*, *12*(4), 86–90. Https://Doi.Org/10.37506/Ijone.V12i4.11222

Noviansyah, N., Romli, K., Mukmin, H., & Wijayanto, R. (2022). Strategy For Accelerating Stunting Prevention Through Religious Approach To Generate Qualified Generation. *International Journal Of Public Health Science*, *11*(3), 1058–1066. Https://Doi.Org/10.11591/Ijphs.V11i3.21383

Penketh J, N. J. (2022). N-Hospital Cardiac Arrest: The State Of The Art. *Crit Care.*, *6;26(1)*, 376. Https://Doi.Org/10.1186/S13054-022-04247-Y

Rahayu, C. D., & Mulyani, S. (2020). Pengambilan Keputusan Klinis Perawat. *Jurnal Ilmiah Kesehatan*, *10*(1), 1–11.

Rahman, Wirna Armei D, & Febriana Muchtar. (2023). Analysis Of The Implementation Of The Community-Based Total Sanitation Program (Cbts) In Unaaha District, Konawe Regency, Southeast Sulawesi Province, Indonesia. *World Journal Of Advanced Research And Reviews*, *18*(2), 657–670. Https://Doi.Org/10.30574/Wjarr.2023.18.2.0875

Rizka Nurhayati, Devi Angeliana Kusumaningtiar, Putri Handayani, N. W. S. (2023). The Effectiveness Of The Implementation Of The Community-Based Total Sanitation Program, The First Pillar Of Stop Open Defecation In The Work Area Of The Palmerah District Public Health Centre In 2022. *Kesans: International Journal Of Health And Science*, *1*(April).

Rulino, L., & Putri, M. (2023). *Pengetahuan Perawat Dalam Menerapkan Early Warning Score System Pada Pasien Gawat Darurat* . *9*, 70–76.

Subhan, N., Giwangkencana, G. W., Prihartono, M. A., & Tavianto, D. (2019). Implementasi Early Warning Score Pada Kejadian Henti Jantung Di Ruang Perawatan Rumah Sakit Dr. Hasan Sadikin Bandung Yang Ditangani Tim Code Blue Selama Tahun 2017. *Jurnal Anestesi Perioperatif*, *7*(1), 33–41. Https://Doi.Org/10.15851/Jap.V7n1.1583

Sukmawati, Urwatil Wusqa Abidin, H. (2021). Hubungan Hygiene Dan Sanitasi Lingkungan Terhadap Kejadian Stunting Pada Balita Di Desa Kurma. *Journal Peqguruang: Conference Series (Jpcs)*, *3*(November). Https://Doi.Org/Https://Dx.Doi.Org/10.35329/Jp.V3i2.2553

Suyanti, S., Ilmi, B., & Harun, L. (2023). Analisis Faktor Yang Berhubungan Early Warning System Di Bangsal Rawat Inap Dewasa. *Jurnal Kesmas Asclepius*, *5*(2), 78–93. Https://Doi.Org/10.31539/Jka.V5i2.7649

Syam Mahyudi Dedi, H. S. S. (2020). Hubungan Kebiasaan Cuci Tangan, Mengelola Air Minum Dan Makanan Dengan Stunting Di Sulawesi Tengah. *Gorontalo Journal Of Public Health*, *3*(1), 15–22.

Tosepu, R., Nurmayang Sari, S., Juraiti, W., Maretti Hana, A., Sahara, Y., & Yulianti Ilham, A. (2023). A Description Of Community-Based Total Sanitation (Cbts) Pillar 1 Facilities In The Working Area Of Abeli Public Health Center In 2019 -- 2022. *Kne Social Sciences*, *2023*, 255–261. Https://Doi.Org/10.18502/Kss.V8i9.13336

Vazquez Ar, S. A. (2023). Cardiac Arrest As A Public Health Issue. *Emerg Med Clin North Am*, *1(3)*, 405–411. Https://Doi.Org/10.1016/J.Emc.2023.05.003

Widayati, S. (2021). Hubungan Pengetahuan Dan Beban Kerja Perawat Dengan Kelengkapan

Pengisian Early Warning Score (Ews) Oleh Perawat Di Rs Dr. Soetarto Yogyakarta. *Repositori Universitas Muhammadiyah Klaten*, 22–33.

Widegdo, H., Marti, E., & Ratnawati, E. (2022). Hubungan Antara Beban Kerja Dengan Kepatuhan Perawat Dalam Pendokumentasian Early Warning System (Ews) Di Ruang Rawat Inap Rumah Sakit Panti Rahayu Gunung Kidul. *I Care Jurnal Keperawatan Stikes Panti Rapih*, *3*(2), 158–167. Https://Doi.Org/10.46668/Jurkes.V3i2.179

Yuliani Soeracmad, Y. S. (2019). Hubungan Sanitasi Lingkungan Rumah Tangga Dengan Kejadian Stunting Pada Anak Balita Di Puskesmas Wonomulyo Kabupaten Polewali Mandar Tahun 2019. *J-Kesmas: Jurnal Kesehatan Masyarakat*, *5*(2), 138. Https://Doi.Org/10.35329/Jkesmas.V5i2.519

Yuseasmicel1), Rasymi Delvy2), Nentiendestri3), E. (2024). *Hubungan Pengetahuan Perawat Dengan Dokumentasi Pengisian Form Ews (Early Warning Scoring) Di Instalasi Rawat Inap*. *7*(1).

Zairinayati, Z., & Purnama, R. (2019). Hubungan Hygiene Dan Sanitasi Lingkungan Dengan Kejadian Stunting Pada Balita. *Babul Ilmi Jurnal Ilmiah Multi Science Kesehatan*, *10*(1).

Zhang , Jiang Jx, Xia J, Yu C, Zhong Mh, Pang Qy, Mao Yl, D. X. (2023). Analysis Of Clinical Application Effects And Challenges Of Early Warning System For The High-Risk Obstetric Women Of China: A Scoping Review. *J Clin Nurs*, *32(9-10)*, 2073–2085. Https://Doi.Org/10.1111/Jocn.16288.