

Assessment of Nurses Knowledge and Attitudes About Early Warning Systems

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Article Info	ABSTRACT
Article History Received: 27.02.2024 Accepted: 11.06.2024 Published: 25.04.2025	The aim of this study is to examine nurses' knowledge and attitudes about early warning systems (EWS). The sample of this descriptive study consisted of 686 nurses working in 8 hospitals belonging to a private hospital group in Istanbul between July and August 2022. The average age of the participants was 26.46±5.99 and 73.9% were women. The length of time the employees worked in the profession was 5.84 years, and the length of time they worked in the clinic was 2.82 years. 43.7% of the participants worked in mixed services. It was found that 76.3% of the employees had previously received education on EWS, and 75% received this education from the hospital where they worked. 66.9% of nurses stated that they actively used EWS but encountered obstacles (62.7%). More than 80% of employees said they agreed with the health care quality questions, and most respondents agreed with the benefits of using the system in terms of patient outcomes. The scores of the ease of use and multidisciplinary communication subgroups were lower than the health care quality and patient outcomes subgroup scores. When the EWS scores of the participants were evaluated according to their education level, a significant difference was found (p=0.015). Participants have knowledge and awareness about EWS, but it needs to be used more effectively in practice. Additionally, institutional measures should be taken to ensure the multidisciplinary adoption of EWS.
Anahtar Kelimeler Attitude, Early Warning Scores, Knowledge, Nursing.	

Hemşirelerin Erken Uyarı Sistemlerine İlişkin Bilgi ve Tutumlarının Değerlendirilmesi

Makale Bilgisi	ÖZET
Makale Geçmişi Geliş: 27.02.2024 Kabul: 11.06.2024 Yayın: 25.04.2025	Bu çalışmanın amacı hemşirelerin Erken Uyarı Sistemleri (EUS) hakkındaki bilgi ve tutumlarını incelemektir. Tanımlayıcı tipteki bu araştırmanın örneklemi Temmuz-Ağustos 2022 tarihleri arasında İstanbul'da bulunan bir özel hastane grubuna ait 8 hastanede çalışan 686 hemşire oluşturmıştır. Katılımcıların yaş ortalaması 26.46±5.99 olup, %73.9'u kadınlardan oluşmaktaydı. Çalışanların meslekte çalışma süresi 5.84 yıl, klinikteki çalışma süresi 2.82 yıl idi. Katılımcıların %43.7'si karma servislerde çalışmaktaydı. Çalışanların %76.3'ünün daha önce EUS ile ilgili eğitim aldığı, %75'inin bu eğitimi çalıştığı hastaneden aldığı bulundu. Hemşirelerin %66.9'u EUS'u aktif olarak kullandığını ancak engellerle karşılaştığını (%62.7) belirtti. Çalışanların %80'inden fazlası sağlık bakım kalitesi sorularına katıldığını ve katılanların çoğu hasta sonuçları açısından sistem kullanımının yararlarına katıldığını ifade etti. Kullanım kolaylığı ve multidisipliner iletişim alt gruplarının puanı sağlık bakım kalitesi ve hasta sonuçları alt grup puanından daha düşük bulundu. Katılanların EUS puanları eğitim durumuna göre değerlendirildiğinde eğitim düzeyleri arasında anlamlı fark bulundu (p=0.015). Katılımcıların EUS ile ilgili bilgi ve farkındalıkları vardır ancak uygulamada daha etkin kullanımı gerekmektedir. Ayrıca EUS'un multidisipliner olarak benimsenmesi için kurumsal önlemler alınmalıdır.
Keywords: Tutum, Erken Uyarı Skorum, Sistemleri, Bilgi, Hemşirelik.	

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INTRODUCTION

Early Warning Systems (EWS) are scoring systems that provide the opportunity to intervene by predicting critical situations that may occur in the patient's physiological parameters. The aim of these systems is to reduce intensive care unit (ICU) admissions, ICU and hospital length of stays, and mortality rates (Winters & DeVita, 2017). In a study conducted by Goldhill and McNarry (2004), it was found that most cases leading to death in hospital were long-time hospitalisations and there was a significant relationship between physiological changes and mortality rates. It is stated that with the use of EWS, changes can be recognised and intervened at an early stage. The study by Moroseos et al. (2014) found that the use of these systems reduced the code blue rate, in-hospital mortality and unplanned transfers to the ICU.

The primary purpose of healthcare is to ensure patient safety. Patient safety, the most basic quality indicator for healthcare delivery, is a quality standard in healthcare that is prioritized all over the world. There are national and international assessment organisations that deal with the assessment of quality processes. The organisation that attracts the most attention in our country is Joint Commission International (JCI) (Şahin, 2020). Goals of the JCI for the patient safety include effective communication and improvement of alarm systems related to patient safety (Joint Commission International, 2017).

Early warning systems (EWS) enable early detection of negative changes in the physiological parameters that are monitored in the patient. Delayed detection of deterioration in physiological parameters (body temperature, blood pressure, pulse, respiration and level of consciousness) may delay intervention. In this case, the patient's life is at risk, life expectancy is shortened, prognosis worsens and hospital stay is prolonged. The EWS is used in many countries and the problems are solved by giving an early warning and notifying the physician. In developed countries such as the UK, it is used as a routine monitoring system. The system can be used in all services and emergency departments that monitor patients prior to intensive care. Acute problems can develop in hospitalized patients and admission to the ICU can be prevented if clinical staff are aware of the situation (Armitage et al., 2007). The EWS can be used to predict severity, mortality and morbidity in patients admitted to the emergency department (Kaplan Afacan et al., 2022). In the study conducted by Miles et al. (2023) a significant increase in the number of patients diagnosed before cardiac arrest developed was noted after the use of the EWS.

The use of EWS by nurses will help to increase the quality of services and improve patient outcomes. Nurses are usually the first healthcare professionals to recognise signs of deterioration in the patient's condition and call the rapid response team (Callaghan et al., 2017). Early recognition of acute changes in vital signs by nurses, who spend most of their time with patients, and early intervention through communication with the physician will prevent the deterioration of the patient's condition (Wood et al., 2019).

If nurses are properly trained in the use of the EWS and have appropriate systems in place in the hospitals, rapid and effective interventions can be made for the benefit of the patient and patient safety is positively impacted. An effective training programme should be planned so that EWS is not perceived as a practice that increases nurses' workload. Staff need to be convinced of the necessity and benefits of the system. In conscientious practises, staff who do not have confidence in the system may not participate effectively. To prevent this, it is important to raise staff awareness, discuss the process together and put it into practise.

The aim of this study is to examine nurses' awareness and attitudes towards early warning systems. The questions of the study are:

1. Do nurses have knowledge and experience regarding EWS?
2. Do the nurses actively use EWS?
3. What do nurses think about the benefits of EWS?
4. Are there barriers to the use of EWS?

METHOD

Study Design

The study was conducted in a descriptive research design.

Study Sample

It was conducted with nurses working in eight hospitals of a private hospital group in Istanbul. No exclusion criteria were defined. 686 out of 1200 nurses working in the hospitals during the study period (July-August 2022) agreed to participate in the study.

Study Instruments and Processes

A questionnaire developed by the researchers was used to collect the data. The form consisted of three parts. The first part contained questions about age, gender, education, professional and clinical experience, the second part contained questions about the nurses' experiences with the EWS. The third part contained 22 questions about the nurses' knowledge and attitudes towards EWS. These questions were created by the researchers after reviewing the relevant literature. The response options were based on a 5-point Likert scale (strongly disagree, disagree, not sure, agree, strongly agree). The 22 questions in the third section were discussed under 4 headings. The first section was about the quality of healthcare (items 1, 8, 15, 17, 18 and 19), the second section was about patient outcomes (items 2, 3, 4 and 5), the third section was about the ease of use of the EWS (items 6, 7, 9, 10, 16, 20 and 21) and the fourth section was about multidisciplinary communication (items 11, 12, 13, 14 and 22). Since the 11th and 12th questions were not included in the scoring of the scale, 20 questions were scored and the scale was scored out of 100 points (Yurdabakan & Çüm, 2017). The total score was calculated by reversing the negative statements in the last 3 questions. Higher scores were considered more positive attitudes. Before applying the survey to all participants, 3 expert opinions were consulted and a pilot application was conducted with 5 participants to test comprehensibility. The questionnaires were then distributed to all participants. In order to test the invariance of the questionnaire over time, the surveys were repeated on 30 people at a two-week interval. The Cronbach's alpha coefficient was calculated at 0.921 for the overall scale (Table 1).

Table 1

Item-Subdomain Correlations and Cronbach's Alpha Values of the Questionnaire Assessing Knowledge and Attitude Towards Early Warning Systems

		*r	p	Cronbach's alpha
Health care quality	1 Early Warning System (EWS) is beneficial in ensuring patient safety.	0.776	<0.001	0.932
	8 EWS reduces costs and reduces healthcare expenses.	0.795	<0.001	
	15 EWS contributes positively to nurse competence.	0.844	<0.001	
	17 EWS should be applied in all inpatient in health institutions.	0.867	<0.001	
	18 EWS should be included in the nursing education curriculum.	0.875	<0.001	
	19 EWS improves service quality.	0.867	<0.001	
Patient outcomes	2 The use of EWS provides early diagnosis and treatment.	0.875	<0.001	0.932
	3 EWS is effective in decreasing mortality.	0.898	<0.001	
	4 EWS improves the quality of life of the patient.	0.895	<0.001	
	5 EWS prevents deterioration of the patient's medical condition.	0.879	<0.001	
	6 The nurse who uses an EWS system feels safe.	0.833	<0.001	0.609
	7 EWS is easy and practical to perform.	0.817	<0.001	
Ease of use	9 EWS reduces the nurse's workload.	0.847	<0.001	
	10 EWS prevents loss of nurse's time.	0.852	<0.001	
	16 EWS is a guide for the nurse.	0.805	<0.001	
	20 I encounter obstacles when using EWS.	0.071	0.064	
	21 The use of EWS is a waste of time for nurses.	0.228	<0.001	
Multidisciplinary communication	11 EWS positively affects communication with other team members.	0.786	<0.001	0.696
	12 By use of EWS, nurses can always communicate with physicians.	0.783	<0.001	
	13 Physicians always respond quickly to the EWS call.	0.389	<0.001	
	14 EWS contributes positively to nurse-physician communication.	0.725	<0.001	
	22 Not every physician attaches the same importance to the EWS call.	0.789	<0.001	

EWS: Early Warning Systems, * Spearman correlation test,

Data Analysis

The data were analyzed using the SPSS program (version 21.0, IBM). The Kolmogorov-Smirnov test was performed to assess the conformity of the data with the normal distribution. As the data did not show a normal distribution, non-parametric tests were used. The Mann-Whitney U or Kruskal-Wallis test was used to compare the mean scale scores between two or more groups, and Spearman correlation analysis was used to assess the relationship between two continuous variables. The results were analyzed with a 95% confidence interval and the significance level was $p < 0.05$.

RESULTS

The mean age of the nurses participating in the study was 26.46 years and 73.9% were female. 20.1% of the participants had a bachelor's or master's degree. The mean duration of employment as a nurse was 5.84 years and the mean duration of working in the current clinic was 2.82 years. 43.7% of the nurses worked on mixed wards (Table 2).

Table 2
Sociodemographic and Work-Related Characteristics of the Participants

	n (%)
Age (X±SD) (min-max)	26.46 ±5.99 (20-59)
Gender	
Female	506 (73.9)
Male	179 (26.1)
Educational background	
High school	269 (39.4)
Associate degree	277 (40.6)
Bachelor's degree	127 (18.6)
Graduate program	10 (1.5)
Professional experience (year) (X±SD) (min-max)	5.84 ±5.72 (0.25-39)
Professional experience (year)	
0-1	106 (15.8)
1-3	176 (26.3)
3-5	138 (20.6)
5-10	147 (21.9)
10 and above	103 (15.4)
Clinics where participants work	
Ward (mixed, internal, surgical etc.)	296 (43.7)
Intensive care units	223 (32.9)
Areas providing outpatient services	84 (12.4)
Interventional fields (operating room, angiography, endoscopy etc.)	33 (4.9)
Educator nurse, manager nurse etc.	26 (3.8)
Other	15 (2.2)
Duration of working in current clinic (years) (X±SD) (min-max)	2.82 ±3.19 (0-26)
Duration of working in current clinic (years)	
0-0.5	117 (17.8)
0.5-1	160 (24.4)
1-3	208 (31.7)
3-5	85 (12.9)
5-10	62 (9.4)
10 and above	25 (3.8)

When participants were asked about their experience with EWS, 76.3% of participants indicated that they had received training on EWS, and 75% indicated that they had received this training from the hospital where they work. More than half (61.8%) stated that they received regular training on EWS, e.g. in the form of continuing education. Two thirds of participants (66.9%) stated that they actively use the EWS and 62.7% of active users encountered obstacles when using the system. About two thirds (62.8%) feel that they use the EWS appropriately (Table 3).

Table 3*Participants` Characteristics of Use of Early Warning Systems (EWS)*

	n (%)
Have you received any education/ training regarding EWS?	
Yes	518 (76.3)
No	161 (23.7)
*If the answer is “Yes”, where have you got education / training?	
From school	62 (12.0)
From the hospital where I work	388 (75.0)
From scientific publications	13 (2.5)
From digital platforms	17 (3.3)
Other	37 (7.2)
Do you actively use EWS where you work?	
Yes	454 (66.9)
No	225 (33.1)
If the answer is “yes”, are there any obstacles in using EWS?	
Yes	169 (37.3)
No	284 (62.7)
Do you feel competent in using EWS?	
Yes	418 (62.8)
No	248 (37.2)
Do you receive periodic education /in-service training etc. about EWS?	
Yes	417 (61.8)
No	258 (38.2)

* One person was considered missing by not answering the question of where the employee was trained.

When assessing their knowledge and attitudes towards the EWS, more than 80% of nurses indicated that they agree (agree/strongly agree) with the questions on the quality of healthcare and the benefits of using the system. Most nurses agree that they feel safe using the system, that it is easy and practical to use, that it provides guidance to nurses, reduces workload and prevents wasted time. 34.2% of nurses feel that they do not encounter any obstacles when using the system and 41.6% state that they do encounter obstacles. While 53.2% disagreed with the statement "Using the EWS is a waste of time for nurses", 33% agreed. More than 70% agreed that EWS contributes to communication between team members. However, only 44.1% of participants agreed with the question "Not every physician prioritizes the EWS call" (Table 4).

When analysing the results of the EWS knowledge and attitude questionnaire, the mean scale score was 60.09 for the overall score, 3.19 for the quality of healthcare, 3.22 for the patient outcomes, 2.91 for the ease of use and 2.82 for the multidisciplinary communication sub-dimensions (Table 5).

Table 4

Frequency of Responses to the Questionnaire Assessing Knowledge and Attitudes Towards Early Warning Systems (EWS)

	Strongly disagree n (%)	Disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
1 Early Warning System (EWS) is beneficial in ensuring patient safety.	9 (1.3)	11 (1.6)	51 (7.4)	343 (50.0)	272 (39.7)
2 The use of EWS provides early diagnosis and treatment.	8 (1.2)	18 (2.6)	52 (7.6)	343 (50.0)	265 (38.6)
3 EWS is effective in decreasing mortality.	7 (1.0)	13 (1.9)	79 (11.5)	340 (49.7)	245 (35.8)
4 EWS improves the quality of life of the patient.	7 (1.0)	10 (1.5)	72 (10.5)	333 (48.6)	263 (38.4)
5 EWS prevents deterioration of the patient's medical condition.	9 (1.3)	12 (1.8)	59 (8.6)	326 (47.7)	278 (40.6)
6 The nurse who uses an EWS system feels safe.	7 (1.0)	15 (2.2)	65 (9.5)	329 (48.0)	270 (39.4)
7 EWS is easy and practical to perform.	8 (1.2)	8 (1.2)	78 (11.4)	346 (50.5)	245 (35.8)
8 EWS reduces costs and reduces healthcare expenses.	8 (1.2)	17 (2.5)	97 (14.2)	323 (47.2)	240 (35.0)
9 EWS reduces the nurse's workload.	10 (1.5)	17 (2.5)	90 (13.1)	328 (47.9)	240 (35.0)
10 EWS prevents loss of nurse's time.	7 (1.0)	16 (2.3)	76 (11.1)	318 (46.6)	265 (38.9)
11 EWS positively affects communication with the other healthcare team.	8 (1.2)	14 (2.0)	69 (10.1)	333 (48.8)	259 (37.9)
12 In EWS, nurses can always communicate with physicians.	11 (1.6)	21 (3.1)	100 (14.6)	323 (47.1)	231 (33.7)
13 Physicians always respond quickly to the EWS call.	17 (2.5)	33 (4.8)	150 (21.9)	290 (42.3)	195 (28.5)
14 EWS contributes positively to nurse-physician communication.	8 (1.2)	16 (2.3)	108 (15.8)	332 (48.5)	221 (32.3)
15 EWS contributes positively to nurse competence.	8 (1.2)	13 (1.9)	73 (10.6)	338 (49.3)	254 (37.0)
16 EWS is a guide for the nurse.	10 (1.5)	9 (1.3)	78 (11.4)	323 (47.2)	265 (38.7)
17 EWS should be applied in all inpatient health institutions.	9 (1.3)	11 (1.6)	69 (10.1)	325 (47.4)	271 (39.6)
18 EWS should be included in the nursing education curriculum.	9 (1.3)	7 (1.0)	94 (13.7)	311 (45.5)	263 (38.5)
19 EWS improves service quality.	9 (1.3)	15 (2.2)	67 (9.8)	337 (49.4)	254 (37.2)
20 I encounter obstacles when using EWS.	99 (14.4)	136 (19.8)	166 (24.2)	179 (26.1)	106 (15.5)
21 The use of EWS is a waste of time for nurses.	171 (25.0)	193 (28.2)	95 (13.9)	143 (20.9)	83 (12.1)
22 Not every physician attaches the same importance to the EWS call.	97 (14.1)	125 (18.2)	162 (23.6)	174 (25.4)	128 (18.7)

Table 5

Mean Scores of the Questionnaire Assessing Knowledge and Attitudes Towards Early Warning Systems (EWS)

	X±SD	min-max	Median (IQR)
EWS Score	60.09 ±11.38	8-80	59.0 (56-69)
Health care quality	3.19 ±0.69	0-4	3.17 (3-3.83)
Patient outcomes	3.22 ±0.71	0-4	3.0 (3-4)
Ease of use	2.91 ±0.54	0.57-4	2.86 (2.71-3.43)
Multidisciplinary communication	2.82 ±0.65	0.40-4	2.8 (2.6-3.2)

No correlation was found between participants' EWS scores and their age, their experience in profession and in current clinic. There is no significant difference between men and women in terms of EWS scores. When the participants' EWS scores were analysed according to their level of education, a significant difference was found ($p = 0.015$). The scores of those who had completed postgraduate studies were higher (65) than those of other educational levels (57 for undergraduate, 61 for high school). The EWS scores of those working on the wards were higher than the EWS scores of those working in the ICU (61 vs 58, $p < 0.001$) (Table 6).

Table 6*EWS Knowledge and Attitudes Scores According to Sociodemographic and Work-Related Characteristics*

	Mean $\pm$ sd (Median)	Test value	p
Age (r, p)		* $r=0.12$	0.75
Gender			
Female	60.14 $\pm$ 11.48 (59)	** $Z=-0.25$	0.802
Male	59.94 $\pm$ 11.17 (60)		
Educational background			
High school	60.66 $\pm$ 11.35 (61)	*** $\chi^2=10.46$	0.015
Associate degree	60.35 $\pm$ 11.19 (59)		
Bachelor's degree	58.19 $\pm$ 11.00 (57)		
Post graduate	60.34 $\pm$ 20.39 (65)		
Duration of working in profession (r, p)		$r=0.63$	0.10
Clinics where participants work			
Ward (mixed, internal, surgical etc.)	61.29 $\pm$ 10.37 (61)	$Z=-3.628$	<0.001
Intensive care units	57.85 $\pm$ 11.94 (58)		
Duration of working in the clinic (r, p)		$r=0.38$	0.33

* Spearman correlation test, **Mann-Whitney U test, ***Kruskal-Wallis test

The scores of those who had previously received training on EWS were higher than those who had not (63 vs 56, $p < 0.001$). Those who had received regular training had higher scores than those who had not (62 vs 59, $p < 0.001$). The score of those who found themselves competent in using the EWS was higher than those who did not (63 vs 58.5, $p < 0.001$). The score of those who actively used the EWS was higher than those who did not use the EWS (62 vs 56, $p < 0.001$). For those who actively used the system and stated that they had encountered obstacles, the EWS score was lower (Table 7).

Table 7*EWS Knowledge and Attitudes Scores According to Characteristics of Use of EWS*

	Mean $\pm$ SD (Median)	Test value	p
Have you received any education/training regarding EWS?			
Yes	62.73 $\pm$ 9.25 (63)	-5.72	<0.001
No	58.68 $\pm$ 9.48 (56)		
Do you actively use EWS where you work?			
Yes	62.45 $\pm$ 9.30 (62)	-6.83	<0.001
No	55.35 $\pm$ 13.53 (56)		
If the answer is "yes"; Do you face barriers in use of EWS?			
Yes	59.61 $\pm$ 8.97 (59)	5.41	<0.001
No	64.14 $\pm$ 9.10 (65.5)		
Do you feel competent in using EWS?			
Yes	62.98 $\pm$ 9.32 (63)	-6.65	<0.001
No	59.56 $\pm$ 8.73 (58.5)		
Have you received any periodic education/in-service training etc. about EWS?			
Yes	62.56 $\pm$ 9.44 (62)	-4.84	<0.001
No	61.95 $\pm$ 8.66 (59)		

DISCUSSION

The aim of this study was to investigate nurses experiences, knowledge and attitudes on early warning systems.

It was found that staff are aware of the EWS and have been trained in the institution they work for, and most of them feel competent in relation to the EWS. The EWS scores of those who had received training were high. This shows the importance the institution places on training and existence of institutional procedures. Staff are aware of the advantages and benefits of EWS. Although they state that they have no problems with the application, there are some who express negative thoughts about the multidisciplinary approach. It was found that the EWS scores of those who have received postgraduate training are high. This can be explained by the education of the employees, and the fact that they pursue scientific publications. Interestingly, no difference was found between the EWS knowledge of nurses with a high school degree and those with a university degree. The fact that EWS is not included in the formal curriculum at any educational level, the fact that high school graduates enter the profession earlier and their individual awareness could be the reason for this situation. Most employees stated that the early warning system should be included in the training curriculum. 80% of nurses stated that the early warning system should be introduced in all inpatient healthcare facilities.

Most of the research participants are female. We did not find any difference between the EWS knowledge scores of men and women. There was no correlation between the EWS scores of the study participants and their age, experience in profession and in current clinic. This result could be due to the fact that all employees received the same in-service education and worked according to the same procedures. Most participants had between 0-5 years of work experience. Nurses finding employment in the private sector in the early years and trying to move to the public sector in the following years could be the cause of the lack of long-term employees in private hospitals. Experience and communication are directly related, and as experience increases, so do communication skills and multidisciplinary interaction. Almost half of the staff work on mixed wards and their EWS scores are higher than those of the ICU staff. As the physician is always on site in the ICU, the need for EWS use may be lower than on the wards. The increased awareness of the EWS among nurses working on the wards is due to the fact that the wards are mixed and patient parameters are communicated to the responsible physician rather than to a single physician.

Almost half of the participants have been working in their current clinic for between 0 and 1 year. This data suggests that the turnover rate within the department or the hospital is high. Many studies suggest that turnover rates are high among nurses in private clinics and that job satisfaction, organisational commitment and working conditions play a role in high turnover rates (Özcan et al., 2016). Increasing employment in the public sector is another factor influencing staff turnover rates. In the study conducted by Sürer (2009) the turnover rate of nursing staff in public hospitals was between 0.51% and 7.25%, while in private hospitals it was between 20.96% and 26.96%. In the study conducted by Aktaş et al. (2022) almost one-fifth of nurses were considering quitting. A high turnover rate among nurses can lead to a decrease in the number of nurses with professional experience in patient care and a decrease in the quality of care. According to Işık (2018) the quality of care increases when job satisfaction increases. When job satisfaction decreases, the intention of employees to resign increases.

Two thirds of the participants stated that they actively use the EWS. Among them, the scores of those who stated that they encountered obstacles were lower. The occurrence of obstacles has a negative effect on the use of EWS. In the study conducted by Petersen (2018), it is stated that nurses are reluctant to call the physician and the reason for this is fear of judgement. The barriers encountered may be related to other healthcare disciplines not adopting the system or the current system being ineffective.

Most participants responded favourably to the questions on the quality of healthcare and patient outcomes and indicated that using the system was beneficial. Ratings for the question groups on ease of use and multidisciplinary communication were lower. The fact that a third of staff felt that using the system can lead to wasted time suggests that the system does not work equally effectively in every clinic. In the study by McGaughey et al. (2017) it was found that the quality of patient care was affected by lack of clinical experience and low levels of training, that hierarchical communication caused loss of time in patient care, and that with training and multidisciplinary protocols, the number of cardiac arrests decreased.

Most nurses stated that they are able to communicate quickly with physicians and receive fast responses. Almost half of them believe that not every physician gives the same importance to their call. The difference between the data suggests that nurses who use EWS have problems with professional communication and that younger colleagues have concerns about communicating with physicians. In a study conducted by Foley and Dowling (2019) in an emergency department on the use of EWS, nurses were found to have preconceptions about using the system and that patient follow-up was negatively affected by their lack of experience. In a qualitative study conducted by Bigham et al. (2019) in an emergency department, staff indicated that the use of EWS on the wards could be beneficial, but that they saw it as unnecessary, challenging and an insult to their expertise in the emergency department and tended to continue to deliver medical care using traditional methods and approached it with prejudice.

CONCLUSION AND SUGGESTIONS

Nurses working in the institutions where this study was conducted are aware of EWS and consider it useful. EWS is included in the institutional procedure and in-service training. Although nurses are aware of EWS, it is not used actively enough. There is a need to improve communication with other health disciplines. To overcome all these obstacles, the EWS should be included in the undergraduate education curriculum, the employment of qualified nurses should be increased and the use of EWS in healthcare facilities should be standardized. It is important to create multidisciplinary awareness in the facilities that use EWS and to go beyond individual communication and embed it in the organisational culture.

Furthermore, in a review of the literature, no scale was found that assesses the awareness and knowledge level of nurses regarding the use of EWS. Studies conducted for similar purposes are qualitative in nature and it is not possible to compare the results. There is a need for developing a standardized scale on this topic.

LIMITATIONS

This study was conducted with employees of eight private hospitals providing health services under the same institutional procedures. The institution's hospitals outside Istanbul, other private hospitals and public hospitals were not included. Therefore, the results cannot be generalized to all healthcare institutions.

Ethics Approval

The research was approved by the Social and Human Research Ethics Committee of İstinye University (11.03.2022/03/02) and written approval was obtained from the institution. The participants who were surveyed were informed about the study and it was assumed that they agreed to participate if they answered the questions. Participation was on a voluntary basis. The names of the participants were not mentioned in the surveys so that the participants could express their feelings and thoughts confidentially.

Conflict of interest

The authors declare no conflict of interest.

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Authorship contributions

Design: T.Y., Z.T., Data Collection or Processing: T.Y., Analysis or Interpretation: T.Y., Z.T., Literature Search: T.Y., Z.T., Writing: T.Y., ZT.

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