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Research Article

Nurses' Knowledge and Practice About In-Hospital Triage: A Cross-Sectional Study in Jahrom

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Abstract:

Background: Triage is one of the basic components in the emergency room and its correct application improves health care outcomes. Nurses are commonly responsible for the first triage at emergency department. Therefore, their knowledge and practice of triage would greatly affect healthcare prioritizing process. The purpose of this study was to investigate the knowledge and practice of nurses in educational and medical hospitals of Jahrom city regarding in-hospital triage in 2020.

Methods: This research was an analytical cross-sectional study. Sampling was done by census method of all nurses working in the emergency department of hospitals affiliated with Jahrom University of Medical Sciences, in September 2020. Data collection tools included three questionnaires of demographic information, knowledge and practice of nurses about hospital triage. The range of scores that could be obtained for the knowledge assessment ranged from 1 to 15, and from 1 to 10 for the performance assessment and from 1 to 25 for the total score.

Results: A 53.47% of the responses in knowledge section were correct with mean score of 7.87±1.99. In performance assessment, 73.17% of the responses were true with a mean score of 71.31±1.47. The mean total score (total of knowledge and performance) of hospital triage participants was 15.06±3.12. Spearman correlation coefficient showed a positive correlation between nurses' knowledge and practice in in-hospital triage (r = 0.44, P = 0.001).

Conclusion: The results of this study indicate that the level of knowledge and attitude of nurses working in the emergency departments of the centers covered by Jahrom University of Medical Sciences regarding triage is moderate. In this regard, holding triage training courses for staff in order to provide high-quality services is recommended.

Keywords: Knowledge, Practice, Nurses, Triage, Hospital.

Introduction

The emergency department usually provides 24-hour emergency care, and an unpredictable number of patients present to the emergency department with urgent conditions. Patients with life-threatening conditions such as cardiac arrest, airway obstruction, and shock should be given priority for immediate primary care. However, the overcrowding of patients affects the quality of care

provided to them (1,2). Triage is placing patients in the right place and time to receive the right care and allocate the right resources to meet the medical needs of patients (2). In other words, triage is an essential method in the emergency department as an effective system for reducing waiting time and ensuring proper treatment for all patients (1). Triage is a classification of patients with priority groups based on the severity of their medical conditions to receive the necessary assistance (3). Patients' triage is divided by nurses into five categories from immediate to delayed priority based on the severity and severity of the disease (4). Triage is one of the essential components of the emergency department, which, if done correctly and scientifically, reduces patient mortality (5) and improves resource utilization (6). This is done to perform the best treatment, which is one of the most important goals of the emergency department. The goal of triage in accidents with limited medical resources is to provide the maximum necessary services to most of the injured in the shortest possible time. Rapid identification of patients with serious illnesses and rapid implementation of vital measures is possible with triage and prioritization of patients (3). Emergency ward triage is a type of triage performed daily by emergency nurses. The goal is to identify high-risk patients who need immediate care (1). Triage in critical situations has different goals and processes than triage in normal conditions. In times of disaster, due to a large number of injured and limited facilities and services, there is a need for accurate classification and allocation of services (3). Previous studies have shown that the main factor related to triage skills are knowledge and awareness of emergency nurses (1). Nurses who perform triage need sufficient knowledge, information, and experience in this field (5). Unfortunately, there are serious concerns about the knowledge and practice of triage nurses. In various studies, the knowledge and practice of triage nurses have been reported to be poor or below average. Stiell et al. reported that nursing triage performance in Canada is moderate (7). In Meyer et al.'s study, the knowledge and practice of nursing triage in South Africa were reported to be moderate (8). Another study from Ethiopia showed that participants in the study had no knowledge about patient classification and waiting time for treatment groups (2). A study in Sweden found that nurses did not receive adequate training in triage (9). The study of Mirhaghi et al. also showed that nurses are not well acquainted with the knowledge of hospital triage (4). Therefore, it is necessary to evaluate the knowledge and skills of triage of emergency nurses (2). Therefore, the purpose of this study was to investigate the knowledge and practice of nurses in educational and medical hospitals of Jahrom city about in-hospital triage in 2020.

Methods

Study setting and participants:

This descriptive cross-sectional study was performed in 2020 on nurses of educational and medical hospitals in Jahrom (Motahhari and Peymanieh). Sampling was done by census of all ED nurses. Nurses working in the emergency department who have at least one year of experience in this department and express a desire to participate in the study were included in the study. Incomplete completion of questionnaires and lack of cooperation in the implementation of the study were considered exclusion criteria.

Data collection:

The data collection tool was a researcher-made questionnaire. In the first part, this questionnaire included questions in the field of demographic information, working conditions and triage experience status. The second part consisted of 15 questions to assess the knowledge of nurses by performing hospital triage. Finally, to evaluate the performance of emergency department nurses in the

field of triage, a test consisting of 10 questions, each of which presented a different scenario for patient prioritization, was designed and provided to nurses. These scenarios were designed by two emergency medicine specialists with expertise in the field of triage according to the prevalence of the type of ED referrals. The range of scores that could be obtained for the knowledge assessment ranged from 1 to 15, and from 1 to 10 for the performance assessment and from 1 to 25 for the total score (10).

Ethical issues:

Before conducting the study, the researchers introduced themselves to the nurses and after explaining the objectives and method of the research, informed written consent was obtained to participate in the study. At the same time, the research samples were assured that the obtained information would be kept confidential.

Analytical methods:

Data analysis was performed using SPSS software version 21 and using descriptive (mean and standard deviation) and inferential statistical tests (Shapiro-Wilk and Spearman correlation coefficient) at a significant level of $P < 0.05$ took place.

Results

Among 74 nurses registered in ED of Motahhari and Peymanieh hospitals, 61 (82.43%) responded to our survey of which 54.1% of participants were working in Peymanieh emergency department and the rest were working at Motahhari hospital emergency department. The ratio of male and female participants in the study was almost equal. The majority of emergency department nurses (72.1%) were active in rotating shifts. 37.7% of them were having working experience of fewer than 5 years old, 23% were between 5 and 10 years, 26.2% from 10 to 15 years, and the rest were over 15 years. Most nurses in the emergency department (67.2%) have one year or less experience in ED (Table 1).

Table 1. Demographic variables in study participants

		n= 61
ED setting, n, %	Peymanieh Hospital	33(54.1%)
	Motahari Hospital	28(45.9%)
Sex, n, %	Male	32(52.5%)
	Female	29(47.5%)
Age, mean, years		33.36±5.86
Graduation GPA, mean, score from 20		16.95±1.18
Shift schedule, n, %	Morning	10(16.4%)
	Evening	5(8.2%)
	Night	2(3.3%)
	Variable	44(72.1%)
Nursing Experience, n, %	Under 5 years	23(37.7%)
	5 to 10 years	14(23%)
	10 to 15 years	16(26.2%)
	More than 15 years	8(13.1%)
ED Nursing Experience, n, %	One years	41(67.2%)
	Two years	15(24.6%)
	Three years and more	5(8.2%)
Triage Nursing Experience, n, %		34(55.7%)

34.4% of them were familiar with triage through workshops, 18% through university courses and 37.7% from colleagues and the rest from other sources. A 53.47% of the responses in knowledge section were correct with mean score of 7.87±1.99. In performance assessment, 73.17% of the responses were true with a mean score of 7.31±1.47. It is worth mentioning that the range of nurses 'attitudes was zero to 10 and the range of nurses' performance scores was zero to 15. The mean total score (total of knowledge and performance) of hospital triage participants was 15.06±3.12. A non-parametric test was used to investigate the relationship between nurses' demographic characteristics and their knowledge and practice in the field of in-hospital triage. The results showed that there was a significant difference between nurses' service

history and their performance in inpatient triage (P = 0.007). The highest performance was observed in nurses with a history of 5 to 10 years. Also, nurses who performed in-hospital triage had significantly higher performance in in-hospital triage (P = 0.007) (Table 2). Spearman correlation coefficient also showed that there was a positive and direct correlation between nurses' knowledge and practice in inpatient triage (r = 0.44, P = 0.001). This result showed that with the increase in nurses' knowledge about in-hospital triage, their performance improves.

Discussion:

Nurses in the triage department can examine patients' complaints in a centralized and comprehensive manner (11).

Table 2. Knowledge and practice scores based on characteristics of participants

		Knowledge			Practice		
		Mean	SD	p	Mean	SD	P
ED setting	Peymanieh Hospital	7.94	2.32	0.7	1.36	7.13	0.15
	Motahari Hospital	7.79	1.57		1.6	7.54	
sex	male	7.75	2.16	0.71	1.34	7.16	0.22
	female	8	1.83		1.62	7.48	
Shift schedule	Morning	9	1.76	0.25	1.29	8.1	0.12
	Evening	7.4	1.34		1.52	6.6	
	Night	7.5	2.12		0.71	7.5	
	Variable	7.68	2.07		1.5	7.21	
Nursing Experience	Under 5 years	7.35	2.31	0.25	1.73	6.78	0.007
	5 to 10 years	8.71	1.77		1.17	8.23	
	10 to 15 years	7.81	1.8		1.15	7.63	
	More than 15 years	8	1.51		0.89	6.75	
ED Nursing Experience	One years	7.76	2.09	0.92	1.66	7.35	0.61
	Two years	8.13	1.85		1.16	7.27	
	Three years	8	1.87		0.84	7.2	
Triage Nursing Experience	yes	8.03	1.77	0.64	1.3	7.68	0.034
	no	7.67	2.27		1.59	6.85	
	none	6.67	1.15		1.53	6.33	
Familiarity with triage in the emergency room	Workshop	7.86	1.98	0.2	1.36	7.19	0.46
	the unit University	7.45	2.77		1.51	7.55	
	Partners	8.26	1.54		1.62	7.32	
	Other	6	1.41		1.41	8	

The accuracy of triage decisions can affect the achievements of the emergency department (12-13). Data showed that 53.47% of the responses to the data were 7.87 ± 1.99. Therefore, the level of knowledge of nurses is at average level. Malekshahi and Mohammadzadeh stated that nurses' knowledge about general knowledge about triage was moderate (14). In the study by Sedaghat et al. (2017) which was conducted with the aim of determining the level of knowledge and practice of emergency medical staff in the north of Khuzestan province about pre-hospital triage, the results showed that the level of knowledge of triage was moderate (15). In their study, Guranson et al. reported that nurses'

knowledge of triage was moderate (9). The results of the present study are consistent with the studies of Malekshahi, Aghababayan and Guranson. In their study, Tabatabai et al. examined the knowledge of nursing students about hospital triage in the emergency department. The results of this study showed that nurses' knowledge about hospital triage is poor (16). In their study, Mir Haghi et al. examined the level of knowledge of emergency department nurses about hospital triage. The results of this study showed that nurses were not well acquainted with the knowledge of hospital triage (4). In their study, Javadi et al. examined the knowledge and practice of emergency department nurses about in-hospital triage. The results of this study showed that the level of knowledge of nurses working in the emergency departments of the centers covered by Shahid Sadoughi University of Medical Sciences about triage is below average (10). In their study, Haghighi et al. examined the level of knowledge of nurses working in the emergency department of hospitals affiliated with Ahvaz University of Medical Sciences in 1394. The results of this study showed that the level of knowledge of emergency department nurses who are very involved in patient triage is unsatisfactory (17). In their study, Sedaghat et al. Examined the knowledge and practice of EMS emergency medical personnel in the north of Khuzestan province regarding pre-hospital triage. The results of this study showed that the level of knowledge of EMS emergency medical personnel in the north of Khuzestan province is poor (15). Hedayati et al. in their study examined the knowledge of final year students of Birjand University of Medical Sciences about hospital triage. The results of this study showed that the knowledge of Birjandi students is poor (18). The results of the above studies are not consistent with the present study. It seems that this study differs from the present studies in the study population as well as the tools used, which can cause inconsistencies in the findings. In their study, Javadi et al. examined the knowledge and practice of emergency department nurses regarding in-hospital triage. The results of this study showed that the performance of nurses working in the emergency departments of the centers under the auspices of Shahid Sadoughi University of Medical Sciences in terms of triage is below average (10). In their study, Sedaghat et al. Examined the knowledge and practice of EMS emergency medical personnel in the north of Khuzestan province regarding pre-hospital triage. The results of this study showed that the performance of EMS emergency medical staff in the north of Khuzestan province is poor (15). The results of the present study are not consistent with Javadi and honesty studies. In their study, Sharafat et al. Evaluated the knowledge and performance of hospital triage. The results of this study showed that the performance of nurses working in the emergency department of the above centers is above average (19). The results of the present study are consistent with the study of honor. It seems that this study differs from the present studies in the study population as well as the tools used, which can cause inconsistencies in the findings. 34.4% of them were familiar with triage through workshops, 18% through university courses, 37.7% from colleagues and the rest from other sources. The highest level of knowledge in the field of triage was related to educational workshops (10). In their study, Haghdoost et al. Examined the effect of triage training on the knowledge, attitude and practice of nurses working in the emergency department of Poursina Medical Center in Rasht. The results of this study showed that the most sources of information are work experience (20).

Conclusion:

The results of this study indicate that the level of knowledge and attitude of nurses working in the emergency departments of the centers covered by Jahrom University of Medical Sciences regarding triage is moderate. In this regard, holding triage

training courses for staff in order to provide high quality services is recommended.

Ethics approval and consent to participate:

The study was approved by the Institutional Review Board of Jahrom University of Medical Sciences.

Consent For Publication:

Not Applicable.

Availability of Data and Materials:

All data are available in the article. Persian format of the questionary would be available for researchers upon a request to corresponding author.

Competing interests:

None.

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Authors' contributions:

MC and SA designed the study. NZ, NE and FN surveyed participants. The manuscript was written by MC, FA and SA and revised by NE.

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