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Research Article

**SURVEY ON KNOWLEDGE AND PRACTICE OF
EMERGENCY NURSING STAFF IN AHVAZ HOSPITALS OF
NEW METHOD OF TRIAGE**Zahra Reisi¹, Bayan Saberipour¹, Mohammad Adineh^{2*}, Elham Abdolahi Shahvali³¹Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.²Nursing care Research Center in Chronic Diseases, Department of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.³Department of Nursing, Shoushtar Faculty of Medical Sciences, Shoushtar, Iran.**Abstract:**

Background and Purpose: Understanding the various methods of triage in different situations and locations is one of the most important needs of the training staff, especially nurses. The purpose of this study was to assess the knowledge and practice of nurses working in the emergency department.

Materials and Methods: This cross-sectional, descriptive-analytic study was carried out with the participation of 73 nurses working in the emergency department of Ahwaz University of Medical Sciences affiliated hospitals who were enrolled in the study in 2017. The data gathering tool includes a questionnaire for the Features of the individual characteristics and the knowledge and practice of emergency personnel from triage systems in Iran [$\alpha = 0.3$]. Data were analyzed using descriptive-inferential statistics in SPSS version 20.

Findings: Results showed that 87.7% [64 people] had poor knowledge, 12.3% [9 people] had moderate knowledge about different methods of triage, and 93.2% [68 people] had moderate performance and 6.8% [5 people] had poor performance to use different methods of triage. The mean total score of nurses' knowledge was 20.55 ± 8 and the mean score of nurses' performance was moderate [44.64 ± 8.82]. Statistical analysis showed a significant statistical relationship.

Conclusion: Considering the low level of knowledge and practice of nurses working, it is necessary to organize training courses for triage, to implement interventions and educational research in this field and equip the emergency ecological environment and staff performance from different systems of triage to improve and promote treatment services.

Keywords: triage, nurse, awareness, performance

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INTRODUCTION:

Several studies over the past few decades have shown that [according to studies] triage of affected patients has reduced mortality and improved utilization of resources [1]. The word triage originates from the Latin word trier, which means sorting, categorizing and prioritizing [2 and 3]. Triage reduces the waiting time for rapid diagnosis of critical situations and, on the other hand, saves the number of visits, costs, length of treatment, and workforce [4]. Increasing the waiting time and the length of time for medical services in the emergency department can reduce the quality of care and increase the adverse outcomes in patients with life-threatening conditions [5]; in other words, the main mission of each emergency department is to provide the "most suitable" care is possible in the "shortest" time [6]. Effective nursing management requires nurses' correct and timely intervention in the critical condition; hence, triage is an important tool for managing the role of nurses in critical situations [7].

The purpose of the triage in the hospital is to find the patients at risk as soon as possible and take the necessary treatment. Standard triage is required for a short period of time for each patient in the emergency room by a doctor or nurse practitioner [8].

The significance of triage is studied in two categories: One of the events of the triage, due to the large number of injured people and the limited services, need to be categorized correctly and allocate the best services for the largest number of injured people. And the other in normal conditions, due to limited hospital space, equipment, personnel and patients' increased ability to treat patients, and patients are expected to wait longer in the queue [3].

Eastes and Norton believe that triage facilitates patient care [9]. Hosseini *et al.* Quoted Frolity is writing: "The nature and existence of emergency care associated with nursing care" [10].

One of the important aspects of diagnostic information is the diagnosis of the type of action or the patient's triage; in addition to important aspects of diagnostic information and work experience, the ability of decision-making is also of particular importance [11]. Armastrowing describes several standard features of the standard triage, the most important of which are: Simplicity in execution when faced with chaos and disorder, the productivity of time, when moments are equal to life, predictable and credible trustworthiness [12]. On the other hand, enhancing the performance of emergency nurses is so important that the World Health Organization [WHO], in order to improve the performance and achievement of care standards, make effective use of existing nurses

and use more multi-skills staff where appropriate and ensure better matching between the skills and function of individuals [13]. One of the most important functions that emergency nurses need to be constantly upgraded is the triage process, which is the first step in addressing the emergency department and prioritizes these patients and distributes them based on the deterioration of clinical conditions at different levels of triage. Thereby minimizing the death and damage caused by delay in treatment [14]. An experienced triage nurse is able to quickly and accurately identify a small percentage of patients who need immediate care, then they should have a large number of remaining patients who do not need urgent care and can wait for medical evaluations to remain prioritized [15].

The results of Alizadeh *et al* study showed that training of triage as one of the factors influencing nurses' job satisfaction was introduced, therefore, training nurses in specialized fields especially triage is emphasized [16]. The results of Hosseini *et al.* Showed that the performance of emergency nurses in the implementation of triage was at the highest percentage rate, therefore, considering the importance of hospital triage, it seems necessary to instruct the theory and practice of triage at university and at work [17], in the same vein, the results of the study of honesty and colleagues also showed that the lack of knowledge and poor performance of medical emergency staff in pre-hospital triage conditions could be due to a lack of national guidelines in the country's emergency medical care, so efforts to resolve this problem are recommended [18].

Therefore, considering the importance and the position of the hospital triage in the orogenesis, and the importance of updating the knowledge and practice of the emergency medical team regarding triage, especially nurses who are responsible for the main hospital triage in Iran, and the lack of research in Ahvaz, this study was conducted to evaluate the knowledge and practice of nurses working in the emergency department of Ahvaz educational-teaching hospitals in 2017.

MATERIALS AND METHODS:

The present study is a cross-sectional analytical study, the research environment includes Golestan, Imam, Razi hospitals and the population of the study consisted of all nursing staff working in the emergency department, who entered the study census. After approving the design and obtaining the ethics code from the ethics committee of Ahvaz Jundishapur University of Medical Sciences, the researcher referred to the nursing office of the Ahvaz teaching hospitals, stating its design and objectives, with the permission of the authorities

and the metron of the hospital, a list of all personnel nursing received.

The research tool was a demographic questionnaire and a standard questionnaire to assess the knowledge and performance of emergency personnel from triage systems. Demographic information forms include age, sex, marital status, last degree, last year, employment status, shift status, and work experience. The questions of the triage form were used in two sections of knowledge and practice that were used by the researcher in the study by Haghdoost *et al.* [2010] [24]. Questionnaire assessing the knowledge level of the units included questions about triage and how to prioritize patients, the questionnaire includes 39 questions of 4 options and the units selected only one option. The correct answer is 1, and the wrong answer is zero. Therefore, in this questionnaire, the minimum score is zero and a maximum of 39, scores less than 3.33 as weak knowledge, between 3.3-6.66, as moderate knowledge and scores of 66.6- 100 as consciousness was well considered. The function of the units under study was also checked by using a checklist of observations and questioning the way the function was performed, this checklist contains 63 questions [how to do, CPR, how to assess patient pain, how to prioritize inpatients, etc.], Each of them has 3 options [does not do, does not do it, does not do it correctly], and the researcher is presenting in different shifts [morning, evening, night] in the research environment and according to the checklist one mark these options. It performs the correct option [score +1], does not do [zero score], and does the wrong [score -1], resulting in a total score of 63+ to -63. Scores of less than 3.33 as poor performance, scores ranging from 33.6 to 66.3 to 33.3 as average performance and scores ranging from 66.7 to 66.70 as good performance.

The only criterion for entering this study was having a nursing bachelor's degree by sample and the criteria for withdrawal of sample dissatisfaction to continue the study. This assurance has been given to those participating in the course that during their research and afterwards they will

preserve their information and scores, and the defects are explained only to individuals individually.

Since the triage questionnaire is a standard instrument and it is also used in Iran, it has an appropriate narrative [7].

Also, for determining the reliability, a questionnaire was filled out for 20 nurses working in the emergency department, and then completed a 14-day questionnaire for these individuals. The reliability of the checklist was confirmed by using the test-open-test method with a correlation coefficient of 0.91.

After collecting data and entering them into SPSS version 20, statistical analysis was performed using descriptive statistics to determine the nurses' performance score and nurses' knowledge and independent t-test and ANOVA test for the correlation at a meaningful level, $P < 0.05$ will be performed.

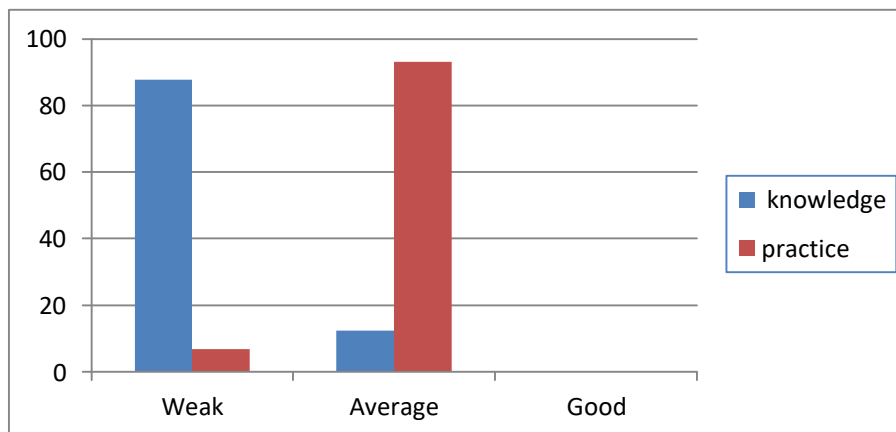
FINDINGS:

The results of the study showed that 73 nurses working in emergency wards participated in the study, 64.4% [47 women] and 35.6% [26 men] with a mean age $[30.37 \pm 3.83]$. Most of the nurses were married with 61% [45], with a 100% baccalaureate, as well as more nurses working in the shifting circle of 91% in emergency departments [Table 1]. The results of the questionnaire of knowledge and practice of emergency nurses questionnaire from the principles of triage showed that 87.7% [64 people] had poor knowledge and 12.3% [9 people] had moderate and 93.2% [68 people] had moderate and 6.8% [5 people] had poor performance [Figure 1]. The mean total score of nurses' knowledge was 20.55 ± 8 and the mean score of nurses' performance was moderate $[44.64 \pm 8.82]$. Statistical analysis of the marital status, employment status and the way of learning the principles of triage with nurses' level of knowledge and practice was statistically significant [$P < 0.05$] [Table 1]. Using Pearson correlation coefficient test, there was a direct and inverse relationship between nurses' knowledge and age [$P = 0.001$, $r = 375$], and performance and age of nurses [$P = 0.023$ $r = -266$], respectively.

Table 1: Demographic Information and its Relationship with Nurses' Knowledge and Practice of Triage Principles in Emergency Wards of Educational Hospitals of Ahvaz City in 2017.

Variable		Number	Percent	P Value	
				awareness	Performance
Sex	Female	47	64/4	*0.842	*0.049
	Male	26	35/6		
Marital status	Single	28	38/4	**0.001	**0.001
	Married	45	61/6		
Employment Status	Official	3	4/1	**0.011	**0.001
	Alliance	7	9/6		
	Contractual	50	68/5		
	plan	13	17/8		
Shift work	Morning work	4	5/5	*0/470	**0/654
	Afternoon work	00	00		
	night work	2	2/7		
	in circulation	67	91/8		
work experience	Emergency	51	69/9	**0/155	**0/601
	Emergency and ICU-CCU	14	19/2		
	Emergency and other sectors	7	9/6		
	Emergency and ICU-CCU and others	1	1/4		
Participate in similar research	No	69	94/5	*0/305	*0/473
	Yes	4	5/5		
How to learn the principles of triage	University courses	2	2/7	**0.001	**0.001
	Personal studies	13	17/8		
	Participate in workshops and seminars	35	47/9		
	Clinical work experience	23	31/5		

The results of the above table show that there is a statistically significant relationship between the knowledge and marital status, employment status and teaching methods of the principles of triage using the independent t-test* and ANOVA** [$P < 0.05$], as well as the performance score nurses and gender, marital status, employment status and education were found to be statistically significant with the principles of triage [$P < 0.05$].

**Chart 1: Accelerated Rate and Nurses' Performance in Emergency Departments of Triage Principles in 2017**

DISCUSSION:

The aim of this study was to determine the level of knowledge and practice of nurses in emergency wards of educational hospital of Ahwaz, The findings showed that more nurses had poor level of knowledge and moderate performance than triage principles. The results of the study by Haghdoost *et al.* [2010] indicated that the level of awareness of emergency nurses had a good level of functioning from the principles of triage before training [22.5%] at low levels and 72.5% at moderate level and 87.5% nurses [19], Also, the results of the study of Sincerity *et al.* [2012] showed that the average medical personnel's knowledge of triage was weak [5.69] and the mean of performance [5.78] out of a total score of 15 [20]. Similarly, Chen *et al.* [2010] showed that nurses had a poor knowledge of the principles of triage [21]. Perhaps this consistency is due to the lack of centralized planning of hospitals to improve the knowledge and practice of nurses and other treatment staff from the principles of triage. The results of the study showed that there was no significant difference between nurses' sex and knowledge, but at the level of performance, the female performance [46.15] was higher than that of men [41.92]. This difference was statistically significant. In this regard, the results of Javadi [1394] and Shahr-e-Mobidi [1393] showed that there was no statistically significant relationship between gender and the level of knowledge and practice of nurses from the principles of triage [22, 23] which was consistent with the results of the present study only in the field of knowledge.

The results of this study showed a significant relationship between age and level of knowledge and practice of nurses, so that with increasing age, nurses' knowledge level increased and age of nurses' performance increased with age, which, contrary to the results of studies, Layter Meybodi [2014] and Aghababaeian [2017], there was no statistically significant relationship between age and knowledge and practice of nurses [23 and 24]. Therefore, it seems that the increase in age in different groups, the number of units and the research environment will have different effects on the level of knowledge and performance. In terms of marital status, the mean scores of married individuals' awareness of single people and at the level of performance were more than those of married individuals, which is statistically significant, which is in line with the results of the study of right and friend [2010] and in contrast to the results of this study, in the study of Meybodi *et al.* [2014], there was no statistically significant difference between the mean scores of married and single individuals [28].

Also, there was a statistically significant correlation between the status of employment and the level of knowledge and practice of nurses in the present

study. The average level of awareness of contract nurses [22.78] and official [18] were more than covenant nurses [17.57] and design [15.31]. Accordingly, contrary to the results of this study, the study of Meybodi and colleagues between employment status and knowledge level of nurses did not show a meaningful relationship with the principles of triage, but in the level of performance of formal, covenant, and contracted nurses, they had a better performance than nurses. It seems that work experience and having a high clinical experience can affect the level of knowledge and performance of nurses.

In the present study, there is a significant relationship between the way of learning the principles of triage and the level of nurses' knowledge and performance. Nurses' awareness of the principles of triage in nurses attending theaters and seminars related to the principles of triage and having more clinical experience were higher than academic content and personal studies, and on the other hand, nurses who had more personalized studies and more clinical experience, its performance was better than the principles of triage. According to Javadi *et al.*, the results of the study showed that nurses had the highest level of knowledge about the triage principles in the workshops, but there was no significant relationship between knowledge of triage and knowledge and practice of nurses [23, 25]. It seems that having nurses experience and clinical experience in addition to participating in workshops improves the level of knowledge and practice of nurses from the principles of triage, it is better to have experienced people along with more periodic training in position Critical Emergencies. The limitations of this study were the lack of cooperation of all nursing staff, especially nurses in the postgraduate community.

CONCLUSION:

It seems that knowledge and practice of emergency nurses in educational hospitals affiliated to Jundishapur University of Medical Sciences in Ahvaz is based on the principles of triage, especially in the level of knowledge at a weak level. Therefore, by organizing training courses for the triage, the implementation of interventions and educational research in this field and equipping the emergency room to increase the staff's awareness and function in order to improve and promote the treatment services.

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