

KNOWLEDGE OF TRIAGE AMONG NURSES IN EMERGENCY UNITS

SARDAR ALI, BERNICE C. B. TAVERNER, MANSOOR GHANI, ZAHIDA KUSSOR AND SAMAR NAZ
Institute of Nursing, University of Health Sciences, Lahore

ABSTRACT

Introduction: The emergency department is one of the key and essential departments in a hospital. It is the preliminary point of contact with the hospital for any kind of patient who has a need for immediate interventions. The assurance of the best possible care in emergency situations depends on the implementation of a swift triage system and strapping knowledge of triage among nurses. A structured triage system in emergency units could have a radical impact to improve the quality care of patients in hospitals.

Research Methodology: A simple descriptive survey design was used to conduct this study. A sample of 100 nurses was selected from the emergency units of three local teaching hospitals by using the method of non-probability purposive sampling. Data was collected by a self administered questionnaire. The data was analyzed by SPSS version IBM – 20 and was represented in the form of figures, tables and percentages.

Results: It was sum that a large number of participants (69%) were having poor knowledge as they corrected less than 50% of the questions in the self administered questionnaires. The overall correct responses of the participants were 43.22%.

Conclusion: The current study findings of low level of triage knowledge among nurses reflect that there is a lack of proper training and edifying programs in Pakistan. Nursing curriculum for different nursing programs has not sufficient content of triage to prepare nurses for triage system in emergency units.

Key Words: Triage, Knowledge, Triage nurse, Emergency and Accident Nursing, Emergency Room.

INTRODUCTION

Triage knowledge among nurses is one of the key elements of supervision in emergency department, if it is not carried out at standard level; the outcomes of clinical care of patients and efficiency of emergency departments get compromised.¹

A process used to determine the severity of illness or injury and to prioritize patients according to the needs for medical care, irrespective of their order of influx or other factors including gender, age, and socioeconomic status is known as triage.²

There is a range of categories of triage that include ED triage (Emergency room), inpatient triage (ICU, Surgery, Outpatient etc), incidence triage (accidents, fire, air crashes etc), military triage (battlefield), disaster triage (mass casualty incidents, bomb blasts), and telephonic triage (over the phone, referral services).³

The number of patients presenting to emergency departments is intensifying, and this tendency is not likely to change. As emergency departments are struggling to cope with overcrowding there is a critical need for a valid, reliable triage acuity rating system in order to sort these incoming patients more rapidly and accurately.⁴ Pakistan is a country with limited resources and to make the matter worse the health

care spending is less than 1% of gross domestic product. Public sector hospitals are very small in number and are under staffed. Emergency departments in particular, are facing many challenges including increasing number of patients, resource scarcity, staff development, and communication and transport problems. Consequently, these problems make the emergency departments over crowded. This over multitude of emergency department can lead to decreased quality of care and increased costs on behalf of the patients. So there is a need for identifying the sick hospital patients who would require additional care to prevent worsening and irreversible organ failure and mortality.⁵

Frequent calamities around the world signify that any person and any nation can be affected at any time. The major calamities in the last two decades have affected at least 800 million people worldwide, causing deaths and economic suffering of over 50 billion dollars.⁶ The substantial calamity of earthquake of October 2005 in Pakistan left behind more than 80,000 dead and millions of injured victims. To face such kind of situations in future, it is essential to have trained triage nurses in hospitals to recover the affected people.⁷ Mortality rate can be reduced considerably by the implementation of triage in emer-

gency units. If a system for prioritization of care of the injured is not in place, many salvageable casualties may die unnecessarily.⁸ As, one of the most important components of hospitals; emergency units in hospitals throughout the globe have triage systems in place that work to categorize and prioritize the number and severity of casualties for effective care and interventions.⁹ To augment the triage skills and knowledge of nurses, continuing education and training courses related to triage and advanced management of medical emergencies are the key aspects in order to increase the quality care and patient safety.¹⁰

METHODOLOGY

A simple descriptive survey was carried out to assess the knowledge of triage among nurses in emergency units. A sample of 100 nurses was selected from the emergency units of the three teaching hospitals of Lahore, including Sheikh Zayed, Shalamar and Fatima Memorial Hospitals by using the method of non-probability purposive sampling. Data was collected by a self administered questionnaire. Multiple comparisons were made according to the specified variables. The questionnaire was developed concisely to assess the knowledge regarding triage in a more systematic and logical way.

A pilot study was carried out on a number of 10 participants that was 10% of the actual sample size. The internal consistency of 0.684 was calculated by applying Cronbach's α that depicted that the instrument was reliable and consistent for data compilation of the current survey as supported by some of the research literatures. The cronbach's α value of 0.60 is acceptable for the reliability of a scale.¹¹

Statistical Analysis

The data was entered and analyzed by SPSS version IBM – 20 and was represented in the form of figures, tables and percentages. Mean with standard deviation was calculated for continuous (Quantitative) and percentages and frequencies were computed for categorical variables. No comparison was made on participants' age to knowledge as it was branded as a continuous variable and was not grouped. One way ANOVA was used to compare the mean difference in obtained score among variable of qualification. Post hoc Tukey test was used for multiple comparisons. A

Table 1:

Level of Knowledge	Qualification	Mean Score	SD	Mean Percent Knowledge	SD	S. Error	P-value
	RN-G. Nursing	9.16	2.56	41.63%	11.67	.274	.003
	Post-RN-BScN	11.75	4.20	53.40%	19.09	1.485	
	Generic B.ScN	12.75	4.11	57.95%	18.69	2.056	
	M.ScN	N/A					
		9.51	2.91	43.22%	13.24	.291	

Table 2: Multiple Comparisons.

Level of Education	Level of Education	Mean Difference	Std. Error	P-value
RN	Post-RN BScN	-2.591	1.025	.035
	Four Year BScN	-3.591	1.420	.035
Post-RN BScN	RN	2.591	1.025	.035
	Four Year BScN	-1.000	1.701	.827
Four Year BScN	RN	3.591	1.420	.035
	Post-RN BScN	1.000	1.701	.827

P-value ≤ 0.05 was considered as statistically significant.

RESULTS

The minimum age of participants 21 years and maximum 62 years were observed in the data with mean of 27.55 ± 6.311 SD years. The mean score knowledge was calculated as 9.51 ± 2.91 (SD) after statistical analysis. The minimum score was 4 and the maximum was 18 out of the total 22 questions. After applying one way ANOVA it was examined that there was a significant difference in the mean score knowledge based on the level of qualification of nurses. The mean score knowledge calculated for RN, Post RN BScN and Generic BScN was 9.16 ± 2.56 (SD), $11.75 + 4.20$ (SD) and $12.75 + 4.11$ (SD) with percentages of $41.63 + 11.67$ (SD), $53.40 + 19.09$ (SD) and $57.95 + 18.69$ (SD) respectively with p-value of .003 as stated in (Table 1). The overall correct responses of the participants were 43.22%.

It was investigated that 1 out of 100 participants was having excellent knowledge as the participant correctly responded more than 80% questions, 3 participants were having good knowledge as they correctly responded more than 70% of the questions, 27% were having average knowledge as they correctly responded 50 – 70% of the questions and a large number of participants 69% were having poor knowledge as they correctly responded less than 50% of

the questions in the self administered questionnaires.

DISCUSSION

A high number of the nurses attained a poor score on the triage knowledge based questionnaire according to the data analysis. Sixty nine percent nurses were found with poor knowledge of triage according to their scores. This answered the first research question that nurses do not have sufficient knowledge about triage in Pakistan. The overall correct response to the questionnaire was 43.22%.

According to the responses analysis majority of the study participants perceived themselves as inadequately prepared for triage. It was found that 78% participants were strongly agreed to include triage training for nurses. Twenty two percent nurses agreed according to use the Likert scale and no one disagree or strongly disagree for the training of triage for nurses. This again justified the assumption that nurses needs triage training and competency to run the emergency units effectively. Triage training is the vital weapon of nurses to defeat the patients problems in emergencies.

On the basis of comparison in sight to professional qualification a significant difference was seen in the knowledge score among nurses. Generic BSc Nurses were observed better than the Diploma and Post RN BSc nurses. This difference in knowledge may be a probable indication of the difference in their professional qualification. As supported by Chan (2009) who propounded that the nurses whose qualification was the diploma level executed lower level of awareness and dexterity than baccalaureate, master or doctoral students in clinical administration systems.¹²

The same results were found in some earlier studies which support these findings. A study presented by Marahaghi and Roudbari (2011) reported the nurses had not enough knowledge about the hospital triage; 39.94% of the responses to the knowledge level questions were correct in their study. They concluded their study that nurses are not equipped with the knowledge of triage in the hospitals in Iran.¹³

Another study conducted by Abbasi et al in 2004 verified and supports the findings of the current study as they found that the knowledge level of the staff for triage and nuclear treatment was 39.7%.

In disparity another study conducted by Fathoni et al (2010) showed a little high score of knowledge about triage among nurses in Indonesia as compared to the present study. They reported that more than half of their study subjects (58%) had low triage knowledge scores. Based on the referenced criterion, the

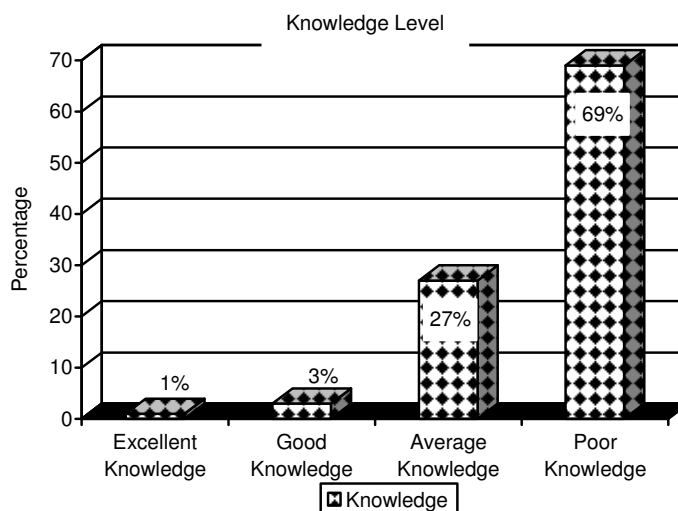


Fig. 1: Knowledge Assessment.

Mean Knowledge Score:	43.22% ± 13.24
Minimum Knowledge Score:	04 out of 22
Maximum Knowledge Score:	18 out of 22
Excellent Knowledge:	Greater than 80%
Good Knowledge:	65 – 80%
Average Knowledge:	60 – 65%
Poor Knowledge:	Less than 50%

percentages were interpreted as follows: < 60% = low level of triage skill, 60 – 80% = moderate level of triage skill, and > 80% = high level of triage skill. They concluded that the participants required continuing education and training courses related to triage to improve their knowledge and skill in order to increase patient safety.¹⁰

The current study findings of low and poor level of triage knowledge among nurses reflect and justify the second assumption that there is a lack of proper training and edifying programs in Pakistan. Nursing curriculum for different nursing programs has not sufficient content of triage process to prepare nurses for this system in emergency units.

It is **concluded** that on the basis of the results obtained, the knowledge of triage among nurses is inadequate in Pakistan. There are learning requirements of nurses working in emergency departments which need to be satisfied by providing proper training and education. Sufficient content regarding triage needs to be integrated in the nursing curricula in Pakistan to tackle this problem.

The findings of the study recommend the implementation of triage system in the emergency units to have a proper and effective prioritization of patients that in turn will lessen the financial burden and the overcrowding problems in emergency departments. Effective triage is essential for patient safety. By correctly identifying presenting patient conditions and initiating necessary and appropriate interventions in

a timely manner, triage nurses serve as the eyes and ears of the acute care system.

ACKNOWLEDGEMENT

The authors are thankful to the administration of UHS, Sheikh Zayed Hospital, Shalamar Hospital and F. M. Hospital Lahore for facilitating to conduct this survey in these hospitals.

REFERENCES

1. Kelly A.M., Richardson D. Training for the role of triage in Australasia. *Emerg Med (Fremantle)* 2001; 13: 230-2.
2. Qureshi N.A. Triage systems: a review of literature with reference of Saudi Arabia *E.M.H.J.* 2010; 16 (6): 690-8.
3. Iserson KV, Moskop JC. Triage in medicine part I: concept, history, and types. *Ann Emerg Med.* 2007; 49 (3): 275-281.
4. Gilboy, Tanabe, P., Travers, D.A., Rosenau, A.M. and Eitel, D.R. *E.S. Index Emergency Severity Index, Version 4: Implementation Handbook.* A.H.R.Q Publication No. 05 – 00462. Rockville, MD: Agency for Healthcare Research and Quality 2005.
5. Asad, U.I., Naheed, H., Fuad, S., Mahmood, N.M., Azmat K. Early Warning Scoring System and in – hospital Mortality. *Pakistan Journal of Medical and Health Sciences*, 2009; 3 (2): [Accessed on 9th Jan, 2011]. Retrieved from: <http://pjmhsonline.com/early_warning_scoring_system_and.htm>
6. Campbell, M.J., Grenade, J.L., Nevins, D.H., Binns, A.M. Hurricane Preparedness among Health Care Workers in St James. *West Indian Med. J.* 56 (4): P. 346-50.
7. Hussain, S., Naureen, H., Anjum Z.M., Inayat R.K. Disaster victim Identification – Are we prepared? *P.A.F.M.J.* 2006; (4): ISSN – 0030 – 9648.
8. Safdar, C.A. War Casualties: Recent Trends in Evacuation Triage and the “Golden Hour, *Pakistan Armed Forces Medical Journal.* Issue Number: 1, Issue Month: March 2010.
9. Gottschalk, S. Triage – A South African Perspective. *C.M.E.* 2004; 22 (6): 325.
10. Fathoni, M., Sangchan, H., Songwathana, P. Triage Knowledge and Skills among Emergency Nurses in East Java Province, Indonesia. *Australasian Emergency Nursing Journal*, 2010; 13 (4): P. 153.
11. Hair, J.F., Black, W.C., Babin B.J. and Anderson, R.E. *Multivariate Data Analysis Seventh Edition.* Prentice Hall, Upper Saddle River, New Jersey 2010.
12. Chan M.F. Factors affecting knowledge, attitudes, and skills levels for nursing staff toward the clinical management system in Hong Kong. *Comput Inform Nurs* 2009; 27 (1): 57-65.
13. Mirhaghi, A.H., Roudbari, M.A. Survey on Knowledge Level of the Nurses about Hospital Triage. *I.J.C.C.N.* 2011; 3 (4): 167-174.