IJNH

Research Article

Effect of Triage Algorithm on Knowledge and Practices Among Nurses in a Teaching Hospital

Kavitha Reddimalla[1], R. Ponchitra[2], J. Ferganzia[2]

[1]Department of Nursing, MGM New Bombay Hospital Vashi, Navi Mumbai, Maharashtra, India, [2]Department of Nursing, MGM New Bombay College of Nursing, MGM Institute of Health Sciences, Mumbai, Maharashtra, India

Abstract

Introduction: Triage system in emergency department helps the healthcare workers to make accurate decisions at the right time. In casualty identifying and providing care in a short duration on an urgent basis without consuming time is a priority. Triaging helps in recognizing the severity of illness of the patient. Efficient triage system helps to save the patient in an emergency at the right time. Health professionals can work efficiently if the organization has an established triaging system. The study aims to assess the knowledge and practice on triage management among nurses before and after introducing the triage algorithm.

Materials and Methods: Quasi-experimental one group pre-test post-test design was adopted. Data were collected from 60 staff nurses using structured questionnaires on triage management and an observation-based checklist for triage simulation for nurses by the non-probability convenience sampling technique.

Results: There is a statistically significant difference between the mean score of knowledge in pre-test score and post-test score at 5% level of significance as $P < 0.05$. There is a statistically significant difference between the mean score of practice in pre-test score and post-test score at 5% level of Significance as $P < 0.05$ highly significant at 0.01% level, that is, $P < 0.001$.

Conclusion: In the present study, it is found that the triage algorithm is strongly associated with the outcome of the nurses by recognizing the priority of the patient. It is found that triage algorithm flow chart is helpful to recognize according to the color code in a mass casualty situation.

Keywords: Knowledge and practices, nursing, triage algorithm

Introduction

In the daily routine of the emergency department, triage is to sort patients into groups, based on the condition of their health problems and the immediately with these problems must be treated. In certain situations, such as accident either typical motor vehicle accident, collapse of building, and floods, where the health care professionals have to provide care for two or more patients at a time. This is where the concept of triage will be useful.[1]

In casualty identifying and providing care in a short duration on an urgent basis without consuming time is priority. Triaging helps in recognizing the severity of illness of the patient. Efficient Triage system helps to save the patient in an emergency at the right time. Health professionals can work efficiently if the organization has an established triaging system.[2]

A study was conducted in 2018 on "emergency nursing" and "triage accuracy." The study says that the triage accuracy can represent the quality of emergency service. The result of

Date of Submission: 20-01-2025
Date of Revision: 07-02-2025
Date of Acceptance: 18-02-2025

Access this article online
Website: https://innovationaljournals.com/index.php/ijnh
ISSN No: 2454-4906
DOI: 10.31690/ijnh.2025.v011i01.001

Address for Correspondence:
Dr. R. Ponchitra, Department of Nursing, MGM New Bombay College of Nursing, MGM Institute of Health Sciences, Mumbai, Maharashtra, India.
E-mail: ponchitra1976@gmail.com

triage accuracy from studies was moderate level. The study also revealed that regular training on triage and continuous monitoring of healthcare professionals in the emergency department is necessary to strengthen the use of triage system.[3]

Triage is an important place in the emergency department. The triage is a place where first aid measures are done with help of health team members in the triage. In medical field mainly in emergency department is improving vastly. Due to not rapidly identify patients with urgency, life-threatening conditions, lack of assess, and determine severity and acuity of the presenting problem.[3]

The knowledge education of triage nurses increased inter rater agreement is increased from 54.8% to 86.4% after the primary triage educational decision program. Triage decisions unaffected by triage nurse experience. No correlation found between triage accuracy and emergency triage experience.[3]

Research was conducted among triage nurses to know the relationship between triage decision and the practice of triaging. The conclusion of the study shows that triage educational programs are needed to improve better understanding between take decisions and implement.[4]

Nurses frequently examine patient's priority according to the urgency of the health condition to evaluate and provide the treatment.[5] The current study aimed to assess the knowledge and practice on triage management among nurses before and after introducing triage algorithm.

Materials and Methods

The research design adopted for this study is quasi-experimental one group pre-test post-test research among all nursing staff. The present study was conducted at a tertiary care teaching hospital. The sample was 60 nursing staff working in various department of the hospital. The sampling technique used is non-probability convenience sampling technique is used for the study.

The data collection techniques include knowledge questionnaires on Triage management and observational-based checklist for Triage simulation for nurses. Observation triage algorithm flow chart is used for prioritization of the patient's according to the condition of the health.

Content validity and reliability of the tool were established. Ethical approval is obtained from Ethical Committee. Permission was obtained from the administrator of the selected hospital for data collection. Moreover, informed consent was taken from the nurses.

Results

The findings of the demographic variables of the nurses depicted that the majority of nurses were between the age group of 20–24 years, 95% of nurses were females, 71.7% of nurses were diploma-qualified and 23.3% of nurse's were graduates. Majority 97% are junior staff nurses and 3% were senior staff nurses, 55% were having experience between 1 month and 12 months and 15% had 48 months and above working experience.

Table 1: Distribution of overall knowledge on triage management among staff nurses before and after introducing triage algorithm $n=60$

Category	Before introducing triage algorithm (Pre)		After introducing triage algorithm (Post)	
	f	%	*f*	%
Very good	0	0	7	11.67
Good	15	25	41	68.33
Average	36	60	9	15
Poor	9	15	3	5

In the pre-test, none of the nurses had very good knowledge which increased in post-test to 11.67% and 25% of the nurses had good knowledge in pre-test which increased to 68.33% in post-test. In the pre-test, 15% of the nurses had poor knowledge which decreased to 5% in post-test [Table 1].

Table 2 shows that item-wise knowledge scores before and after the introduction of the triage algorithm and the increase in the post-test scores.

There was a statistically significant difference between the mean score of knowledge in pre-test score and post-test score at 5% level of significance as $P < 0.05$ [Table 3].

In the pre-test, none of the nurses had a very good score on self-reported practice, which increased to 18.33% post-test, and in pre-test, 33.33% of the nurses had poor score on self-reported practice, which decreased to 3.33% in post-test [Table 4].

There was a statistically significant difference between the mean score of practice in pre-test score and post-test score at 5% level of significance as $P < 0.05$ highly significant at 0.01% level, that is, $P < 0.001$ [Table 5].

Discussion

In the present study, it is found that the triage algorithm is strongly associated with the outcome of the nurses by recognizing the priority of the patient. It is found that triage algorithm flow chart is helpful to recognize according to the color code in mass casualty situation. A similar study conducted in three teaching hospitals on nurses in emergency units depicted that 65% of the participants had poor knowledge in emergency management. Proper training regarding triage needs to be implemented.[6] Another study conducted on effect of mass causality training showed that there was significantly higher knowledge immediately after training programmed.[7] Improved awareness and consciousness about emergency among nurses can be life-saving, the education of health staff is particularly important in regions where disasters and mass casualties are experienced severely and intensely. Thus, health

Table 2: Distribution of items wise knowledge score of nurses on triage management before and after introducing triage algorithm *n*=60

Questionnaire	Before introduction of triage algorithm (Pre)		After introduction of triage algorithm (Post)	
	f	%	*f*	%
Meaning of triage	43	71.7	56	93.3
Principle of triage	14	23.3	47	78.3
Priorities in triage	20	33.3	47	78.3
Colors used in triage	28	46.7	50	83.3
Tag for a victim fails to follow a simple command	29	48.3	49	81.7
Tag to be applied to a deceased person	8	13.3	25	41.7
Tag to be applied to an injured walking patient	23	38.3	33	55.0
Tag to be applied to a person with second priority?	17	28.3	16	26.7
Tag to be applied to a patient who requires the most urgent care	45	75.0	49	81.7
Tag to be applied to a person with potentially life-threatening injuries	10	16.7	18	30.0
Meaning of SALT in triage	19	31.7	33	55.0
Blanch test is done to assess	13	21.7	50	83.3
SAVE triage mean	4	6.7	27	45.0
Voice triage is conducted	21	35.0	22	36.7
The pitfalls of triage	37	61.7	51	85.0
Triage management team	30	50.0	27	45.0
Main function of a triage nurse	26	43.3	29	48.3
Role of a triage nurse	41	68.3	50	83.3
The ultimate goal of triaging	26	43.3	28	46.7

Table 3: Comparison of knowledge scores on triage management before and after introduction of triage algorithm *n*=60

Knowledge scores	Mean	SD	Median	Wilcoxon signed-rank test	*P*-value	Significant at 5% level
Before introduction of triage algorithm (Pre)	8.23	2.63	8	5.621**	<0.001	S
After introduction of triage algorithm (Post)	12.60	3.29	13.5			

s: significant

Table 4: Self-reported practice scores of nurses on triage management before and after introducing triage algorithm *n*=60

	Before introduction of triage algorithm (Pre)		After introduction of triage algorithm (Post)	
Category	*f*	%	*f*	%
Very good	0	0	11	18.33
Good	12	20	31	51.67
Average	28	46.67	16	26.67
Poor	20	33.33	2	3.33

Table 5: Comparison of self-reported practice scores of nurses on case scenarios on triage management before and after introducing triage algorithm *n*=60

Test	Mean	SD	Median	Wilcoxon signed-rank test	*P*-value	Significant at 5% level
Before introduction of triage algorithm (Pre)	3.43	2.02	3	6.083**	<0.001	Yes
After introduction of triage algorithm (Post)	6.60	2.08	7			

staff who are active and professional in their fields can prevent many mistakes and incorrect healthcare practices. It would be effective for teaching nurses, who have full knowledge of the field, are aware of their tasks and responsibilities, and who can properly display their professional proficiencies, to organize in-service training programs for healthcare staff.

Conclusion

Necessary administrative support should be provided for the training of nurses on a regular basis on emergency management. It can be part in their induction training. A policy can be made that all nurses working in the emergency department must be advanced trauma life support certified. Researches can be conducted on various aspects related to nurses' roles and responsibilities working in the emergency department, causality, etc.

Acknowledgment

I acknowledge the nurses who participated in the study and the hospital administration for the support to conduct the study.

Funding

No fund.

Conflicts of Interest

There is no conflicts of interest.

References

1. Clement I. Textbook on First Aid and Emergency Nursing. New Delhi: Jaypee Brothers Publishers; 2013.
2. Tam HL, Chung SF, Lou CK. A review of triage accuracy and future direction. BMC Emerg Med 2018;18:58.
3. Gerdtz MF, Bucknall TK. Why we do the things we do: Applying clinical decision-making frameworks to triage practice. Accid Emerg Nurs 1999;7:50-7.
4. Considine J, Botti M, Thomas S. Do knowledge and experience have specific roles in triage decision-making? Acad Emerg Med 2007;14:722-6.
5. Arslanian-Engoren C. Explicating nurses' cardiac triage decisions. J Cardiovasc Nurs 2009;24:50-7.
6. Ali SA, Taverner BC, Ghani M, Kussor Z, Naz S. Knowledge of triage among nurses in emergency units. Biomedica 2013;29:240-3.
7. Alharbi AA. Effect of mass casualty training on prehospital care providers in Kuwait. Emerg Med Open Access 2018;8:1000368.

How to cite this article: Reddimalla K, Ponchitra R, Ferganzia J. Effect of Triage Algorithm on Knowledge and Practices Among Nurses in a Teaching Hospital. Innov J Nurs Healthc. 2025;11(1):1-4.