



Full Length Research Article

KNOWLEDGE OF STAFF NURSES REGARDING TRIAGE SYSTEM

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ABSTRACT

Introduction: Triage is the process of rapidly screening sick patients when they first arrive in the hospital and of placing them in one of the groups like those with emergency signs (who require immediate treatment), those with priority signs (who should be given priority while waiting in the queue, so that they can be assessed and treated without delay) and those with non-urgent signs (who have neither emergency nor priority signs).

Methodology: In this experimental study, 50 staff nurses were selected as the samples for the study by using non-probability convenience sampling. The data was collected by using structured knowledge questionnaire on triage. Reliability of the structured knowledge questionnaire on triage was determined by using inter rater reliability test and it was 0.86. Data analysis were performed by descriptive statistics and inferential statistics. SPSS-17 software was used and *P* values less than 0.05 were considered significant.

Result: In the pre test, majority of the staff had inadequate knowledge regarding triage system (100%) and in the post test, majority of the staff had moderate knowledge regarding triage system (60%). Over all 60% of the samples had adequate knowledge in the post test.

Discussion: The result shows that there was improvement in knowledge regarding triage system after implementation of structured teaching programme on triage which was calculated at 0.05 level of significance. So, it is concluded that the structured teaching programme on triage was effective to improve the knowledge of staff nurses.

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INTRODUCTION

The death rate would be reduced with better organized systems of trauma care (Fitzgerald *et al.*, 2000). Clinical educators and experienced emergency nurse mentors are encouraged to recognize the skill acquisition in triage decision making requires practice before registered nurses can engage fully in the process of triaging patients in the emergency departments (Death at Daybreak, 2010). A qualitative study was conducted in Australia among 21 hospitals (13 district and 8 teaching hospitals) to assess the initial triage emergency and inpatient care, staff knowledge and practices and hospital support services by using structured survey instrument method. Study findings revealed that 14 out of 21 hospitals lacked an adequate system for triage. Initial patient assessment was often inadequate and treatment delayed. Most emergency treatment areas are poorly organized and lacked essential supplies. Most doctors in district hospitals and nurses, medical assistants in teaching and district hospitals had inadequate knowledge.

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Study interpreted that the possible targets for improvement include initial triage, emergency care, assessment, inpatient treatment and monitoring (Nolan *et al.*, 2001). A prospective study was conducted among medics, nurses, dentists and physicians to determine which military medical providers are most knowledgeable in mass casualty triage. Scores were tabulated according to two grading scales. Median scores between group were tested pairwise using the Kruskal Wallis one-way analysis of variance with $P < \text{or} = 0.05$. Study findings revealed that among subject groups tested, physicians were best at mass casualty triage. Dentists, nurses, and medics scored progressively less well on examination (Janousek *et al.*, 1999). A survey of 128 physicians, nurses and emergency medical technicians involved in trauma care was conducted to assess their knowledge base and how it affected their decision making in response to mass-casualty incident (MCI) following a terrorist bombing. Three quarters of the study group responded that = or >20% of the surviving victims were critically injured. Only half of the responders indicated that the main objective of medical management is identifying and treating patients with critical injuries. About 40% of responders indicated that they would not triage a critically injured victim to immediate care.

Table 1. Frequency and percentage Distribution of Demographic variables among staff nurse in SMCH

(n=20)		
Demographic variables	No	%
1. Gender		
a) Male	5	25%
b) Female	15	75%
2. Qualification		
a) GNM	9	45%
b) BSc (Nursing)	11	55%
3. Experience		
a) <1 year	9	45%
b) 1-2 years	8	40%
c) More than 2 years	3	15%
4. Area of specialization		
a) Critical care areas	5	25%
b) Wards	10	50%
c) OPD	5	25%
d) Operation room	-	-
5. previous experience of triaging		
a) yes	4	20%
b) No	16	80%

Table 2. Frequency and percentage distribution of Level of Knowledge on triage system among staff nurses in SMCH in Pre Test and post test

(n=20)				
Level of knowledge	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	20	100%	0	0%
Moderate	0	-	12	60%
Adequate	0	-	8	40%

Table 3. Effectiveness of computer assisted teaching on level of Knowledge on triage system among staff nurses in SMCH

(n=20)					
Knowledge Aspects	Pre test		Post test		Paired t test and P value
	Mean	S.D	Mean	S.D.	
Triaging	50.55	18.90	86.11	17.67	t = 16.075, P = 0.0001

Note: p < 0.001 Level of significance

Table 4. Association between Post Test Knowledge on Level of Knowledge on triage system among staff nurses in SMCH

(n=20)					
Demographic variables	Moderate Knowledge		Adequate Knowledge		Chi square test and P value
	No	%	No	%	
1. Gender					
a) Male					$\chi^2 = 0.865$, d.f. = 1 P=0.352 (N.S)
b) Female	1	50%	1	50%	
2. Qualification					
a) GNM	4	44.44%	5	55.55%	$\chi^2 = 0.219$, d.f. = 1 P=0.640 (N.S)
b) BSc (Nursing)	7	63.63%	4	36.36%	
3. Experience					
a) <1 year	5	55.55%	4	44.44%	$\chi^2 = 0.408$, d.f. = 2 P=0.816 (N.S)
b) 1-2 years	3	37.5%	5	62.5%	
c) More than 2 years	2	66.66%	1	33.33%	
4. Area of specialization					
a) Critical care areas	2	40%	3	60%	$\chi^2 = 4.528$, d.f. = 4 P=0.339 (N.S)
b) Wards	7	70%	3	30%	
c) OPD	4	80%	1	20%	
d) Operation room	0	0%	0	0%	
5. previous experience of triaging					
a) yes	1	25%	3	75%	$\chi^2 = 10.259$, d.f. = 2 P=0.006 **
b) No	5	31.25%	11	68.75%	

Note: p < 0.001 Level of significance

This survey indicates that further education in the principles of MCI management should be based on critical evaluation of the literature (Ashkenazi *et al.*, 2009).

MATERIALS AND METHODS

The methodology of research indicates the general pattern for organizing the procedure for gathering valid and reliable data for an investigation. In this present study a "Quantitative research approach" was used. The research design selected for this study was "pre-experimental one group pretest - posttest design". Structured teaching programme on triage was independent variable, knowledge of staff regarding triage was dependent variable and gender, qualification, experience, area of specialization and previous experience of triaging were demographic variables. The present study was conducted at Saveetha Medical College and Hospital, Thandalam, Chennai. And the accessible population was staff nurses working in different wards of Saveetha Medical College and Hospital, Thandalam, Chennai. Non- Probability Convenient Sampling technique was used to select the sample of 50 staff nurses. Staff nurses who were working in Saveetha Medical College and Hospital, available during the study, willing to participate in the study and were Graduated nurses were included in study and staff nurses who were trained in triage system were excluded from study. Structured knowledge questionnaire on triage was used to assess the knowledge of staff nurses regarding triage. Content validity of the tool was made and necessary modifications were made according to the expert's opinion and tool was finalized. The inter-rater reliability was done for structured knowledge questionnaire on triage with researcher assistance. Inter rater reliability was found to be 0.86.

Ethical approval to conduct the study was obtained from Saveetha Medical College and Hospital, Chennai and as well as from medical superintendent and nursing superintendent of Saveetha Medical College and Hospital, Chennai. Written informed consent was obtained from the study subjects regarding their willingness to participate in the research project. Demographic variables were collected by using interview technique and Privacy was provided. Ethical principles were adhered too throughout the study. After selecting the sample, researcher introduced himself and explained the purpose of the study to the staff nurses. For experimental group in the pre test, demographic variable and structured questionnaire was collected. After that teaching on triage system was taught to the staff nurses. After teaching, the post test level of knowledge was assessed. According to the objectives the data was organized, tabulated. The data was analyzed by using both descriptive and inferential statistics i.e. Frequency, Percentage, Mean and Standard deviation, Paired "t" test and Chi - square test

RESULTS

Demographic variables description: Demographic variables were gender, qualification, experience, area of specialization and previous experience of triaging. Table 1 shows the frequency and percentage distribution of selected demographic variables reveal that 75% were women. In the study 55% of them were BSC nurses. Most of them are below one year of experience and among the samples, most of them are from wards (50%) with no previous experience of triaging (80%).

Table 2 shows frequency distribution of Level of Knowledge on triage system in pre test and post test. In the pre test, majority of the staff had inadequate knowledge regarding triage system (100%) and in the post test, majority of the staff had moderate knowledge regarding triage system (60%). Over all 60% of the samples had adequate knowledge in the post test. Table 3 reveals the effectiveness of computer assisted teaching on level of Knowledge on triage system among staff nurses. The overall Improvement of Knowledge mean was 86.11 with standard deviation of 17.67. It indicated that computer assisted teaching was effective to improve knowledge on triage system among staff nurses was statistically at $P < 0.001$, the paired t test value of 16.075. Table 4 reveals that the association between the selected demographic variable with the post test level of knowledge regarding triage system after computer assisted teaching that there is a significant association with previous experience of triaging ($P=0.006$). There is no significant association with other demographic variables.

DISCUSSION

The present study reveals that frequency distribution of Level of Knowledge on triage system in pre test and post test. In the pre test, majority of the staff had inadequate knowledge regarding triage system (100%) and in the post test, majority of the staff had moderate knowledge regarding triage system (60%). Over all 60% of the samples had adequate knowledge in the post test. The finding of the study was supported by Roy Alison (2011). A prospective study was conducted among 110 nurses, to determine the knowledge of nurses in mass casualty triage. Scores were tabulated according to grading scales. Study findings revealed that among subject groups tested, the nurses scored progressively less well on examination. In this present study the results shows that the nurses in SMCH also lack knowledge on triage system. The data reveals that the effectiveness of teaching on level of Knowledge on triage system among staff nurses. The overall Improvement of Knowledge mean was 86.11 with standard deviation of 17.67. It indicated that teaching was effective to improve knowledge on triage system among staff nurses was statistically at $P < 0.001$, the paired t test value of 16.075.

The finding of the study was supported by lui Earnest (2011). He did a study among nurses of military hospital and found that the nurses lack knowledge and skill in casualty triaging. He organized an induction training for nurses in triaging. The post test was conducted after one week. The result showed that the nurses have improvement in knowledge and skill in triaging. In the present study the researchers conducted a structured teaching programme for the nurses and the result showed that there is improvement in the knowledge of nurses in triage system after conducting structure teaching programme on triage. The findings shows that the association between the selected demographic variable with the post test level of knowledge regarding triage system after structured teaching programme that there is a significant association with previous experience of triaging ($P=0.006$). There is no significant association with other demographic variables.

Conclusion

The following conclusions were drawn from the study i.e. the structured Teaching Programme was an effective strategy in improving the knowledge of staff nurses regarding triage.

REFERENCES

- Andersson, A.K., Omberg, Svedlund M. 2006. Triage in the emergency department-a qualitative study of the factors which nurses consider when decision making. *NurCrit Care*. may-jun: 11(3):136-45.
- Ashkenazi, I., Olsha, O., Schechter, W.P., Kessel, B., Khashan, T., Alfici, R. 2009. Inadequate mass-casualty knowledge base adversely affects treatment decisions by trauma care providers: Survey on hospital response following a terrorist bombing. *Prehosp Disaster Med*. Jul-Aug; 24(4): 342-7.
- Cioffi, J. 1999. Triage decision making: educational strategies. *Accid Emerg Nurs*. Apr; 7(2): 106-11.
- Death at Daybreak. *Times of India-Sunday Times* 2010.23 May.p-1-2; columns 1 & 5.
- Fitzgerald, M., Dewan, Y., O'Reilly, G., Mathew, J. 2000. *Indian J surg*, vol:68, No:4, July-Aug.226-32.
- Gertz, M.F., Bucknall, T.K. 2001. Triage nurses' clinical decision making. An observational study of urgency Assessment, *J AdvNurs*. Aug; 35(4): 550-61.
- Goransson, K.E., Ehnfors, M., Fonteyn, M.E., Ehrenberg, A. 2008. Thinking strategies used by registered nurses during emergency department triage. *J Advnurs*, Jan; 61(2): 163-72.
- Goransson, K.E., Ehrenberg, A., Ehnfors, M. 2005. Triage in emergency department: national survey. *J clinNurs.*, Oct; 14(9): 1067-74.
- Goransson, K.E., Ehrenberg, A., Marklund, B., Ehnfors, M. 2006. Emergency department triage: is there a link between nurses' personnel characteristics and accuracy in triage decisions? *Accid Emerg Nurs.*, Apr;14(2):83-8.
- Janousek, J.T., Jackson, D.E., De Lorenzo, R.A., Coppola, M. 1999. Mass casualty triage knowledge of military medical personnel. *Mil Med* May; 164(5): 322-5.
- Nolan, T., Angos, P., Cunha, A.J., Muhe, L., Quazi, S., Simoes, E.A. *et al.* 2001. Quality of hospital care for seriously ill children in less-developed countries. *Lancet*. Jan 13; 357(9250):106-10.
