Knowledge Regarding Triage System among Nursing Staff Working In Selected Hospital Of Sikkim.

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Abstract: *The triage system is a simple yet carefully structured process in which patients are categorized according to the severity of their presenting condition. This system aims to maximize benefits by prioritizing patients with urgent cases from non-urgent cases. In the current emergency care and environment, with increasing patient volume and acuity, it is more important than ever to ensure that nurses performing the vital triage function have the appropriate competencies. Nursing competence refers to a demonstrated ability to integrate knowledge, skills, abilities, and judgment based on scientific knowledge and expectations for nursing practice. Hence the investigators conducted the study to find out knowledge regarding triage system among nursing staff working in selected hospital of Sikkim. The primary purpose of this study was to assess the knowledge regarding triage system among nursing staff working in selected hospital of Sikkim. A non-experimental descriptive survey design was adopted. The area for the study was selected by using purposive sampling technique and a total of 100 samples were selected by using non-probability convenient sampling technique. A structured knowledge questionnaire regarding triage system was developed. The demographic findings showed that majority 93(93%) of the sample belong to age group of 20-30 years, 95(95%) of the sample were females, 50(50%) of the sample have an educational qualification of GNM, 84(84%) of the samples have a work experience of 1-5 years, 74(74%) of the sample have no previous exposure to workshop or CNE. The major findings related to knowledge among nursing staff showed that 63% of the assessed sample had an average knowledge regarding triage system, 33% of the assessed sample had a poor knowledge regarding triage system and 4% of the assessed sample had a good knowledge regarding triage system. Based on the result of the present study, it can be concluded that nurses' knowledge about triage in various in- patients departments of selected hospital of Sikkim was inadequate. There is a significant association between knowledge; and educational qualification; and exposure to workshop or CNE but there is no significant association between knowledge and demographic variables like age, gender and years of experience of nursing staff of selected hospital of Sikkim*
Key words: *Triage system, knowledge, nursing staff.*

I. Introduction

The triage system is a simple yet carefully structured process in which patients are categorized to subsequent groups according to the severity of their presenting condition. This system aims to maximize benefits by prioritizing patients with urgent cases from non-urgent cases[1]. The purpose and function of triage is to first identify the patients with life threatening and emergency conditions who cannot wait to be seen and initiate appropriate interventions [2].

International Federation of Red Cross and Red Crescent Societies' world disaster report 2013 accounts 337 natural hazard disasters and 192 technological hazard disasters leading to 29,163 deaths [3]. The World Health Organization believes that nurses and midwives are frontline workers under stable conditions but more so during situations of Emergencies in Hospital settings. In order to contribute to saving lives and promoting health under such difficult conditions, they need to have the adequate knowledge. Hence, the nursing staff must show the ability for critical thinking in demonstrating best standard.[4]

In India, according to the National Informatics Centre, Government of India, one road accident takes place every minute and 1 death is due to road traffic accident every 4 minute. As per the National Disaster Management Authority, Government of India, in the year 2013, fatalities which were a result of disasters such as Floods cyclones, landslides were reported to be 4,199 [5]

The Land revenue and disaster management department, government of Sikkim reports the loss of 63 human lives and 774 casualties in Sikkim's devastating 2011 earthquake. This was followed by this year's

recent tragic road mishap involving a SNT bus which killed three and injured 40 as reported by the Sikkim State Disaster management authority [6]

In the current emergency care and environment, with increasing patient volume and acuity, it is more important than ever to ensure that nurses performing the vital triage function have the appropriate competencies [7]. Nursing competence refers to a demonstrated ability to integrate knowledge, skills, abilities, and judgment based on scientific knowledge and expectations for nursing practice [8].

A quantitative descriptive cross- sectional and observational study conducted by Robert Aloyce, Sebalda Leshabari, Petra Brysiewicz for the assessment of knowledge and skills of triage amongst nurses working in the emergency centres in Dar es Salaam, Tanzania in the year 2010. A sample of 60 nurses working in emergencies of national hospital and three of municipal district hospitals were selected for the study. The study emphasized the need to include in- service training/education workshops for integrating nurse's knowledge and skill. The finding was 33% (20/60) of the respondents were not knowledgeable about triage. 13% of t1`he respondents reported that although they had attended workshops, there had been a lack of information on the implementation of triage. More than half (52%) of the responders were not able to allocate the patient into triage category [9]

Methods
The research design adopted for the study is non-experimental descriptive survey design was conducted among 100 Nursing staff of selected hospital of Sikkim. The investigators adopted purposive sampling technique.After thorough review of literature and discussion with experts.

Table1: Tools for data collection

Sl. no	No. of Tools	Tools	Variables	Technique
1	**TOOL I PART A**	Demographic characteristics	Age, Gender, Educational qualification, Years of experience, Exposure to workshop or Continuous nursing education programme on triage system.	Paper pencil test (Self report)
2	**TOOL I PART B**	Structured Knowledge Questionnaires	Knowledge This questionnaire will assess the knowledge of nursing staff regarding triage This tool consists of 30 Multiple choice Questions with one correct option. Each correct answer carries one mark and wrong options is zero and the scoring system of this questionnaires will be Poor knowledge= (0-10 marks) Average knowledge = (11-20 marks) Good knowledge = (21-30 marks)	Paper pencil test (Self report)

The prepared tools in table 1, were given for validation to 7 experts on 03.02.18.-Two doctors of Department of Medicine (CRH), two doctors from department of medicine (STNM) and three from the faculty members of (SMCON). They partially agreed on the content and organization of some questions and fully agreed on others. Among the items from Tool I: part A, 100% of the items were agreed upon, from Tool I Section B: 97% were agreed, 3% were recommended for change .Modification were made and shown to the expert and modification done was agreed upon. The reliability for the structured knowledge questionnaire was done by using split half method and the reliability obtained was (r=.99). Hence the tool was found to be reliable.

The pilot study was conducted among 10 nursing staff working at STNM hospital from 26.02.2018 to 03.03.2018, after obtaining formal permission from the Principal (SMCON) and the Medical Superintendent (STNM), after giving an informed consent to the samples having the same characteristics as the main study samples. The finding of the pilot study revealed that none of the samples had a good knowledge regarding triage, 80% samples had an average knowledge and 20% had poor knowledge regarding triage.

II. Result

Table 2. Frequency and percentage distribution of demographic variables for the samples
N=100

Sl No	Sample Characteristics	Frequency (f)	Percentage (%)
1	**Age (in years)**		
1.1	**21-30**	93	93
1.2	**31-40**	6	6
1.3	**41-50**	1	1
2	**Gender**		
2.1	**Female**	95	95
2.2	**Male**	5	5
3	**Educational qualification**		
3.1	**B.Sc.**	39	39
3.2	**P.B.BSc**	11	11
3.3	**GNM**	50	50
4	**Years of experience**		
4.1	**1-5 years**	84	84
4.2	**>5-10 years**	15	15
4.3	**>10 years**	1	1
5	**Exposure to workshop or CNE**		
5.1	**Yes**	26	26
5.2	**No**	74	74

The data in table 2. shows that majority 93(93%) belong to age group 21-30 years, 95 (95%) are females, 50 (50%) have an educational qualification of GNM, 84(84%) have a work experience of 1-5 years and 74(74%) have no exposure to workshop or CNE.

Table 3: Frequency and percentage distribution of knowledge score regarding triage system among nursing staff of selected hospital of Sikkim.
N=100

Score	Frequency (f)	Percentage (%)
Good (21-30)	**4**	**4**
Average (11-20)	**63**	**63**
Poor (0-10)	**33**	**33**
Total	**100**	**100**

The data presented in Table 3 shows that, 63 (63%) of the samples had an average knowledge regarding triage system, 33 (33%) of the samples show poor knowledge regarding triage system and only 4 (4%) of the samples had good knowledge regarding triage system.

Bar diagram presenting frequency and percentage distribution of knowledge score regarding triage system among nursing staff of selected hospital of Sikkim.

Table 4: Computed mean, median and standard deviation knowledge score regarding triage system among nursing staff of selected hospital of Sikkim.
N=100

SL No	Variable	Maximum Score	Range of Score	Mean	Median	Standard deviation
1.	Knowledge	**30**	**4-28**	**18.4**	**17.8**	**1.50**

The data presenting in table 4 shows the descriptive analysis of knowledge of staff nurses regarding triage system. It shows that the mean score is 18.4, the range of score is 4-28, the median is 17.8 and the standard deviation is 1.50.

Table 5: Area wise distribution of knowledge score regarding triage system among nursing staff of selected hospital of Sikkim

N=100

Sl No	Area	Frequency of samples giving correct answers	Percentage (%)
1.	Meaning of Triage		
	Q1	85	85
	Q2	38	38
	Q3	25	25
2.	History of Triage		
	Q4	28	28
	Q5	35	35
3.	Incidence of Triage		
	Q6	62	62
4.	Colour coding with case severity		
	Q7	62	62
	Q8	56	56
	Q9	39	39
	Q10	79	79
	Q11	36	36
	Q12	41	41
5.	Types of Triage		
	Q13	44	44
	Q14	54	54
	Q15	31	31
	Q16	33	33
	Q17	36	36
6.	Process of Triage		
	Q18	45	45
	Q19	23	23
	Q20	30	30
	Q21	44	44
	Q22	49	49
	Q23	52	52
	Q24	45	45
	Q25	48	48
	Q26	17	17
	Q27	30	30
7.	Nurses responsibility		
	Q28	37	37
	Q29	41	41
	Q30	28	28

The findings given in Table 5 shows the area wise distribution of knowledge score regarding triage system among nursing staff of selected hospital of Sikkim.

Table 6: Description of the findings related to association between knowledge and selected demographic variables. Chi-square value for association between knowledge and selected demographic variables

N=100

Sl No	Variables	Median ≤18	Median >18	df	χ^2 value (Calculated)	P value (Tabulated)	Remarks
1.	**Age**						
	20-30	90	3				
	30-40	5	1	4	6.98	9.49	NS

				df			
	40-50	1	-				
2.	**Gender**						
	Female	91	4	2	4.88	5.99	NS
	Male	5	-				
3.	**Educational qualification**						
	B.Sc.	37	2				
	P.B.BSc	9	2	4	11.56	9.49	**S**
	GNM	50	-				
4.	**Years of experience**						
	1-5 years	78	6				
	>5-10 years	13	2	4	6.24	9.49	NS
	>10 years	1	-				
5.	**Exposure to workshop or CNE**						
	Yes	23	3				
	No	70	4	2	7.48	5.99	**S**

Here, df= degree of freedom, S= significant, NS= not significant. Table 6: The table reveals the association between the knowledge and selected demographic variables. The findings show there is a significant association between knowledge regarding triage system and educational qualification and knowledge regarding triage system and exposure to workshop or CNE among nursing staff working in selected hospital of Sikkim.

III. Discussion

In the current study 63(63%) of nursing staff have an average knowledge regarding triage system. These findings were in accordance with other studies .A similar study done by MalMalekshahi and Mohammadzadeh on knowledge level of the nurses about triage, where the knowledge level were average and also the study of Goranssonetal where the knowledge level was 57.7%.

Reviewing work experience and triage knowledge showed that there was no significant association between work experience and obtained scores and it cannot be said that with increasing work experience, the triage knowledge would increase. This findings was in accordance with the study findings of Conisidineet al. that said knowledge has a more effective role in triage performance than work experience of the nurses, but our finding was not in accordance with the study of Taheri et al, that found a positive and significant relationship between work experience and triage knowledge. However as Conisidine et al said more studies was needed.

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 diploma and Post BSc nurses.

This difference in knowledge may be probably due to indicative differences in their professional qualification. This is supported by Chan who propounded that the nurses whose qualification was diploma level executed lower level of awareness than bachelor, master or doctoral students in clinical practice.

Another study conducted by Fathoni et al supports the findings of the current study as they found that 42% had poor knowledge scores. They concluded that the participants required continuing nursing education and training courses related to triage to improve their knowledge and skill in order to increase patient safety.

The findings of the current study is also supported by studies: conducted by Robert Aloyce, Sebalda Leshabari, Petra Brysiewicz among 60 nurses on "knowledge of triage amongst nurses working in the emergency centres in Dar es Salaam, Tanzania in the year 2010" . The study found out that 33% (20/60) of the samples had poor knowledge.

Acknowledgements

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