# A Descriptive Study to Assess the Knowledge of Staff Nurses Regarding Triage System in Selected Hospitals at Hassan, Karnataka

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## ABSTRACT

**INTRODUCTION:** Triage is the process of sorting patients according to their need for medical care, irrespective of their order of arrival or other factors including sex, age, socioeconomic status, insurance status, residential status, nationality, race, ethnicity or religion. Triage includes an assessment to prioritize Emergency department patients in need of immediate care, in accord with clinical severity and time urgency, related with patients with non- urgent illness, who can wait longer to be seen. **OBJECTIVES**1. To assess the level of knowledge of staff nurses regarding triage system.2. To find out the association between knowledge and selected demographic variables of staff nurses. **METHODOLOGY:** A descriptive study was conducted on 60 staff nurses to assess knowledge regarding triage system by using structured knowledge questionnaire. **RESULTS:** Findings showed that majority of Staff Nurses 59 (98.33%) had inadequate Knowledge only 1 (1.67%) staff nurses are moderately adequate, and none of them had adequate knowledge. **CONCLUSION:** The current research has shown that out of 60 Staff nurses almost 98.33% of them had inadequate Knowledge. So, the result endorses the staff nurses had very poor knowledge on triage system. Designed educational interventions to enhance knowledge on triage system among staff nurses is mandate to effective prioritization and categorization of patients that in turn will lessen load and the congestion of crowding problems in emergency.

## KEYWORDS

*Staff Nurses, Knowledge and Triage system*

## INTRODUCTION

Triage is the process of sorting patients according to their need for medical care, irrespective of their order of arrival or other factors including sex, age, socioeconomic status, insurance status, residential status, nationality, race, ethnicity or religion. Triage includes an assessment to prioritize Emergency department patients in need of immediate care, in accord with clinical severity and time urgency, related with patients with non- urgent illness, who can wait longer to be seen.[1]

A Well executed triage program will help hospital emergency department quickly identify patients' needs of immediate attention, better recognize patients who are could safely and more professionally be seen in fast track urgent care. The triage system helps to evaluate patient acuity and resource. It has been shown to be reproducible across emergency departments, including urban and rural setting and academic and community hospitals.

Many studies have revealed that factual knowledge is an important factor in enlightening triage decisions and the role of experience as an independent influence on triage decisions but very few studies found accurate knowledge on triage in

emergency. So, the purpose of this study is to describe to assess knowledge of staff nurses regarding triage system

# STATEMENT OF THE PROBLEM

**A descriptive study to assess knowledge of Staff Nurses regarding Triage System in selected hospitals at Hassan, Karnataka.**

## OBJECTIVES

1.     To assess the level of knowledge of staff nurses regarding triage system.

2.     To find out the association between knowledge and selected demographic variables of staff nurses.

## MATERIALS AND METHODS

### Research Approach

In this study, Descriptive survey approach was adopted, aimed at assessing level of knowledge regarding triage system among staff nurses.

### Research Design

The research design adopted for this study was descriptive survey design, to assess level of knowledge regarding triage system among staff nurses.

### Setting of the study

The present study was conducted in selected hospitals of Hassan, Karnataka.

Sample and Sampling technique Population

In this study samples are Staff nurses working in selected hospitals of Hassan. In this study probability simple random sampling technique was used to select the samples.

Sample Size

The sample comprise of 60 staff nurses working in selected hospital of Hassan.

### Sampling criteria

### Inclusion criteria

1.     Staff Nurses who are working in the selected hospital, Hassan.

2.     Staff nurses who are available during the study.

3.     Staff nurses who are willing to participate in the study.

### Exclusion Criteria

**1.**     Staff Nurses who are not willing to participate in the study.

**2.**     Staff Nurse who are absent during the time of data collection.

### DATA COLLECTION INSTRUMENT

Data collection tools were the procedures or instruments used by the researcher to observe or measure the key variables in the research problem.

The following tools are used in this study to collect the data.

### Descriptions of the tools

The tool consisted of two parts

Part I: Socio Demographic data

Part II: Structured knowledge questionnaire

**Part I: Socio demographic data**

Socio demographic variables consists of 10 items, which includes age, gender, religion, residence, education status, registration status, designation experience, income and previous information.

**Part II: Structured knowledge questionnaire**

This part of the tool consisted of 30 items in areas of triage system the areas such as Basic Knowledge on Triage system, START (Simple Triage and Rapid Treatment), Color tags and Triage Decision. Each correct answer scored as 1 and remaining scored as 0. Level of knowledge Score categorized as Inadequate – Up to 50% Moderately adequate - 51-75% and Adequate – Above 75%.

**VALIDITY AND RELIABILITY**

**Content validity of the tool**

Content validity refers to the degree to which an instrument measures what it is supposed to measure. The prepared data collection tool, along with the problem statement, objectives, operational definitions, blueprint and criteria checklist designed for validation were submitted to 7 experts. The experts were requested to give their opinion and suggestion regarding the relevance, adequacy and appropriateness of

items in the tool. The modifications were made in the tool as per the validators' suggestions.

**Pre-testing and Reliability**

Pre-testing is the trial administration of a newly developed instrument to identify flaws and assess the time requirements. Reliability of the research instrument is defined as the extent to which the instrument yields the same results on repeated measures. It is then concerned with consistency, accuracy, precision, stability, equivalence and homogeneity. Reliability was established by Split-Half method using Spearman Brown prophecy formula. The reliability of the structured knowledge questionnaire on triage system obtained was 0.84 which proved the effectiveness and efficiency of the tool.

DATA COLLECTION PROCEDURE

As the first step in the data collection procedure, the investigator met the Nursing superintendents of selected hospitals Hassan in order to establish support and cooperation to conduct study successfully. The formal permission was taken from the Medical superintendent of hospitals for the data collection. After obtaining the permission investigator met the subjects and established rapport with them. A written informed consent was taken separately from each Staff nurses. Appropriate orientation was given to the

Staff nurses about the aim of the study, nature of the questionnaire and adequate care was taken for protecting the subjects from the potential risks, including maintaining confidentiality, security and identity. The study group subjects were asked to answer a structured questionnaire with demographic data.

## DATA ANALYSIS

In order to achieve the stated objectives of the study, the data obtained from the subjects were coded numerically and tabulated. After tabulation and coding,

enter the data into a spread sheet by the keyboard. The collected data was analyzed with the descriptive and inferential statistics like Staff nurses independent 't'-test were used to test the hypothesis. The chi-square test was used to find out the association between demographic variables with knowledge scores.

## RESULTS

**Findings related to socio-demographic variables of Staff nurses.**

their age group revealed that 73 %of were in the age group of 20 to 30 years, 25% of respondents are in the age group of 31-40, 5% of respondents are in the age group of 41-50. In relation to gender revealed that 8.33 % of the Staff Nurses were male and 91.67 % of the Staff Nurses were female. Religion revealed that 66.7% of the were belonging to Hindu religion 81.67%, Five (5 %) of the Staff Nurses belonged to the Muslim religion and 13.33% of the Staff Nurses were belonged to the Christian religion. In regard to their area of residence revealed that 26.67% of the Staff Nurses were belongs to urban area, and 73.33% of the Staff Nurses were belongs to rural area.

**Table 1** Distribution of staff nurses according to socio-demographic variables **(N=60)**

| Demographic Variables | | No. of Nurses(n) | Percentage |
|---|---|---|---|
| Age of the Staff Nurse | 20-30 years | 42 | 70 |
| | 31-40 years | 15 | 25 |
| | 41-50 years | 3 | 5 |
| | 50 years and above | 0 | 0 |
| Sex | Male | 5 | 8.33 |
| | Female | 55 | 91.67 |
| Religion | Hindu | 49 | 81.67 |
| | Muslim | 3 | 5.00 |
| | Christian | 8 | 13.33 |
| | Others | 0 | 0 |
| Residence | Urban | 16 | 26.67 |
| | Rural | 44 | 73.33 |

Table 1 shows that the findings of the study related distribution of Staff nurses according to socio demographic variables are as follows. Distribution of in relation to

**Table 2** Distribution of staff nurses according to socio-demographic variables **(N=60)**

| Demographic Variables | | No. of Nurses(n) | Percentage |
|---|---|---|---|
| Educational Qualification | General Nursing Midwifery | 46 | 82.14 |
| | B. Sc. Nursing | 10 | 17.86 |
| | M.Sc. Nursing | 4 | 7.14 |

| | | | |
|---|---|---|---|
| | Others Post certificate courses | 0 | 0.00 |
| Designation | Head Nurse | 5 | 8.33 |
| | Supervisor | 7 | 11.67 |
| | Ward Nurse | 48 | 80.00 |
| Income | Below Rs. 5000 | 8 | 13.33 |
| | Rs. 5000 – 8000 | 38 | 63.33 |
| | Rs. 8000 – 10000 | 6 | 10.00 |
| | Rs. 10000 – 12000 | 3 | 5.00 |
| | Above Rs. 12000 | 5 | 8.33 |
| Registered Nurse | Yes | 60 | 100 |
| | No | 0 | 0 |
| Work experience | Up to 1 year | 8 | 13.33 |
| | 1 – 5 years | 37 | 61.67 |
| | 5 – 10 years | 12 | 20.00 |
| | Above 10 years | 3 | 5.00 |
| Source of Information for Triage system | Mass media | 5 | 8.33 |
| | CNE Programme | 6 | 10.00 |
| | Nil | 49 | 81.67 |

Table 2 Shows that the findings of the study related distribution of Staff nurses according to socio demographic variables are as follows. Educational qualification of staff nurses revealed that 82.13% of staff nurses are GNM, 17.86% of the are B.Sc Nursing 7.14% are M.Sc Nursing.Distribution of staff nurses with regard to their designation revealed that 8.33 % of the respondents were head nurse 11.67 % were supervisor and remaining 80 % of the were ward nurses. Designation revealed that 13.3%3 % of the respondents' income was below 5000, 63.33 % of the respondents' income was Rupees 5000-8000, 10.00% respondents' income was Rs.8000-10000, 5.00% income was rs.10000-12000 and 8.33% income was above 12000 were supervisor and remaining 80 % of the were ward nurses. Their registration status revealed that 100% are registered in the council. In relation to their working experience revealed that 13.33% of have the working experience up to 1 year, 61.67% of the have the working experience of >1 to 5 years, 20 % of the have the working experience of 5-10years, 5% of the have the working experience more than 10 years. According to Source of information regarding Triage system revealed that 8.33 % of the gained information from mass media and 10% from continuing nursing education programme and 81.67% sources of triage system were Nil.

**Table 3** Level of knowledge of Staff nurses on triage (N=60)

| Level of Knowledge | Frequency | Percentage |
|---|---|---|
| Inadequate | 59 | 98.33 |
| Moderately adequate | 1 | 1.67 |
| Adequate | 0 | 0.00 |
| **Total** | 60 | 100.0 |

The above table 3 depicted majority of Staff Nurses 59 (98.33%) had inadequate Knowledge only 1 (1.67%) staff nurses are moderately adequate, and none of them had adequate knowledge.

**Table 4** Association between selected demographic variables and the level of knowledge (N=60)

| Demographic Variables | | No. of Nurses (n) | Level of Knowledge | | CHI-SQUARE TEST |
|---|---|---|---|---|---|
| | | | **Inadequate** | **Moderately adequate** | |
| **Age of the Staff Nurse** | 20-30 years | 42 | 41 | 1 | $\chi^2 = 0.4358$ p = 0.8042, NS |
| | 31-40 years | 15 | 15 | 0 | |
| | 41-50 years | 3 | 3 | 0 | |
| **Sex** | Male | 5 | 5 | 0 | $\chi^2 = 0$ p = 1, NS |
| | Female | 55 | 54 | 1 | |
| **Religion** | Hindu | 49 | 48 | 1 | $\chi^2 = 0.2283$ p = 0.8921, NS |
| | Muslim | 3 | 3 | 0 | |
| | Christian | 8 | 8 | 0 | |
| **Residence** | Urban | 16 | 16 | 0 | $\chi^2 = 0$ p = 1, NS |
| | Rural | 43 | 43 | 1 | |

**Note: NS = Not significant**

The above table 4 depicted that the chi square test is used to associate the knowledge on staff nurses on triage system with selected demographic variables. The $\chi^2$ value shows that there is no significant association between the age, gender, religion or place of residence with their pre-test knowledge score.

**Table 5** Association between selected demographic variables and the level of knowledge (N=60)

| Demographic Variables | | No. of Nurses (n) | Level of Knowledge | | CHI-SQUARE TEST |
|---|---|---|---|---|---|
| | | | **Inadequate** | **Moderately adequate** | |
| Source of information for Triage system | Mass media | | | | $\chi^2 = 0.2283$ p = 0.8921, NS |
| | CNE Programme | | | | |
| | Nil | 49 | 48 | 1 | |
| Educational Qualification | General Nursing Midwifery | 46 | 46 | 0 | $\chi^2 = 14.2373^{***}$ p = 0.0008 |
| | B. Sc. Nursing | 10 | 10 | 0 | |
| | M.Sc. Nursing | 4 | 3 | 1 | |
| Designation | Head Nurse | 5 | 5 | 0 | $\chi^2 = 0.2542$ p = 0.8806, NS |
| | Supervisor | 7 | 7 | 0 | |
| | Staff Nurse | 48 | 47 | 1 | |
| Income | Below Rs. 5000 | 8 | 8 | 0 | $\chi^2 = 19.322^{***}$ p = 0.0007 |
| | Rs. 5000 – 8000 | 38 | 38 | 0 | |
| | Rs. 8000 – 10000 | 6 | 6 | 0 | |
| | Rs. 10000 – 12000 | 3 | 2 | 1 | |
| | Above Rs. 12000 | 5 | 5 | 0 | |
| Registered Nurse | Yes | 60 | 59 | 1 | $\chi^2 = 56.0667$ p = 0, NS |
| | No | 0 | 0 | 0 | |
| Work experience | Up to 1 year | 8 | 8 | 0 | $\chi^2 = 4.0678$ p = 0.2542, NS |
| | 1 – 5 years | 37 | 37 | 0 | |
| | 5 – 10 years | 12 | 11 | 1 | |
| | Above 10 years | 3 | 3 | 0 | |

Note: NS = Not significant
***-Significant

The data presented in Table 5 shows that chi-square value computed between the knowledge and selected variables like designation, registration status, work experience and Source of information had no association. However, there was significant association of the variables,

## DISCUSSION

The study findings showed that Level of Knowledge on triage system of majority of Staff Nurses 98.33% of them had inadequate Knowledge 1.67% of staff nurses had moderately adequate, and none of them had adequate knowledge.

Similar study Conducted by Ali S et al (2013) showed that knowledge of triage among nurses in emergency units 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% [2].

Another study conducted which supported this present study by Israel Jeba and Arti Devi (2016) on knowledge of staff nurses regarding triage system before and after structured teaching programme. 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 [3].

The same results were found in some earlier studies which support these findings. A study conducted 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[4].

Similar to this present research there was a study conducted by Fathoni et al (2010) showed that knowledge about triage among nurses in Indonesia They reported that more than half of their study subjects (58%) had low triage knowledge scores. Findings showed that based on the referenced criterion, the 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 [5].

The findings of the study recommend the Planned teaching programme on triage system in the hospitals in emergency time to have a proper and effective prioritization and categorization of patients that in turn will lessen load and the congestion of crowding problems in emergency departments.

## CONCLUSION

The result shows that there should be improvement in knowledge regarding triage system. Effective planned teaching

programme on triage is required to improve the knowledge of staff nurses. Effective triage is important for patient safety by correctly categorizing presenting patient conditions in emergency. The investigator further planned to provide Video Assisted Teaching on Triage system to the Nurses. Every Hospitals should initiate necessary and appropriate interventions to improve nurses' knowledge on triage system to handle emergency. So, this study concluded that the participants required continuing education/teaching programme related to triage to improve their knowledge and skill in order to increase patient safety.

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