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ASSESS KNOWLEDGE AND PRACTICE REGARDING TRIAGE AMONG NURSES IN EMERGENCY DEPARTMENT AT PUBLIC TERTIARY CARE HOSPITAL PESHAWAR

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Abstract

Triage is essential in emergency care for prioritizing patients based on the severity of their condition. This study aimed to assess the knowledge, practice, and associated factors related to triage among nurses working in the emergency departments of three public tertiary care hospitals in Peshawar: Khyber Teaching Hospital, Hayatabad Medical Complex, and Lady Reading Hospital. A cross-sectional design was used, and data were collected from 100 nurses selected through convenient sampling, using a structured questionnaire. Knowledge was measured through topic-related questions, while practice was assessed through performance-based items. The findings will provide insight into the current understanding and application of triage protocols and support hospital administrations and policymakers in improving emergency care quality through targeted training and standardized guidelines.

INTRODUCTION

- The medical term "triage" comes from the French word "trier," which means to separate, sort, or select. In the medical context, triage refers to the process of determining which patients require immediate attention based on the severity of their illness or injury. This critical practice is one of the foundational elements of decision-making in emergency departments (EDs)) and plays an essential role in managing patient care (Reisi, Saberipour et al. 2018).
- One essential feature of the healthcare delivery system is the emergency room. Frontline healthcare personnel at emergency departments (EDs) treat patients who come with acute, life-threatening diseases.
- (Rayan, Hussni Al-Ghabeesh et al. 2022).
- Triage is a process that consists of timely and accurate identification of patients who require immediate treatment and distinguishes them from

those who also present with diseases or illnesses but whose conditions can wait (Mistry et al., 2018).

- Effective triage ensures that healthcare organizational capacity meets overall patient demand, especially during disasters, pandemics, and other public health emergencies (Farcas et al., 2020). H
- The emergency department (ED) is a crucial component of the healthcare delivery system. Healthcare workers in ED are frontline staff who deal with patients presenting with acute life-threatening conditions (Rayan et al., 2022).
- The quality of services provided in the ED has significant consequences not only on patients' survival but also on their hospital experience, care

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satisfaction, and psychological well-being (Morley et al., 2018).

- Optimal ED functioning has the potential to improve patient flow across hospital units, especially for those who will require life-saving procedures (Jarvis, 2016).
- Globally, the level of knowledge and practice regarding triage among emergency-department nurses varies widely, reflecting differences in training, resources, and institutional protocols. Studies from high-resource settings, such as Saudi Arabia, report generally good triage competence; however, even there researchers found important gaps, with many nurses demonstrating only moderate knowledge and inconsistent practice of triage principles. Similar trends appear in middle-income countries. For example, a study in Al Dawadmi General Hospital revealed noticeable deficits in both triage understanding and practical application, while research from Egypt reported predominantly low levels of triage knowledge and poor performance among critical-care and emergency nurses.
- In South Asia, the pattern remains concerning. A 2024 study from Pakistan found that only 34% of emergency nurses had high knowledge, while more than half demonstrated poor adherence to triage practice standards. In Peshawar, another study highlighted that only 12.56% of nurses achieved excellent knowledge, with the majority falling into good or average categories. Collectively, these findings indicate that triage knowledge and practice remain inconsistent across countries and healthcare systems. They also underline an urgent need for structured training programs, standardized protocols, and continuous professional development to strengthen triage decision-making and improve patient outcomes worldwide.

Methods:

The study utilized a descriptive, cross-sectional, correlational research design.

Setting:

This study was conducted in the Emergency Departments of three major government tertiary care hospitals in Peshawar, Khyber Pakhtunkhwa: Khyber Teaching Hospital, Hayatabad Medical Complex, and Lady Reading Hospital. These hospitals serve as primary referral centers for a large and diverse population and provide round-the-clock emergency care for patients with medical emergencies, trauma, and life-threatening conditions.

The Emergency Departments in these hospitals are equipped with triage areas, resuscitation units, observation rooms, and essential diagnostic facilities. Nurses in these departments play a critical role in patient assessment, triage, monitoring, and timely interventions under high-pressure conditions. The high patient flow, specialized services, and active involvement of nursing staff make these departments suitable settings for assessing nurses' knowledge and practice regarding triage.

Sample :

The study population consisted of nurses working in the Emergency Departments of Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), and Hayatabad Medical Complex (HMC), Peshawar, totaling 220 nurses. A sample of 100 nurses was selected from these departments, representing approximately 45% of the population. The sample size was calculated to achieve a 95% confidence interval, ensuring that the findings accurately reflect the knowledge and practice of nurses regarding triage in high-volume, 24-hour emergency care settings.

Study duration :

The study was span six month, which include data collection ,and analysis . it was monitored regularly

Inclusion Criteria:

Registered nurses with direct patient care responsibilities working in the Emergency Departments of public tertiary care hospitals.

Exclusion Criteria:

Nurses not involved in direct patient care, working outside the Emergency Department, or not registered with PN&MC, Pakistan.

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Ethical Considerations:

Informed consent was obtained from all participants prior to their involvement in the study. Permission for data collection was also secured from the research committees of the selected hospitals. All procedures were conducted in accordance with ethical standards to ensure the rights, privacy, and confidentiality of the participants were maintained throughout the study.

DATA COLLECTION TOOL: QUESTIONNARE

The questionnaire consists of the following parts:
First part consists of a consent form and 04 demographic questions.
The second part consists of 11 knowledge related questions of assess knowledge regarding triage triage management .
The third and final part consists of 06 questions related to assess practice regarding triage triage management

Data collection procedure :

Data was collected through adopted questionnaires after taking a written consent attached to the questionnaire from participants at the time of data collection. Each participant was given forty minutes to fill the questionnaire. Queries were clarified during filling the questionnaire.

Data analysis procedure:

Data was analyzed through SPSS version 22. In a descriptive statistic, data was calculated for frequencies, percentages and were presented through tables, and charts. For inferential statistics chi-squire test was used for the correlation among categorical variables.

Operational definitions

Knowledge

In this study, *knowledge* refers to the participants' understanding of triage concepts, procedures, and principles. Knowledge was assessed through a structured questionnaire. Based on the total score obtained, knowledge was categorized using the following cut-off values:

- High (Excellent) Knowledge: Scores above 75% of the total possible score.
- Good Knowledge: Scores between 50% and 75%.
- Low Knowledge: Scores below 50%.

Practice

Practice refers to the actual performance and application of triage skills demonstrated by nurses in the emergency department. Practice was measured through a self-reported practice assessment scale. The following cut-off values were used to classify practice levels:

- High (Excellent) Practice: Scores above 75% of the total possible score.
- Moderate Practice: Scores between 50% and 75%.
- Low Practice: Scores below 50%.

RESULT:

Result of this research as show below:

Gender participation:

A total of 100 nurses participated in the study**.** The participants of this study were conducted on hospital employed nurses working in emergency department in Peshawar.

1. Leading reading hospital Peshawar.
2. Khyber teaching hospital Peshawar.
3. Hayatabad medical complex Peshawar.

Participants were selected using a simple random sampling technique to ensure fair representation across gender and academic years. Before data collection, all students were informed about the objectives and significance of the research, and written informed consent was obtained. Participation was voluntary.

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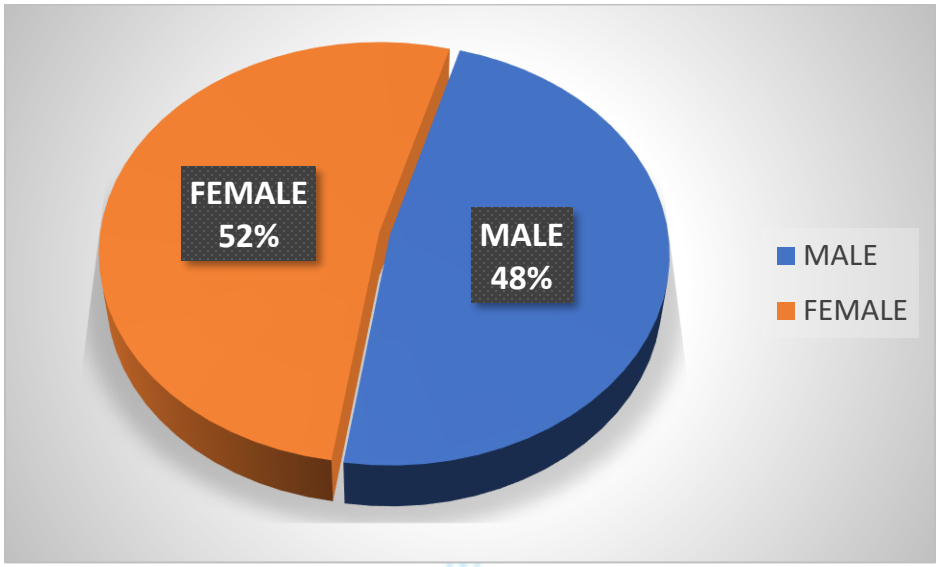
Table of Gender Participants

valid	frequency	percent	Valid Percent	Cummulative Percent
Male	48	48.0	48.0	48.0
Female	52	52.0	52.0	52.0
Total	100	100.0	100.0%	100.0



Hospital wise distribution : The majority of participants were from leady reading hospital 40 (40%), followed closely by Khyber teaching hospital 30 (30%) and Hayatabad medical complex is 30 (30%). This representation across hospital strengthens the reliability of the study findings and ensures that the results reflect the overall Triage management literacy trends among nurses.

Table of hospital wise distribution

Valid	Frequncy	Percent	Valid Percent	Cummulative Percent
LRH	44	44.0	44.0	44.0
HMC	28	28.0	28.0	72.0
KTH	28	28.0	28.0	100.0
Total	100	100.0	100.0	

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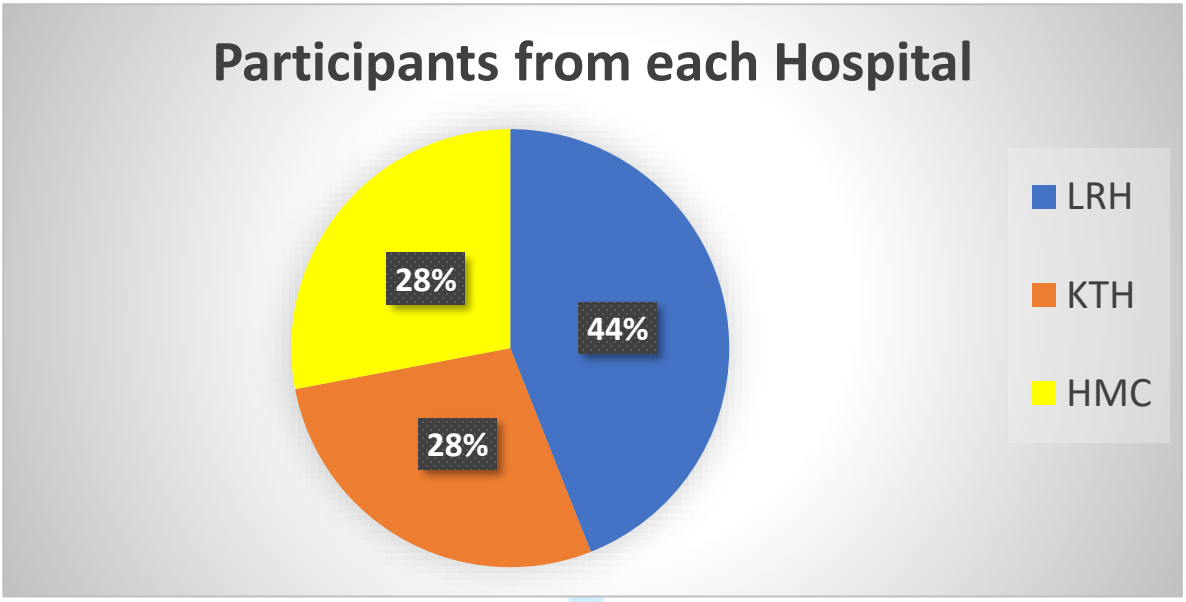
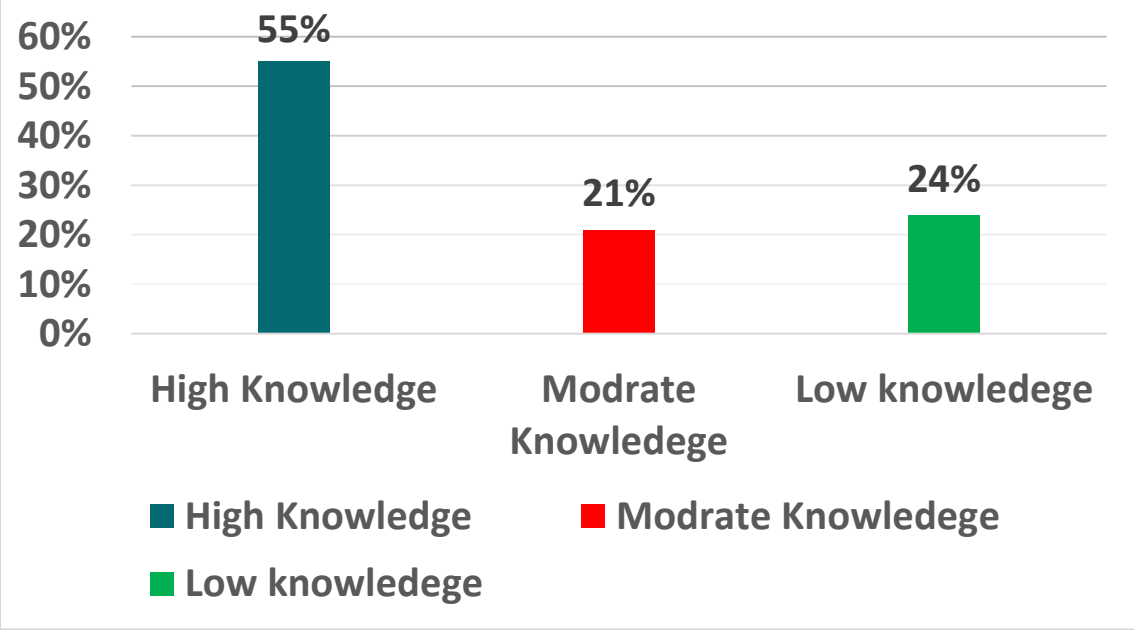


Total Knowledge level of participants :

Study represents the overall understanding of Triage Management among nurses in Peshawar, It show the participants' responses to 11 knowledge-related questions in the structured questionnaire. The individual scores were then summed to produce a total knowledge score for each participant.

After data collection, the total scores were categorized into two levels based on the mean cut-off point.

Low	24%
Moderate	21%
High	55% -



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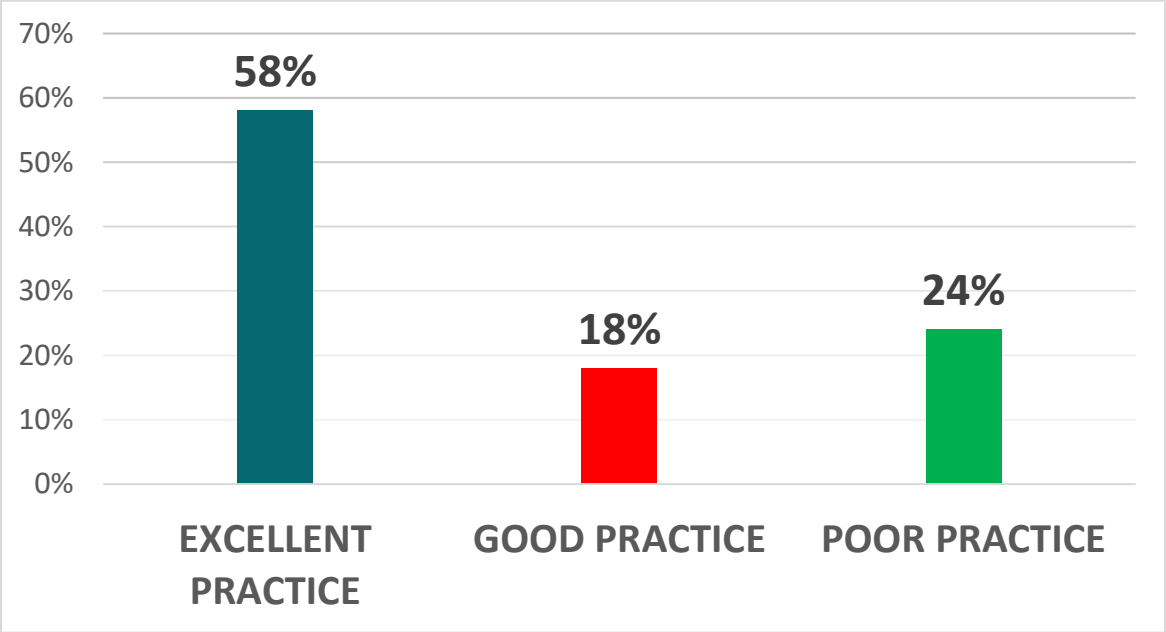
Total Practice Level Of Participants :

Study represents the overall understanding of Triage Management among nurses in Peshawar, It show the participants' responses to 06 knowledge-related questions in the structured questionnaire. The individual scores were then summed to produce a total knowledge score for each participant After data collection, the total scores were categorized into two levels based on the mean cut-off point.

Level of Practice

Poor	24%
Good	18%
Excellent	58%

Table of Practice Level Of Participants



Qualification Level Of Participants:

The participants were registered nurses with basic nursing qualifications, selected randomly to ensure unbiased representation in assessing their knowledge and practice regarding triage management.

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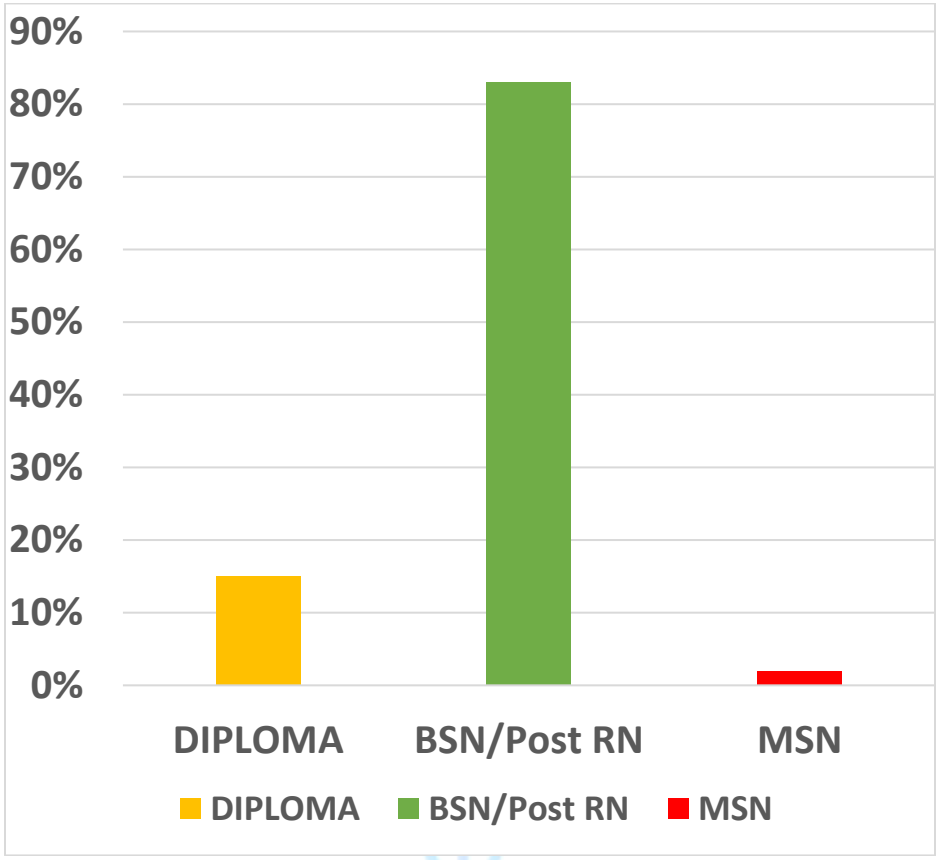
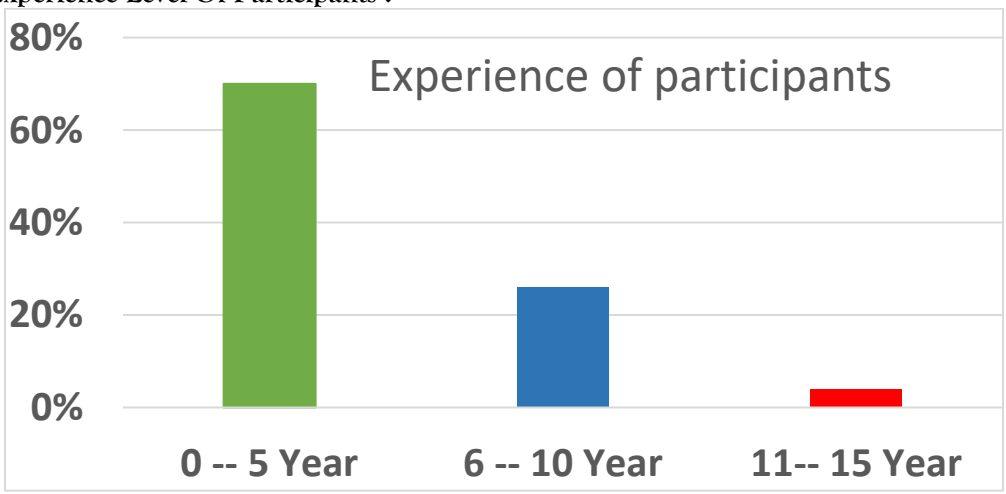
Table Of Qualification Level Of Participants



Experience Level Of Participants:

The participants had varying levels of clinical experience, ranging from entry-level to several years of practice, allowing for a broad assessment of their knowledge and skills in triage management.

Table of Experience Level Of Participants :



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Discussion:

Overview

The findings of this study indicate a clear variation between the participants' knowledge level and their actual clinical practice in triage management. While 55% of the participants demonstrated high knowledge, a notable proportion still fell into moderate (21%) and low (24%) knowledge categories. This shows that although more than half of the nurses possess strong theoretical understanding, a considerable percentage still lacks adequate foundational or updated knowledge.

In comparison, the practice results reveal that 58% of participants exhibited excellent practice, while 18% showed good practice, and 24% demonstrated poor practice. The presence of 24% poor practice, along with 24% low knowledge, suggests that deficiencies in knowledge may directly influence the quality of clinical performance.

The gap observed between knowledge and practice supports existing literature, which commonly reports that nurses may have acceptable theoretical knowledge but face challenges in applying it effectively in real clinical environments. Factors such as workload, limited hands-on exposure, lack of continuous training, or insufficient institutional support may contribute to this inconsistency.

Overall, the results emphasize the need for ongoing capacity-building interventions. Regular refresher training, simulation-based learning, competency assessments, and supportive supervision can help translate theoretical knowledge into effective practice. By addressing these gaps, healthcare institutions can significantly enhance triage accuracy, reduce clinical errors, and improve patient care outcomes.

Implications :

The findings of this study have several important implications for nursing practice, education, and healthcare management:

1. Need for Continuous Education Programs:

Since only 55% of participants demonstrated high knowledge, there is a clear need for regular continuing education and refresher courses to update nurses on current triage guidelines and clinical protocols.

2. Skill-Based Training to Improve Practice:

The existence of 24% poor practice indicates that theoretical knowledge is not adequately translating into clinical performance. Simulation training, hands-on workshops, and supervised practice sessions can help bridge this gap and enhance clinical competency.

3. Strengthening On-Job Supervision and Mentorship:

Consistent supervision and mentorship can support nurses in applying their knowledge effectively, reduce errors, and build confidence in triage decision-making.

4. Development of Standardized Triage Protocols:

Hospitals may benefit from implementing or updating standardized triage protocols to ensure uniformity, accuracy, and accountability in triage practice across all staff members.

5. Institutional Support for Professional Growth:

Adequate staffing, reduced workload, and supportive administrative policies can improve nurses' ability to apply triage principles effectively in busy clinical environments.

6. Improving Patient Outcomes:

Enhancing both knowledge and practice can contribute to quicker decision-making, reduced waiting times, and more accurate prioritization of patients, ultimately improving overall patient safety and quality of care.

7. Basis for Further Research:

The findings highlight the need for future studies exploring barriers to effective triage practice, factors affecting knowledge retention, and the impact of training interventions on performance.

Study limitation:

The study was conducted with a sample of 220 students from only three hospital in Peshawar.

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This small sample may not fully represent all nursing students in Peshawar/KPK. The study was limited to hospital in Peshawar, Khyber Pakhtunkhwa. Results might differ in other cities or provinces where educational systems and cultural beliefs about Triage Management vary.
The data was collected through questionnaires filled out by nurses themselves. Some participants might have given socially desirable answers instead of honest responses.
The study used a cross-sectional design, which shows results at one point in time. It cannot show changes in knowledge or practice over time.

Study Strengths:
This is first study in Peshawar, Khyber Pakhtunkhwa in which the knowledge of nurses regarding Triage Management knowledge and Practice. Our study results can bring positive change in health care system and improve their learning methods, add more Triage Management topics to the curriculum, and promote nurses well-being.

Conclusion:
The study reveals that while a majority of nurses in the emergency departments of KTH and HMC, Peshawar, demonstrated adequate knowledge of triage management (55% high knowledge), there is a noticeable gap in translating this knowledge into practice, with only 58% exhibiting excellent practice. A significant portion of participants still showed moderate to low knowledge and poor practice, highlighting the need for continuous training, practical skill development, and stronger on-job supervision. Addressing these gaps is essential to improve clinical decision-making, enhance patient care, and ensure effective triage management in emergency settings. knowledge level of the participants regarding triage management is satisfactory; however, gaps still exist between knowledge and actual clinical practice. A majority of the participants demonstrated high knowledge (55%), while 21% had a moderate level and 24% possessed low knowledge. In contrast, their practical performance was comparatively lower, as only 58% of nurses exhibited excellent practice, 18% showed good practice, and 24% demonstrated poor practice.
These results indicate that although most participants have strong theoretical understanding, this knowledge is not consistently translated into practice. The presence of poor practice
These results indicate that although most participants have strong theoretical understanding, this knowledge is not consistently translated into practice. The presence of poor practice among nearly one-fourth of the participants highlights the need for continuous professional training, practical skill development, and regular competency assessments. Strengthening hands-on training and providing updated clinical guidelines may help bridge the gap between knowledge and practice, ultimately improving the quality of triage management in the healthcare setting.

- **Objective:** To evaluate nurses' Knowledge, Practice and Associated Factors regarding Triage in emergency department Public tertiary care hospitals Peshawar, Khyber Pakhtunkhwa
- **Method:** The study employed a cross-sectional, descriptive, and correlational design. Data collection was carried out from September 14 ,2025 untilNovember 10, 2025. The study included all emergency department nurses who were working in the LRH ,KTH,HMC . During the data collection period and excluded those who don't have PNC license, don't have roles and responsibilities connected with direct patient care Nursing staff working in emergency department. A self-reported questionnaire with adequate validity and reliability was used. Statistical analysis was performed using the IBM SPSS Version 22 employing descriptive statistics, independent t-test, one-way ANOVA, and Pearson correlation test.
- **Study Design:** Cross Sectional Study Design was used to conduct the study
- **Sample Technique:** Convenient sampling technique was used to collect the data.
- **Study Setting:** This study was conducted in three Government Tertiary Care Hospitals.

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1. **KHYBER TEACHING HOSPITAL,**
2. **HAYATABAD MEDICAL COMPLEX,**
3. **LADY READING HOSPITAL**

➢ **Sample Size:** Sample size was calculated through Raosoft sample size calculator. The Recommended Sample size is 100 with 95% of confidence interval.

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