

Beyond the Triage Tool: Nurses' Assessment Competencies and Contextual Challenges in Emergency Department Triage

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ABSTRACT

This quantitative study evaluated the assessment competencies and contextual challenges of 44 triage nurses in a general hospital setting in Saudi Arabia using a quantitative descriptive-correlational design. The study revealed that triage nurses possess high assessment competencies across both skills ($M = 3.42$) and professional judgment ($M = 3.45$), despite operating in environments with high contextual challenges, led by cultural factors ($M = 3.47$) and manpower constraints ($M = 3.40$). Inferential analysis indicated no significant correlation between overall contextual challenges and overall assessment competencies ($r = 0.158, p = 0.304$), proving that nurses maintain stable clinical competencies and demonstrate professional resilience despite highly stressful and restrictive practice environments. Demographic and professional attributes showed no significant relationship with competency domains, with the sole exception of sex affecting overall competency ($p = 0.017$).

Keywords: - Emergency department triage, assessment competencies, clinical judgment, contextual challenges, multicultural nursing.

INTRODUCTION

Emergency department (ED) triage is one of the most critical responsibilities performed by nurses in acute care settings, requiring immediate patient evaluation and priority assignment under highly challenging conditions. Globally, EDs encounter rising patient volumes, overcrowding, and escalating healthcare demands driven by chronic illness spikes and healthcare resource shortages. In multicultural settings like Saudi Arabia, diverse patient demographics necessitate culturally competent, rapid decision-making. However, despite standardized protocols, institutional hurdles—such as staffing shortages, communication barriers, and environmental distractions—heavily compromise real-world triage accuracy.

Statement of the Problem

This study aimed to assess the assessment competencies of triage nurses and identify the contextual challenges affecting triage assessment in the emergency department using a quantitative research approach. Specifically, it sought to answer the following questions:

1. What was the demographic profile of the triage nurses in terms of age, gender, nationality, highest educational attainment, years of clinical experience, and years of experience as a triage nurse?
2. What was the level of assessment competencies of triage nurses in the emergency department in terms of skills and professional judgment?
3. What contextual challenges affected triage assessment in the emergency department in

terms of cultural factors, linguistic factors, manpower factors, and facility-related factors?

4. Was there a significant relationship between triage nurses' assessment competencies and their professional characteristics?
5. Was there a significant relationship between triage nurses' assessment competencies and the contextual challenges encountered in the emergency department?
6. What policy or program can be enhanced in the emergency department or outpatient department (OPD) after this study?

Scope and Delimitations

The study was conducted in a single Saudi Arabian hospital using a quantitative descriptive-correlational design, assessing triage nurses' competencies across knowledge, skills, and professional judgment in relation to cultural, linguistic, manpower, and facility-related contextual factors, while acknowledging limitations such as single-site sampling, reliance on self-reported survey data, and a cross-sectional design that does not capture longitudinal workflow or patient-volume variations.

Review of Related Literature

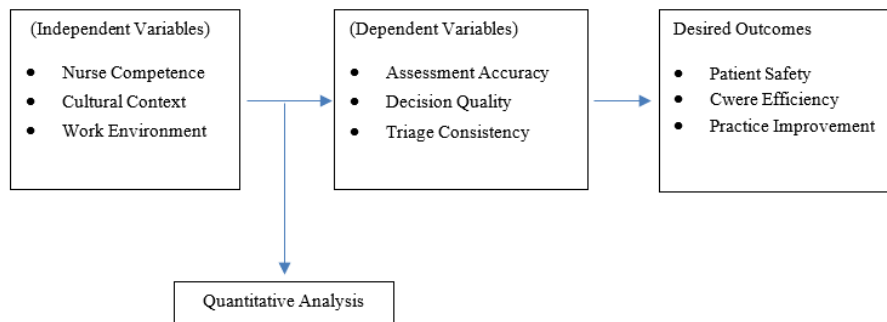
Core emergency nursing competencies rely heavily on clinical judgment and experience, though high-pressure clinical applications and implicit biases frequently challenge triage objectivity (Wolf et al., 2025; Levis-Elmelech et al., 2022). Within multicultural healthcare settings, these individual constraints are heavily compounded by critical communication barriers and systemic bottlenecks—such as severe understaffing and high patient volumes—which directly compromise patient safety, disrupt operational workflows, and degrade frontline clinician well-being (Bakhsh et al., 2024; AlZahrani et al., 2024). Consequently, continuous, blended educational interventions are necessary to bridge the gap between theoretical knowledge and high-pressure clinical prioritization (Zagalioti et al., 2025). Ultimately, improving triage outcomes requires targeted strategies that directly mitigate these dynamic, context-sensitive environmental and systemic barriers (Zou et al., 2025).

Theoretical Framework

This study is anchored in three complementary nursing frameworks:

- **Benner's Novice to Expert Theory (1984):** Explains how nurses develop competence and holistic clinical judgment over time through experiential learning.
- **Neuman's Systems Model (1995):** Views the triage environment as an open system where internal and external stressors threaten operational stability.
- **Roy's Adaptation Model (1999):** Focuses on how triage nurses deploy coping mechanisms to adapt to environmental stimuli and preserve clinical safety.

Conceptual Framework



METHODOLOGY

Research Design

The quantitative framework focused on systematically describing sample attributes via frequencies and mean scores, while evaluating directional relationships using inferential matrices. The approach sought objective, evidence-based data patterns to inform administrative policies in emergency and outpatient care areas

Research Steps

The study layout followed a systematic process: (1) completing an integrative review of literature and establishing theoretical bounds; (2) securing formal institutional clearances and Institutional Review Board (IRB) ethical approvals; (3) coordinating data logistics with the target general hospital administration; (4) orienting potential respondents and collecting survey data; (5) processing values through JASP software; and (6) drafting summaries to shape quality improvement recommendations.

Data Collection and Sample Selection

Conducted in a 24-hour Saudi Arabian general hospital, stratified random sampling targeted ED and OPD blocks. While G*Power 3.1.9.7 required 84 participants (effect size = 0.30, $\alpha = 0.05$, power = 0.80), institutional population limits ($N = 50$) mandated a near-census approach, securing 44 active triage nurses.

Data Analysis Methods

Demographic features were analyzed using frequencies and percentages, while competency and challenge factors were evaluated via means and standard deviations from a 4-point Likert scale. Pearson's correlation coefficient analyzed interactions between variables, while independent t -tests and one-way ANOVA tracked demographic differences at a 0.05 significance level.

Research Hypotheses and Validation

Two null hypotheses guided inferential testing: H_{01} (competency vs. demographics) was accepted across nearly all domains except sex, which showed a significant relationship with overall competency ($p = 0.017$); and H_{02} (competency vs. contextual challenges) was fully

accepted ($p = 0.304$), demonstrating that clinical competencies remain stable irrespective of environmental barrier variations.

Study Limitations and Ethical Considerations

Full ethical oversight was achieved with IRB permission and hospital administrative clearance. Before instrument distribution, written informed consent confirmed voluntary enrollment and the right to withdraw without penalty. By removing labels from all data-gathering techniques, data were kept anonymous for academic evaluation.

RESULTS AND DISCUSSION

The sample of 44 triage nurses reflected a highly qualified and experienced workforce that demonstrated strong professional judgment and technical skills despite navigating severe cultural and manpower challenges, and inferential testing showed that only sex significantly influenced overall competency while the weak, non-significant correlation between contextual challenges and assessment competence confirmed that triage nurses maintain stable clinical performance through effective coping strategies and adherence to standardized protocols even under intense environmental and systemic pressures.

SUMMARY

The study examined the assessment competencies and contextual challenges of 44 triage nurses in a Saudi Arabian general hospital. Findings showed that the nurses were mature, highly experienced, and demonstrated strong competencies in both assessment skills and professional judgment. Despite this, they faced substantial contextual challenges, particularly cultural factors and manpower limitations. No significant relationships were found between most demographic variables and competency levels, except for sex, and overall challenges did not diminish nurses' clinical competency in demanding environments.

CONCLUSIONS

Triage nurses demonstrated consistently high assessment competence across both practical skills and professional judgment despite severe cultural, manpower, facility, and linguistic challenges. Demographic and professional factors showed no meaningful influence on competency aside from sex, indicating that triage capacity remains a stable professional trait, and that clinicians effectively maintain accuracy and patient safety even under intense systemic stress.

RECOMMENDATIONS

The study recommends strengthening triage performance through continuous professional development for nurses, improved staffing and resource allocation by administrators, enhanced cultural and communication training in nursing education, targeted operational policies to reduce environmental barriers, and expanded multi-center research to deepen understanding of real-time decision-making.

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AI DECLARATION STATEMENT

The authors declare that the artificial intelligence (AI)-assisted tools were used solely to support language editing, grammar checking, organization of written content and improvement of clarity in the manuscript. AI tools were not used to generate, fabricate, manipulate, or alter research data, statistical results, participant responses, references, or study findings.

All research procedures, data collection, data analysis, interpretation of results, conclusions and recommendations were conducted and verified by the authors. The authors accept full responsibility for the accuracy, originality, ethical integrity and final content of this manuscript.

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