

USING SIMULATION TO ASSESS THE IMPACT OF TRIAGE INTERRUPTIONS



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Contribution to Emergency Nursing Practice

- This research is innovative because simulation has not previously been used to assess the impact of interruptions on triage.
- Emergency nurse educators could use the methods and results discussed in this project to guide departmental training of triage nurses.
- Practicing in a simulated setting can help new triage nurses hone their skills at managing interruptions while providing veteran triage nurses with ways to recognize factors that are affecting the accuracy of their triage.

Abstract

Introduction: Interruptions are common in the emergency department and contribute to catastrophic errors. Care priorities and acuity levels are assigned during triage, meaning that mistakes and omissions during the triage process could have detrimental effects on patients. The purpose of this project was to assess the feasibility of investigating the impact of interruptions on triage and the decision-making process in a simulated setting.

Methods: A 2-phase, sequential exploratory mixed method design was used. Nine nurses from 3 emergency departments in a Midwest area participated. A short demographic questionnaire

was used to collect information about the nurses' education and experience. The Emergency Severity Index (ESI) was used for triage categorization. Each participant completed 2 scenarios (one interrupted and one uninterrupted). After completion of the scenarios, video-simulated recall interviews were used to assess the simulation experience and the impact that interruptions had on the triage decision-making process.

Results: Triage time had a mean of 10 minutes and ranged between 4.34 minutes and 13.45 minutes. However, triage was significantly longer during the interrupted scenarios. Seventy-seven percent of the acuity assessments (ESI) were correct. Of the 18 scenarios, 3 uninterrupted scenarios had incorrect ESI scores, and one interrupted scenario had a missing acuity score.

Discussion: This study provides the basis for future work that looks at how nurses successfully manage interruptions and tests interventions to assist triage nurses in managing or reducing interruptions during this important patient assessment process.

Key words: Triage; Interruptions; Distractions; Emergency department; Triage nurse role; Simulation; Video-simulated recall interviews

Almost 100,000 deaths per year are attributed to health care-related errors.^{1,2} Interruptions have been identified as a cause of errors and can be

detrimental to patient safety.^{1,2} Frequently the care provided during ED visits is interrupted.^{3,4} One particular area that is fraught with interruptions is the triage process, and thus this part of the patient's ED experience is particularly vulnerable to errors.⁵⁻⁷

With annual ED visits increasing to more than 130 million per year,⁸ triage nurses are pressured to quickly and accurately assess each patient. Triage assessment, defined as assigning acuity to patients to determine treatment priority, is the critical beginning of the treatment plan for ED patients. The initial triage assessment can affect both the ED visit quality and length.⁵ Because of the nature of the emergency department, nurses are exposed to frequent interruptions, which may lead to inaccuracies in acuity assessment, thus resulting in errors that may affect the quality of care.⁶ Although errors and delays adversely affect patient outcomes,⁹

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the true impact of triage interruptions on patients' clinical outcomes is unknown because few studies have investigated this phenomenon. The purpose of this research was to determine the feasibility of using a simulated setting to investigate the impact of interruptions and how triage nurses make data-based decisions in the presence of interruptions.

Background and Significance

The triage nurse's assessment of a patient is an important first step in an episode of care and can be an indicator of how the patient's ED experience will progress.⁵ Interruptions may lead to an incorrect triage decision, missed symptom identification, incomplete assessment, or unasked questions. Any of these factors could potentially delay care, resulting in significant morbidity or mortality.^{10,11} A patient seeking treatment may have a triage interview interrupted for myriad reasons that include addressing the needs of other patients, visitors, or staff. The interruptions then create delays in getting patients into a treatment area, keep nurses from collecting appropriate triage data, or cause nurses to make poor or erroneous triage decisions.¹²⁻¹⁴ Errors during triage can decrease quality of care and have an adverse impact on patient outcomes.^{1,9,10}

ED INTERRUPTIONS

The release of the Institute of Medicine report "Hospital-Based Emergency Care: At the Breaking Point" alerted the public that interruptions were one of the challenges contributing to the struggle to provide high-quality emergency care to patients.¹⁵ Interruptions have been shown to occur more often in emergency care than in other health care settings.^{6,7,13} Additionally, interruptions of ED providers have been linked to both errors and delays in patient care.^{12,16} The results of a prospective time-and-motion study showed that emergency physicians were interrupted 6.6 times per hour and that the interruptions were associated with a significant increase in the time required to complete tasks such as writing orders, dictating notes, or assessing patients; providers failed to return to the original task 18.5% of the time.¹⁰ Another study reported that physicians and nurses failed to return to task once interrupted 13% of the time.³ Generalizing the results of these studies is difficult, primarily because the categorization of interruptions and the target of observation varied. It becomes clear that reducing medical errors, as well as improving the efficiency and quality of care, can be accomplished by tackling the underlying causes of interruptions.¹³ Unfortunately, few prior studies on interruptions have considered the importance of the triage process. Given that triage begins the sequence of clinical care events,

sets priorities for the treatment team, and also begins the health care customer experience, it stands to reason that the triage process should be a primary target for intervention. To best design an improvement intervention, understanding the effect of triage interruptions on the quality of health care is vital.^{5,17}

TRIAGE INTERRUPTIONS

Previous work by Johnson et al⁵ identified the types and frequency of interruptions that occur during the triage process. These investigators reported that triage nurses were interrupted an average of 16.6 times per shift for a variety of reasons; top occurrences included being asked to grant ED access to staff and visitors, being asked to furnish conveniences to visitors (eg, a cup of water or a blanket) 13.2 times per shift, responding to patient care-related requirements (eg, new patient arrivals and leaving the triage area for missing supplies) 8.1 times per shift, and responding to patients or family who ask, "How much longer?" 7.1 times per shift.⁵ Recurrent interruptions have been shown to interfere with triage tasks that may affect patient care.^{5,17}

Methods

DESIGN

We used a 2-phase, sequential exploratory mixed methods design¹⁸ to investigate the impact of interruptions on the triage assessment process. Mixed methods designs allow researchers to gain dynamic insight into phenomena by combining the strengths of quantitative and qualitative methods. Our study included a quantitative arm in which we used an observational immersive simulation design (Phase I) followed by a qualitative arm in which we used a qualitative descriptive approach (Phase II). In phase I, study participants conducted simulated, video-recorded triage assessments on standardized patients using 2 scripted scenarios. One scenario included interruptions at predetermined time points, whereas the other scenario was uninterrupted. This design allowed us to observe how select interruptions specifically affect triage accuracy and determine how participants reacted to these interruptions as they occurred. Although participants were aware that the patients were actors, they were given no details about the scripts, including assigned diagnoses. In phase II, we conducted video-simulated recall interviews (VSRI) in which the participants were shown their simulated triage videos and were interviewed to explore their experiences and decision making during the 2 scenarios. VSRI has been shown to produce useful and insightful data for examining the way people experience a specific event.¹⁹ We received

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