

DECISION FATIGUE AMONG EMERGENCY NURSES AND ITS IMPACT ON TRIAGE ACCURACY AND CLINICAL PRIORITIZATION

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Abstract

Decision fatigue is a phenomenon that affects individuals who must make numerous decisions over long periods of time. In emergency care, the volume, frequency, and rapid pace of decision making, coupled with environmental stressors, can collectively lead to a decrease in decision quality over time. This literature review assesses the impact of decision fatigue on triage accuracy and clinical prioritization in emergency departments. Emergency nurses are among the first healthcare professionals to interact with patients and collect preliminary assessment data. Triage nurses are expected to assign triage categories and indicate clinical priority as part of the initial assessment. Mitigating decision fatigue during this crucial period could improve triage performance, assuring appropriate care, timely interventions, and optimal patient flow.

Emergency nursing involves a demanding, fast-paced environment that generates high workload and significant mental effort. The cumulative mental effort required to continuously monitor multiple patients, identify and prioritize patient needs, and make relevant decisions influences triage performance by creating operating pressure on emergency nurses. Accordingly, triage workflow in the emergency patient journey is studied by empirically observing the scenario, identifying predominant workflow, and pinpointing triage assessment types. A conceptual framework of decision fatigue is therefore established to identify tractable components that nurses contend within their routine environment.

Keywords: decision fatigue, triage accuracy, prioritization, emergency nursing, cognitive mechanisms, environmental triggers, patient safety, resource utilization

1. Introduction

Decision fatigue—a state of decreased decision quality resulting from the mental exertion of decision-making—is increasingly recognized as relevant to emergency medicine. The emergency department (ED) presents particular challenges, as many variables influence acuity. A triage nurse, using training, experience, and knowledge associated with normal acuity variables, decides on patient acuity. Morgan et al., for example, investigated the relationship between decision fatigue and triage accuracy. Rumrill et al. found that triage prioritization tended to deteriorate during fatigue but was affected by variables such as the shift worked, capacity pressure, environmental interruptions, and crowding. Decision fatigue theory defines the process of decision-making as involving stages of predecisional, decisional, and Postdecisional activity. The interaction between triage accuracy, decision fatigue, and prioritization has been little studied in the emergent nursing literature.

This study investigates the relationships between decision fatigue and triage accuracy, and between decision fatigue and prioritization. It draws on the theoretical literature on decision fatigue and triage processes to hypothesize that 1) decision fatigue increases the likelihood of accuracy errors during ED triage, and 2) decision fatigue increases the likelihood of misprioritization during ED triage. A further issue is determining the operational factors that moderate, mediate, or range in their relationship with triage accuracy and decision fatigue. Evans and Sanderson categorize these into three groups: 1) characteristic moderators, 2) additional moderators, and 3) mediators. Corr et al. demonstrate that triage retries familiar as a triage mechanism can alleviate decision fatigue. Examination of the underlying processes of decision fatigue and triage accommodates two additional hypotheses. 3a) Cognitive load and inhibition act as mediators in the influence of decision fatigue on triage accuracy, and 3b) environmental complexity and intra-shift interruptions constitute additional moderators (Yadav et al., 2023).

2. Conceptual Framework

Decision fatigue has been conceptualized in both cognitive and affective terms. Most cognitive models draw on standards of executive control, which encompass key functions such as working memory, attention modulation, inhibitory control, and cognitive flexibility (Nino et al., 2020). Some authors specify that cognitive control is exerted at two levels, tracking ongoing behaviours and monitoring changes in environmental demands throughout the day. Affective models stress the influence of moods and feelings, positing that prior decisions impact the attractiveness of subsequent options and that decision-makers systematically demonstrate less enthusiasm toward alternatives considered later in a sequence (Wang et al., 2022). The phenomenology of fatigue is often reported to consist of feelings of frustration, irritation, or a desire to call it a day, and energy is understood as a critical resource for pursuing goals and making decisions (Ulen et al., 2021).

Triage typically involves a sequence of three core steps that can be related to these cognitive functions. Initially, clinicians ascertain vital information to determine the urgency of patient conditions. A working memory component thus operates throughout this stage, when additional information and previous experiences are integrated into judgments of seriousness. Next, these evaluations of urgency are reviewed to identify appropriate disposition pathways, linking triage to cognitive flexibility and attention modulation. Finally, there is an overarching control aspect of the decision, in which multiple problems are weighed to yield a prioritization across presentations. Because these first two steps are crucial for productivity in triage, two cognitive and two affective mediators are expected to impact productivity at that stage and account for the observed relationship between fatigue and prioritization. Environmental context is also anticipated to moderate the influence of fatigue on triage and prioritization; for example, longer shifts lead to more significant breaks in the data stream and greater drops in performance (Pusic et al., 2007).

3. The Emergency Department Context and Triage Process

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3. The Emergency Department Context and Triage Process

Emergency departments (EDs) represent a unique working environment characterized by continual high-pressure demands, rapid and unpredictable patient-flow rates, and technology-rich systems that support clinical decision-making. The triage process provides preliminary patient assessment and directs patients to the most appropriate resources in response to their presenting complaints, history, and clinical findings (Pusic et al., 2007). Triage aims to ensure that patients who require emergency treatment receive care at the earliest opportunity, and these principles are reflected in triage categories, the very first response to a patient in the ED, and institutional guidelines that govern the assignment of triage categories. Adherence to institutional guidelines is a critical component of effective triage and ensures that accurate triage categories are assigned on each patient encounter.

The prioritization of patients at the triage phase in EDs, to ensure patients with the highest clinical needs are seen first, is typically governed by a combination of historical and system factors. Clinically, prioritization is influenced by etiology-based considerations (type) and extent-based judgments (degree). Within emergency nursing, a conceptual framework assigns predictive factors of triage accuracy to three “T” classes: time (waiting), task (actions), and training (appropriate use of hierarchical protocols). In the emergency setting, accuracy of both triage and prioritization is paramount as these critically affect patient safety, care pathway compliance, and delays (including those to presentation, assessment, and therapy commencement), all of which carry considerable financial penalties.

4. Mechanisms of Decision Fatigue in Nursing Practice

Decision fatigue refers to a decline in the quality of decisions made after a long session of decision-making. This phenomenon occurs because the brain has a limited pool of mental resources available to it. When these resources are depleted, there is a reduced ability to make optimal decisions that fulfill particular goals. Decision fatigue is significant in the area of nursing. Emergency departments (EDs) in the United States remain overstressed. Structural inadequacies challenge emergency nurses in emergency department (ED) triage, potentially compromising patient safety. Triage is a sequential decision-making process wherein key attributes of incoming patients are assessed and prioritized and is an essential first step in emergency care delivery. Triage is thus expected to be vulnerable to decision fatigue.

Decision fatigue possesses certain mechanisms in nursing practice. First, extensive clinical responsibilities before triage constrain working memory, inhibiting effective information retention and compromise triage quality. This is exacerbated at high volumetric inputs during sustained ED operation. Second, a prolonged decision-making sequence has the potential to deteriorate triage quality by impairing the execution of auxiliary decisions with low informational content (such as simply recording clinical data). Third, psychological factors—such as positive and negative feeling, mood, and stress perception—may interfere with triage consideration (Yadav et al., 2023). Finally, environmental triggers such as crowded wards, lengthened shifts, overloaded data, and frequent interruption lessen triage decision capacity (Nasa & Abdul Majeed, 2023).

5. Empirical Evidence Linking Decision Fatigue to Triage Performance

A limited number of studies have attempted to link decision fatigue directly to triage performance, focusing on different fatigue measures and measuring triage either simultaneously or in separate sessions. One investigation employed an experimental design where participants viewed short video clips of emergency cases and then executed a triage decision on a corresponding screen. Decision fatigue was assessed via an index combining self-reported exertion and an indirect proxy derived from medians of reaction time and variability in the choice phase of the intervention. Analysis of paired cases indicated a significant association between decision fatigue and triage accuracy, with 80% of the total explained variance attributable to the fatigue variable. These findings echoed previous research on decision fatigue and triage in the wider clinical literature (Yadav et al., 2023).

Decision fatigue has also been correlated with indicator-based measures of emergency-nursing triage efficiency drawn from routine clinical activity data. A longitudinal observational study on clinical records and personnel schedules from a large tertiary hospital analysed variations in acute-care triage arrivals, assignments, and outcomes over approximately two years. Fatigue was operationalized by hourly staff departures throughout the 12-hour shift, capturing cumulative engagement levels. The results showed that triage-prioritization errors increased significantly following initial periods of lower activity, and misprioritization rates of critical, urgent, and semi-urgent assignments exhibited the same trend. Nevertheless, triage-readiness indicators varied markedly across individuals, indicating that while temporal patterns represented a relevant factor, they did not constitute the sole determinants of overall fatigue (Charles Schneider, 2019).

6. Consequences for Patient Safety and Outcomes

Impaired triage performance may lead to inappropriate escalation or de-escalation of care, delays in treatment, and adverse events; these effects have been linked to active and passive errors, particularly during high-acuity presentations (Yadav et al., 2023). Delays due to triage misprioritization, in turn, compromise patient flow through the ED, further aggravating congestion and prolonging wait times.

Triage category assignment constitutes a gatekeeping function that determines patient management and influences clinical decision-making. Under-triaged patients may experience increased time to first physician evaluation, longer time to therapy, more physical deterioration, and higher odds of admission to an intensive care unit compared with over-triaged patients. Inappropriate downgrading of triage severity can lead to suboptimal clinician prioritization of assessment and potentially greater patient harm.

7. Interventions to Mitigate Decision Fatigue

Improvements to emergency department (ED) workflow and triage processes may mitigate decision fatigue. Strategies to consider include redirection of existing workload or resources, the use of decision aids as an adjunct to intuitive clinical reasoning, and design of enhanced triage checklists to better meet guidance on admissibility for more than one triage category. Early breaks in the work shift, shortening of shifts, and staff rotation also have been suggested as ways to manage domiciliary assignments and overlapping requests. Finally, interventions that target the

cognitive load imposed by the healthcare environment may be appropriate, such as minimisation of distracting stimuli and avoidance of interruption during triaging tasks (Yadav et al., 2023) ; (Nasa & Abdul Majeed, 2023).

8. Methodological Considerations in Studying Triage Fatigue

Decision fatigue refers to the deteriorating quality of decisions made by a person following a long session of decision making . The emergency department (ED) is a notable setting for decision fatigue because of the emphasis on multilevel and high-acuity patient response with increased frequency of interruption and distraction, compounding cognitive load. Outside of ED work hours, the presense of patient chaos in hospital wards or idle waiting in outpatient clinic may also contribute to the construction of a more robust understanding of decision fatigue.

Triage fatigue is defined as the diminished capacity to make effective triage decisions after excessive engagement in triage behaviour (Charles Schneider, 2019). Decision fatigue and triage fatigue are linked through cognitive, physiological, and psychological mechanisms. Cognitive mechanism underlies these fatigue types include executive function, working memory, and inhibitory control. Physiological mechanisms relevant to fatigue include arousal level, fatigue level, psychomotor speed, and performance variability. Psychological factors affecting decision types are mood, perception of time, distraction, and information overload (Pusic et al., 2007).

Decision fatigue and triage fatigue extend beyond the individual to the organisational level. Work practices encouraging concurrent multi-tasking govern the behaviour of nurses to manage high yields of patient service through triage appointments. Hospital-wide ED and other facilities activity also trigger decision to participate in triage through urgency. A significant amount of patient triage occurs in an opportunity window after the beginning of an engagement and exhibits a fast exponential decrease. When fatigue builds up due to triaging, rush activity in other facilities prompts further triage despite time lapse.

9. Implications for Policy and Practice

Emergency departments (EDs) face unprecedented challenges. Strained resources hinder care access, lengthen wait times, and lower the quality of essential patient evaluations and triage. Important decisions, closely tied to shifts in patient condition or hospital status, multiply under time pressure.

The commitment to patient welfare creates a duty of care and corresponding demand for consideration of all relevant facts. A nurse immediately must ascertain which triage category to assign upon seeing an incoming patient. Given the constant flow of patients, the time allowed for thoughtful deliberation is short; the range of facts requiring consideration is vast. Accurately predicting subsequent deterioration and the impact of an interposing visit for another patient represent additional complexities.

10. Ethical Considerations

Decision fatigue is a phenomenon believed to increase the rate of errors in health care settings, especially in conditions of high cognitive load or high-stakes environments (Yadav et al., 2023). Research also indicates that as the workweek progresses and the number of patients seen during a shift increases, health care professionals become more fatigued and are more likely to make errors

(Nasa & Abdul Majeed, 2023). Emergency department nurses make complex decisions throughout their shifts, which may impact triage accuracy and clinical prioritisation, as their roles within EDs require the continual prioritisation of incoming patients upon presentation. Understanding the potential for decision fatigue influences in the nursing setting and its possible link to the triaging process is crucial for improving patient safety.

Ethical research on decision fatigue in emergency medicine presents numerous challenges. Considering the significant concern over the impact of decision fatigue on clinical outcomes and its direct implications for patient safety, especially as it relates to an increased potential for errors in triage and clinical prioritisation, the need for research to examine these influences on ED triage under strictly controlled conditions remains. Addressing patient rights and duty-of-care issues becomes vital for protecting patient safety when comparing triage messages under fatigue for university-sponsored research. Given that formal ethical consideration beyond securing local site approval has yet to occur, developing a complete representation of the dilemmas and accompanying consultation will better facilitate assessment by institutional review boards.

Sustaining accurate triaging and appropriate clinical prioritisation depends on maintaining effective decision-making throughout the entire nursing shift. Developing greater insight into the possibility that additional cumulative triaging-related influences affect the quality of emergency departmental decision-making will thus assist further exploration of these topics.

11. Conclusion

Emergency triage is a crucial function that requires accurate assessment of the immediate medical needs of patients in a crowded environment (Yadav et al., 2023). Decision fatigue is a psychological phenomenon that refers to the deterioration in the quality of decisions after a long period of decision-making. It is rooted in the idea that, as individuals make choices and decisions throughout the day, mental and emotional resources become depleted. The presence of decision fatigue among health providers has significant implications for both physician well-being and patient care. Although the concept has garnered attention in healthcare, especially in emergency medicine, the effect of decision fatigue on clinical decision quality remains uncertain, with some studies showing a correlation between decision load and fatigue, while others find no clear relationship. Factors such as experience, training, and support systems may mitigate decision fatigue.

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