

# Experiences of Registered Nurses in Overcrowded Emergency Departments: A Qualitative Study

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## Abstract

**Background:** Overcrowding in emergency departments (EDs) is a significant global issue, impacting patients, staff, and healthcare systems. Understanding the dynamics of ED overcrowding can lead to better strategies for managing and resolving these challenges.

**Aim:** This study aimed to explore the experiences of ED nurses concerning the causes, effects, and solutions for ED overcrowding.

**Methods:** This qualitative study was conducted through in-depth interviews with 27 nurses from the EDs of three tertiary hospitals. Participants shared their experiences related to ED overcrowding. The interviews were recorded, transcribed, and analyzed using qualitative content analysis, adhering to the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

**Results:** Participant ages ranged from 23 to 44 years (average age of 33.4), with an average of 7.8 years (ranging from 2 to 25 years) in emergency nursing. Additionally, 85.1% of the participants held undergraduate degrees. The content analysis identified three themes and 11 sub-themes, reflecting the nurses' experiences with ED overcrowding. These themes included factors contributing to overcrowding, the consequences of such overcrowding, and proposed solutions.

**Conclusion:** The study highlighted various causes and consequences of ED overcrowding as identified by nursing staff, alongside suggestions for addressing these issues. It was determined that strategies should be developed to address the causes of overcrowding. Furthermore, institutions and governmental bodies must implement necessary measures to mitigate its adverse effects.

**Keywords:** Emergencies, emergency nursing, qualitative research

## Introduction

Emergency departments (ED), which provide continuous service, are crucial for managing numerous acute conditions, including traffic accidents, impaired consciousness, and various injuries.<sup>1</sup> Overcrowding in EDs has become a global concern and is considered an international crisis that compromises the quality of healthcare services.<sup>2</sup> In Türkiye, it was estimated that approximately four million patients would be admitted to tertiary hospitals between 2020 and 2024.<sup>3</sup> Furthermore, admissions to all EDs in the country increased to 129.5 million by the end of 2021. It was also reported that visits to outpatient clinics decreased from 199.5 million to 136.9 million in 2021. This indicates that, in Türkiye, the number of people seeking care at EDs in a year is nearly twice the country's population.<sup>4</sup> Studies from various countries have shown that EDs operate at capacities ranging from 50% to 68%.<sup>5</sup> One significant cause of ED overcrowding is the insufficient bed capacity in inpatient units and the extended lengths of stay for patients in the ED.<sup>6</sup> Additionally, a study from Israel highlighted that the presence of numerous patient companions in the ED disrupts workflow and causes overcrowding.<sup>7</sup> Other factors include unnecessary and repeated admissions to the ED and poor coordination between hospitals in the region.<sup>8</sup> Overcrowding in the ED leads to unnecessary waiting times for patients, compromises the safety and quality of care,<sup>9</sup> delays treatment, increases adverse events,<sup>10</sup> and indirectly affects patient mortality rates.<sup>11</sup> A specific study found that increased ED occupancy rates extended patient waiting times by 25%, reducing the quality of care and patient satisfaction.<sup>12</sup>

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In Türkiye, regulations mandate that all ED visits, including those made through the 112 emergency call center, must be accepted.<sup>13</sup> Consequently, overcrowding in EDs is a constant issue, directly or indirectly impacting nursing practices.<sup>14</sup> This confusion hinders effective communication among ED nurses and other health-care professionals, leading to inefficient use of nurses' time.<sup>9</sup> Furthermore, it leads to delays in situations requiring urgent and rapid intervention, such as increased medical errors,<sup>15</sup> decreased patient satisfaction with nursing care, and threatened patient safety.<sup>14</sup> Following this intense pressure, ED nurses encounter numerous problems, including decreased productivity and effectiveness, heightened psychological issues like anxiety and depression, diminished job satisfaction, burnout, and fatigue.<sup>15</sup> Indirectly, overcrowding in the ED also impacts the national economy by incurring unnecessary costs.<sup>8</sup>

There are qualitative studies employing an interpretative phenomenological approach to understand ED overcrowding from different countries.<sup>17-18</sup> However, in a meta-analysis of 5,766 studies on the causes, consequences, and solutions to ED overcrowding, no data from Türkiye were found.<sup>14</sup> Upon reviewing the literature, only a limited number of studies on ED crowding were identified, conducted either with patients<sup>19</sup> or nurses through questionnaire-based studies.<sup>20</sup> A tertiary hospital in Türkiye, witnessing up to approximately 1,000 ED admissions per day,<sup>8</sup> demonstrates that listening in-depth to ED nurses and understanding their experiences is an effective method for identifying the root causes of ED crowding and proposing solutions to this chaotic environment.<sup>21</sup> Moreover, there is scant information about the ED crowding experiences of Turkish nurses. Given this context, the study aims to deeply understand the experiences of Turkish nurses concerning the causes, consequences, and solutions to ED overcrowding.

### Research Questions

1. What are the causes of ED overcrowding?
2. What are the consequences of ED overcrowding?
3. What are your suggestions for solutions to ED overcrowding?

## Materials and Methods

### Study Design

This study utilized Polit and Beck's<sup>22</sup> descriptive qualitative methodology to provide a comprehensive understanding of the ED overcrowding phenomenon. The study was conducted in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) framework.<sup>23</sup>

### Setting and Participants

Three tertiary care hospitals located in the central and southern regions of Türkiye were selected for their accessibility to the researcher. The study was conducted in the EDs of these hospitals between March and June 2023. As per Polit and Beck (2008), participants were required to be in a specific clinical setting.<sup>22</sup>

Nurses who had been actively working in the ED for at least two years and who volunteered were eligible for inclusion in the study. Nurses were invited to participate in the study based on the ED's level of activity. A purposeful sampling method was employed to select participants. Data saturation was reached after interviewing 27 ED nurses,<sup>22</sup> at which point the research was concluded.

### Data Collection Tools

Data were gathered using the "Introductory Information Form," which was designed based on relevant literature,<sup>16-18</sup> and a "Semi-Structured Interview Form," due to the lack of a valid and reliable standardized instrument for the Turkish population regarding ED overcrowding. The "Descriptive Information Form" solicited details such as age, gender, length of employment, and educational background. Each interview commenced with a self-introduction by the interviewer and the opening question, "What are your thoughts on ED overcrowding?" This was followed by, "Can you share your experiences related to this issue?" The Semi-Structured Interview Form included questions like, "What do you believe is the cause of overcrowding in the ED?", "Can you describe any specific events that caused ED overcrowding, which you've experienced or remember?", "What effects do you believe ED crowding leads to?", "What problems or disruptions have you encountered, and how did it make you feel?", "What are your recommendations for addressing ED crowding?" and "What actions could mitigate or eliminate the problems/disruptions experienced?" The development of the data collection tool was informed by the feedback from five researchers (including three surgical nursing specialists and two ED physicians) besides the authors. Additional questions were posed to participants as needed. Participants were anonymized using initials from their respective provinces (e.g., Adana [A1, etc.], Kayseri [K1, etc.], Yozgat [Y1, etc.]).

### Data Collection

The purpose, scope, and expected duration of the study were explained to the clinic's supervising nurses, who then communicated the information to their teams. Prior to the interviews, participants were briefed on the study's objectives and informed that the sessions would be audio-recorded. Both verbal and written consents were obtained. The supervising nurse arranged for a quiet and comfortable setting for the interviews. During the sessions, therapeutic communication techniques were employed to encourage and motivate participants to express themselves freely. The interviews, conducted by the researcher, were audio-recorded, lasted between 35 to 45 minutes on average, and the researcher took notes as needed. Care was taken that participants' post-interview feedback was included in the study.

### Data Analysis

Interviews were conducted by two researchers, during which audio recordings and notes were made and later transcribed verbatim into written text. Participants confirmed the accuracy of these transcriptions by reviewing the text. The written text was then compiled into a report, which underwent content analysis as defined by Krippendorff.<sup>24</sup> Initially, the report was meticulously reviewed to identify patterns, which were coded and categorized according to the study's research questions. Codes with similar content were grouped into categories, leading to the identification of three themes and 11 sub-themes, based on latent content analysis. To enhance the research's verifiability, two senior researchers were consulted to discuss the data content analysis and findings. The reliability of the analysis was secured through repeated verification of the original texts. At each step of the analysis process, discussions were held with a senior researcher to address any inconsistencies. The process continued with the researcher and senior researchers until a consensus was achieved. Transcriptions, codes, sub-themes, and themes

were ratified by both the authors and invited researchers to authenticate the coding process. Moreover, codes were presented to and confirmed by three participants to verify the data's reliability.

### Trustworthiness

Lincoln and Guba<sup>25</sup> identified four criteria—credibility, reliability, confirmability, and transferability—to establish trustworthiness in qualitative research. This study adhered to these Lincoln and Guba criteria to ensure its reliability. To enhance the accuracy of the report generated from the in-depth interviews, it was reviewed again with the participants. Reliability was further supported by revisiting and discussing transcriptions as needed. To guarantee precision and resolve any discrepancies, two senior researchers—academics with a higher degree of expertise in qualitative research than the authors—were consulted to review the findings from the data content analysis as a final measure. The transcriptions, codes, sub-themes, and themes were validated by the authors and invited researchers, ensuring the coding process's authenticity. To enhance the transferability of the research findings, literature support was sought for the codes, sub-themes, and themes.

### Ethical Considerations

Written institutional permission was obtained from the institutions located in three different regions of Adana, Türkiye in Southern Region, Kayseri, and Yozgat in Inner Region. This study was approved by the Yozgat Bozok University Ethics Committee (Approval Number: 02/08, Date: 22.02.2023). Informed consent was secured from all participants on a voluntary basis before conducting the interviews. The study was performed in alignment with the principles of the Declaration of Helsinki (WTB General Assembly, Fortaleza, Brazil, October 2013) and the Law on Medical Research Involving Human Subjects. During data collection, participants were assigned numbers

to ensure confidentiality and privacy. The records were secured in a locked cabinet in the first author's archive.

## Results

The nurses' ages ranged from 23 to 44 years, with a mean age of  $33.4 \pm 7.9$ . Fifty-nine percent were female. They had worked in the ED for an average of  $7.8 \pm 6.6$  years, with a median of 5 years (ranging from 2 to 25 years), and 85.1% held a bachelor's degree. Interviews were conducted with eight nurses from a public hospital in the inner region of the country, nine nurses from another public hospital, and 10 nurses from a university hospital in the south, totaling 27 nurses. The content analysis of the interviews revealed three themes and 11 sub-themes: "Experiences with Contributing Factors to Overcrowding," "Experiences Resulting from ED Overcrowding," and "Suggestions for Resolving Overcrowding" (Figure 1).

### Theme 1: Experiences with Contributing Factors to Overcrowding

#### Sub-theme 1: Inappropriate Admission of Patients to the ED

Almost all nurses (21) described incidents where patients sought care in the ED inappropriately. Specifically, they cited reasons such as arriving too late for the outpatient clinic and thus missing the queue, unwillingness to wait in line at the outpatient clinic, asserting privileges by claiming to be relatives of the hospital manager and asking for immediate tests or treatments, and requests for basic services like temperature checks. These practices significantly increased the daily patient volume. Additionally, a few nurses (5) noted that the presence of numerous relatives with patients further exacerbated ED overcrowding. Nurses shared the following insights:

*"Patients come to the outpatient clinic too late and therefore find themselves without an appointment. Especially in the morning hours, towards the end of our shift, the ED becomes terrifying."*

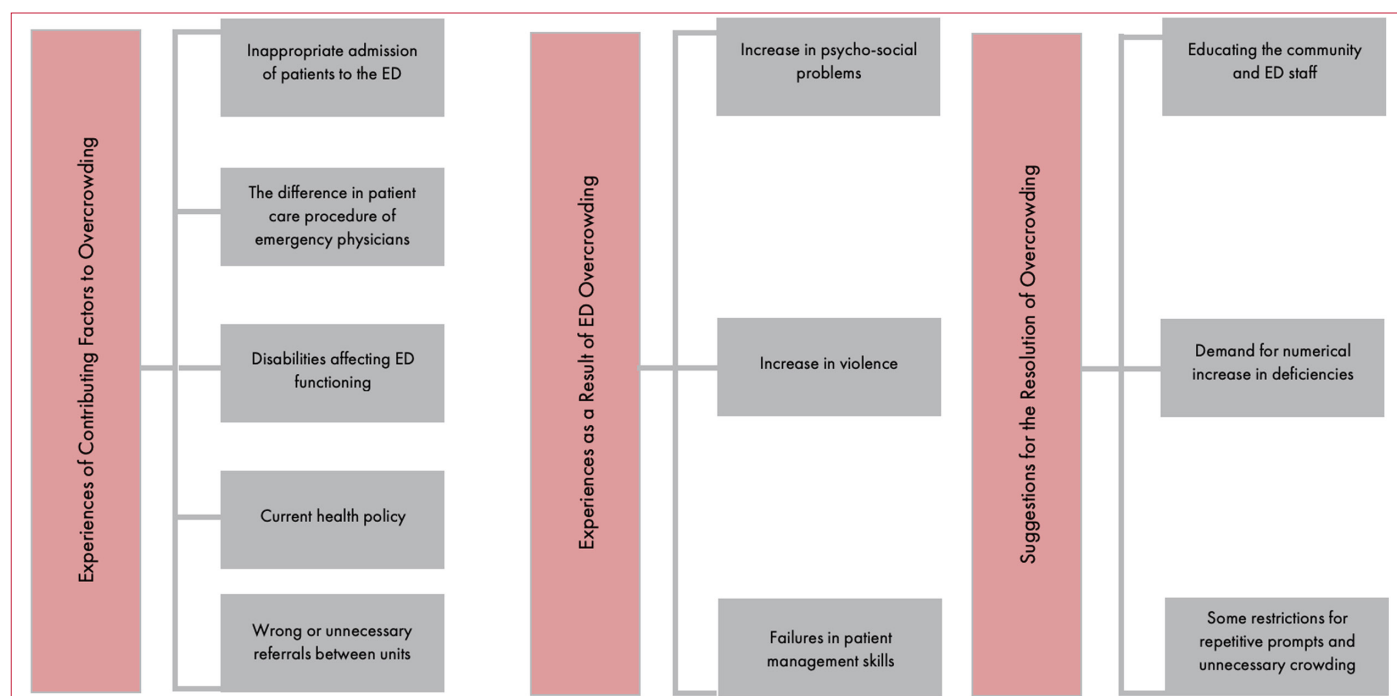


Figure 1. Theme and sub-theme.

*We want to finish our shift and go home as soon as possible.” (Participant 11, K3)*

*“The number of patients coming in for injections or just wanting a pregnancy test is endless... We see individuals who, after disputes with their spouses and unable to sleep, seek help in the emergency department, those addicted to drugs like pethidine requesting medication, and many other unusual cases in the ED...” (Participant 7, Y7)*

### Sub-theme 2: Difference in Patient Care Procedure Among Emergency Physicians

Six nurses noted that patients often wait for the results of unnecessary examinations and orders, especially due to the overly meticulous approach of physicians new to the ED.

*“New practitioners are exhausting us. Patients pile up unnecessarily due to requests for electrocardiograms (ECG) and blood tests. Unnecessary interventions are sometimes performed on patients who should be classified as code green as though they were code yellow...” (Participant 2, Y2)*

### Sub-theme 3: Factors Impairing ED Functionality

Ten nurses mentioned that ED overcrowding is exacerbated by various factors, such as an insufficient number of personnel in both the ED and outpatient clinics, the absence of specialized emergency units, and poor coordination in the 112-command center. Some nurses further elaborated that when patients visited more than one ED, their prior examinations were often unknown, leading to repetitive tests. This not only prolonged patients' waiting times but also contributed to the overcrowding in the ED. The workload increased due to these unnecessary procedures. The management's inability to effectively limit the number of attendants was identified as another contributing factor to ED overcrowding.

*“Outpatient clinic physicians end their day after seeing 20-30 patients. The number of patients seen in the outpatient clinic should either be increased, or more outpatient clinic physicians should be hired.” (Participant 5, Y5)*

*“In some district hospitals, patients referred by the 112 emergency call center are not accepted for various reasons, causing backlogs in larger hospitals like ours. There should be an equal distribution of workload so that everyone is equally burdened.”(Participant 5, Y5)*

### Sub-theme 4: Current Health Policy

Nurses also highlighted overcrowding in the ED as a result of the country's patient admission policies. According to these regulations, health facilities are required to accept all emergency cases presented to them or brought in by ambulance, regardless of the patients' health insurance status or ability to pay. They must perform the initial evaluation and provide the necessary medical intervention.

*“I will never forget a patient who shouted, ‘You have to take care of me; I have the right to apply anywhere.’ It was the fourth ED they had visited for an upper respiratory tract infection...” (and every ED had to accept the patient) (Participant 19, A2)*

### Sub-theme 5: Inappropriate/unnecessary Referrals Between Units

Eight nurses noted that inappropriate referrals, often due to insufficient resources (such as the absence of an ultrasound device, maxillofacial surgery, or a pediatric cardiology unit), exacerbated

overcrowding. They explained that repeated tests following each referral not only increased waiting times but also imposed a financial burden on the government.

*“What are the primary health care services doing... besides writing and sending prescriptions...? During my shift, at least 100-200 patients routinely come to the ED with complaints like upper respiratory tract infections (flu) or fatigue.” (Participant 26, A9)*

### Theme 2: Experiences Resulting from ED Overcrowding

#### Sub-theme 6: Increase in Psychosocial Problems

All nurses reported that overcrowding led to increased boredom, reluctance, burnout, loss of motivation, poor performance, distraction, and both physical and psychological fatigue among ED nurses. They also emphasized that this emotional toll leads to feelings of being undervalued, disliking their profession, considering leaving their field, and experiencing a decrease in productivity and effectiveness.

*“Doctors and nurses become tired and distracted as the working hours progress, yet the volume of patient arrivals doesn't cease... This creates an inevitable vicious cycle...” (Participant 19, A2)*

A few nurses (three) shared that the pandemic affected them deeply, making them hesitant to care for patients despite taking precautions. This reluctance was exacerbated by severe working conditions, including long hours and frequent shifts, in an environment already overwhelmed by the Coronavirus Disease 2019 (COVID-19) pandemic. The statements included the following:

*“The pandemic period was difficult. Most of our colleagues contracted COVID-19 several times. While everyone else stayed at home, we continued to work under conditions even more demanding than before.” (Participant 19, A2)*

#### Sub-theme 7: Increase in Violence

Overcrowding in the ED resulted in prolonged waiting times, leading to decreased patience among patients and their relatives. ED nurses reported that the majority of the ED staff experienced either verbal and physical assaults by patients and their relatives.

*“I was attacked for prioritizing and attending to a patient having an epileptic seizure.” (Participant 14, K6)*

#### Sub-theme 8: Failures in Patient Management Skills

Around half of the nurses (13) indicated that the chaos stemming from overcrowding disrupted nursing care, led to delayed interventions, and increased the likelihood of medical errors. As a result, patient privacy during interventions was compromised, and the workload and financial burdens grew due to unnecessary procedures.

*“It takes approximately 3-4 hours to document the procedures performed on patients with chronic diseases. Depending on the outcome, additional tests are requested and the waiting time doubles. Since we do not want to keep the patient waiting, we initiate an intravenous line and administer fluid. As a result, the workload increases beyond what is necessary.” (Participant 6, Y6)*

### Theme 3: Suggestions for Resolving Overcrowding

#### Sub-theme 9: Educating the Community and ED Staff

The majority of nurses (24) highlighted the importance of educating both the community and healthcare professionals to ensure

appropriate ED utilization and to implement effective triage and patient care. They noted that while health workers receive training on triage, additional in-service training is particularly needed for some new doctors. The nurses strongly believed that education is the key to solving the problems encountered.

*"The reason for overcrowding is people applying without clear emergencies. Patients need to be educated through social media and public organizations. The concept of an emergency and the functioning of the ED should be explained to the public to raise awareness of these issues." (Participant 13, K5)*

*"New general practitioners exhaust us by ordering unnecessary tests (such as blood tests, ECGs) for patients, which causes overcrowding in the emergency room. It is necessary to increase awareness and train physicians on this matter as soon as possible..." (Participant 2, Y2)*

#### Sub-theme 10: Elimination of Deficiencies

Nurses highlighted the need for more specialized departments and an increase in the number of clinic services, addressing staff shortages, improving motivation through salary increases, and implementing additional charges for patients to deter unnecessary visits.

*"For example, a patient with a blood pressure reading of 160/100 mmHg comes to the ED complaining of a headache. The patient is assessed for internal medicine and cardiology issues in the ED. Meanwhile, blood pressure medication and analgesics are administered. After spending an average of 3-4 hours in the ED, the patient is discharged with a recommendation for cardiology outpatient follow-up... However, the same patient returns to the ED the following night... The solution lies in having a dedicated cardiology emergency department, not in our general ED." (Participant 22, A5)*

#### Sub-theme 11: Implementing Restrictions to Reduce Repeat Visits and Unnecessary Overcrowding

Nurses also stressed the need for a system that allows for the structured and easy monitoring of examinations and requests made to patients visiting the ED, reducing the number of patient attendants, and ensuring proper triage by the 112 command center.

*"When each patient is accompanied by 3-5 individuals, the ED turns into a marketplace. The only solution is to implement restrictions on companions." (Participant 7, Y7)*

### Discussion

In the research findings, three main themes and 11 sub-themes related to the phenomenon of ED overcrowding were identified. Despite working in different regions, ED nurses consistently highlighted common issues. In this study, ED nurses identified several factors that cause overcrowding, including inappropriate admissions, attitudes of physicians or administrators, insufficient staff, beds, or outpatient services, government policies, inadequate inter-agency referrals, and lack of restrictions. A primary cause of the misuse of the ED is the patients' desire for immediate care.<sup>26</sup> Other factors, such as a shortage of primary healthcare services and patients' dissatisfaction with these services,<sup>27</sup> have led to an increase in inappropriate visits.

The attitudes of administrators and physicians were also noted as significant contributors to ED overcrowding. It has been suggested

that standard models for admission, hospitalization criteria, and discharge planning should be developed to address factors that affect waiting times in the ED.<sup>28</sup> We believe that the absence of disruptions in primary healthcare services, combined with a review and reorganization of hospital systems workflows and policies to better meet the needs, will also reduce inappropriate or unnecessary referrals between units. Consistent with the findings of this study, previous research has highlighted a shortage of available beds,<sup>29</sup> and it has been observed that restricting the number of patient attendants can alleviate crowding in the ED.<sup>7</sup>

The inadequate number of nurses in the ED, along with overcrowding by patients and their relatives, poor physical conditions within the ED, and a lack of medical supplies and consumables, detrimentally affect communication between patients and nurses.<sup>30-31</sup> Studies have indicated that overcrowding in the ED not only increases the workload for nurses,<sup>20</sup> but also negatively impacts teamwork and leads to deficiencies in care services.<sup>30</sup> Moreover, due to these inadequacies and the overcrowding issue, instances of verbal and physical violence against nurses have escalated, causing increased rates of depression among ED nurses.<sup>31</sup> Most ED nurses have reported elevated stress levels, particularly when dealing with complex and critically ill patients, during overcrowding situations.<sup>29</sup> Furthermore, overcrowding poses health risks to ED nurses through the potential transmission of various diseases.<sup>32</sup> Despite being aware of the risks associated with infectious diseases and taking necessary precautions, ED nurses have reported experiencing stress while caring for infected patients.<sup>17</sup>

In a study, it was found that 520 Turkish patients who were admitted to the ED resorted to violence due to overcrowding in the ED (78.2%) and a lack of adequate information about the patient's condition (77.7%). Additionally, Turkish patients emphasized that problems could be resolved more swiftly and effortlessly if ED crowding were reduced.<sup>33</sup> ED overcrowding has frequently been linked to delays in care, diminished quality of care, and poor clinical outcomes.<sup>34</sup>

Turkish nurses working in the ED were the first to train the community and employees in addressing ED overcrowding. Similar to the current study, the necessity of education has been emphasized in numerous studies investigating the phenomenon of ED overcrowding.<sup>33</sup> Additionally, ED nurses sought support from colleagues, management, and government by sharing various ideas for alleviating ED overcrowding. Researchers have developed models, strategies, and plans for tackling ED overcrowding, a significant issue in many countries (e.g., the USA, Italy).<sup>6,10</sup>

As another important solution, participants suggested improvements in several areas, such as increasing staff numbers, outpatient services, bed availability, and wages. To ensure the appropriate utilization of human resources, it was recommended that ED nurses be assigned based on the department's needs.<sup>35</sup> Instead of merely increasing the number of beds in the emergency department, employing staff to support bed management for admissions was reported to reduce patient waiting times by 100 minutes.<sup>15</sup>

While an increase in various areas was desired, it became essential to impose restrictions on certain issues related to ED. The lack of awareness among patient relatives, physicians, and the 112 emergency call center personnel exacerbated the chaos significantly. A study that

developed a method to accelerate workflow in the emergency department highlighted that each companion extended the hospital stay by 55 minutes. Consequently, limiting the number of patient relatives was shown to reduce ED overcrowding.<sup>7</sup> Hence, we propose the creation of a web-based density map. This tool would evaluate parameters such as the number of staff in affiliated hospitals, the volume of patients admitted to emergency departments, operating room capacity, clinic and intensive care bed availability, and the presence of epidemics or natural disasters, to aid in the referral process by the 112 emergency call center.

### Limitations

This study aimed to delve into the experiences of nurses facing ED overcrowding, with findings restricted to the participants' statements. Another limitation is the study's confinement to a single institution.

### Conclusion

This study offers insights into the experiences of ED nurses coping with overcrowding, revealing that they perceive overcrowding as a cause of serious and adverse outcomes. Furthermore, it highlights their belief in addressing the root causes as a solution to mitigate these issues. The study reveals significant public misinformation regarding ED admissions and highlights the importance of staff attitudes and government policies in managing overcrowding. These findings may serve as a guide for institutions and health management to address ED overcrowding issues.

**Ethics Committee Approval:** This study was approved by the Yozgat Bozok University Ethics Committee (Approval Number: 02/08, Date: 22.02.2023).

**Informed Consent:** Informed consent was secured from all participants on a voluntary basis before conducting the interviews.

**Peer-review:** Externally peer-reviewed.

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