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ORIGINAL ARTICLE

Assessment of patients' perception of emergency in the gynecology and obstetrics emergency clinic: Is it an actual emergency? A retrospective analysis

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ABSTRACT

Objective: Emergency departments are crucial components of healthcare systems, providing rapid and effective medical services. However, unnecessary emergency visits lead to inefficiencies in resource allocation and service delivery. Pregnancy often alters women's health perceptions, increasing emergency department visits. This study aimed to evaluate the urgency of visits to the gynecology and obstetrics emergency department and analyze the impact of pregnancy on emergency service utilization.

Material and Methods: This retrospective, cross-sectional study analyzed the reasons for admission, demographic characteristics, and hospitalization rates of patients who visited the Zeynep Kamil Women and Children Diseases Training and Research Hospital between 2013 and 2023. Data were collected from the hospital automation system, categorized using ICD-10 codes, and statistically analyzed with IBM SPSS Statistics 26.0 software.

Results: A total of 174,790 emergency visits were recorded, with 69.76% involving pregnant patients. Among pregnant patients, 26.04% required hospitalization, whereas the hospitalization rate for non-pregnant patients was 8.23%. The most common reasons for emergency visits included pregnancy-related conditions (O26.8, O26.9) and pregnancy status (Z33, Z32.0). The analysis of emergency visit trends revealed a decline in 2019–2020, followed by an increase after 2021.

Conclusion: The findings suggest that gynecology and obstetrics emergency services are predominantly utilized for pregnancy-related concerns, with some visits being unnecessary. To optimize emergency department efficiency, patient education, improved outpatient services, and enhanced triage systems are recommended. Future multicenter studies should explore patient motivations and long-term health outcomes. The study recommends improving emergency service efficiency through patient education, better outpatient access, and effective triage implementation.

Keywords: Emergency service utilization, gynecology, pregnancy.

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INTRODUCTION

Emergency services constitute a vital element of healthcare systems, designed to deliver prompt and effective medical care in situations necessitating immediate intervention.[1,2] In Türkiye, as in several other countries, the overutilization of emergency services can result in service delivery disruptions and wasteful allocation of healthcare resources. Visits to emergency services, particularly in gynecology and obstetrics, hold significant relevance for the administration of emergency healthcare services. Pregnancy is a significant phase that influences women's health perceptions, leading pregnant women to assess every symptom with greater seriousness.[3] This scenario may elevate the frequency of emergency service visits among pregnant individuals and prompt an inquiry into the actual urgency of these visits. Common obstetric emergencies include preeclampsia, eclampsia, ectopic pregnancy, preterm labor, and postpartum hemorrhage, while frequent gynecologic emergencies consist of ovarian torsion, acute pelvic inflammatory disease, and severe abnormal uterine bleeding. Awareness of these conditions is essential for contextualizing patterns of emergency department utilization.[4]

This study analyzed the reasons for application, demographic characteristics, and hospitalization rates of patients presenting to the gynecology and obstetrics emergency department of a reference hospital. The impact of pregnancy on emergency department utilization was examined, comparing the emergency visit trends of pregnant and non-pregnant patients. The primary objective of the study was to assess data regarding the superfluous utilization of the emergency department and to propose recommendations for enhancing the efficacy of health service delivery. Numerous studies in the literature indicate that most presentations to gynecology and obstetrics emergency departments involve problems manageable in outpatient clinic settings. Nonetheless, insufficient data exist regarding the number of individuals seeking assistance who genuinely necessitate emergency care versus those who require observation or hospitalization. This study investigated hospitalization circumstances among pregnant and non-pregnant patients presenting to the emergency room, evaluating them based on "real emergency" criteria.

The primary research questions of the study are as follows:

- What are the demographic and clinical characteristics of patients presenting to the gynecology and obstetrics emergency department?
- How does pregnancy influence the likelihood of utilizing emergency services and the perception of what constitutes an emergency?
- What proportion of emergency department visits are classified as true emergencies?
- Are there significant differences between patients who require hospitalization and those who do not?
- What strategies can be proposed to improve the efficient use of emergency department resources?

Addressing these questions will yield critical information to enhance the efficiency of health service delivery and reduce unnecessary emergency room visits. The study's results are anticipated to aid in formulating strategies for managing obstetrics and gynecology emergency departments more effectively.

MATERIAL AND METHODS

This research is a retrospective, cross-sectional analysis assessing the demographic features, admission grounds, and urgency of patients presenting to the Gynecology and Obstetrics Emergency Department of Zeynep Kamil Women and Children Diseases Training and Research Hospital. This study was conducted with authorization from the Ethics Committee of Obstetrics and Gynecology, İstanbul, Türkiye (Approval Number: 45, Approval Date: 20.03.2024). In the study, personal data were anonymized to safeguard patient privacy and were examined in accordance with ethical guidelines.

The study analyzed all patients presenting to the emergency department, categorizing them into several groups: pregnant women, hospitalized patients, and inpatient pregnant women. The data were retrospectively examined and processed using the hospital automation system. The study utilized data extracted from the hospital's computerized health records. All patients who presented to the emergency department from 2013 to 2023 were incorporated into the study. Patients with absent or erroneous records were excluded.

The demographic data, pregnancy status, admission diagnosis, therapy administered in the emergency department, and hospitalization need were analyzed. The grounds for patient admissions and their illnesses were categorized using ICD-10 codes. The patients' hospitalization status served as the criterion for urgency evaluation. In this study, a "genuine emergency" was defined as any condition requiring immediate medical intervention, as evidenced by hospital admission, surgical procedure, or vital sign instability.

Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics 26.0 software. The following statistical methodologies were employed:

- Descriptive statistics: Number of applications, percentage distributions, mean±standard deviation.
- Pairwise comparisons: The Chi-square test and Independent Sample t-test were used to analyze the application behaviors of pregnant and non-pregnant patients.
- Regression analysis: A logistic regression model was developed to examine the factors influencing the necessity for hospitalization.
- Time series analysis: ANOVA and time-series methodologies were utilized to investigate variations in emergency application trends over the years.

Results with a $p<0.05$ were deemed statistically significant.

Ethic Approval

This study was conducted with authorization from the Ethics Committee of Zeynep Kamil Women and Children Diseases Training and Research Hospital (Approval Number: 45, Approval Date: 20.03.2024). In the study, personal data were anonymized to safeguard patient privacy and were examined in accordance with ethical guidelines. This study was conducted in accordance with the principles of the Declaration of Helsinki.

Table 1: Emergency admissions overview (2013–2023)

Category	Number	Rate (%)
Total emergency admissions	174790	
Pregnant admissions	121930	69.76
Hospitalized patients	36098	20.65
Hospitalized pregnant patients	31745	26.04

RESULTS

Table 1 presents the total number of applications to the Gynecology and Obstetrics Emergency Department of our hospital from January 2013 to December 2023, detailing the distribution between pregnant and non-pregnant patients, as well as the classification of these applications based on the necessity for hospitalization or observation. A total of 20.65% of all emergency applications resulted in hospitalization, while 26.04% of pregnancy-related applications required hospital admission. This indicates that the majority of patients presenting to the emergency department were pregnant and that most of those admitted were also pregnant.

Upon examining the emergency application behaviors of pregnant and non-pregnant patients, it was found that pregnant patients made a total of 121,930 applications, with 31,745 resulting in hospitalization. The hospitalization rate was determined to be 26.04%. The total number of applications from non-pregnant patients was 52,860, with 4,353 resulting in hospitalization. The hospitalization rate for this group was 8.23%. The data indicate that pregnant women utilized the emergency department more frequently and had a significantly higher hospitalization rate compared to non-pregnant women. The evaluation, conducted using the diagnosis codes established by the physician during the application, yielded the distribution presented in Table 2.

Additional analyses revealed that the age range of participants was between 18—45 years. The frequency of repeat hospital visits was higher among pregnant women. Surgical interventions were required in approximately 6% of hospitalized cases, and the average duration of hospital stay was 3.2±1.4 days. The most frequent clinical diagnoses included pregnancy-related conditions, urinary tract infections, and abnormal uterine bleeding.

The results indicate that pregnancy-related disorders represent a significant share of the utilization of the Gynecology and Obstetrics Emergency Department, with several patients presenting due to normal pregnancy-related processes. An examination of patient applications to the Gynecology and Obstetrics Emergency Department over the years revealed that the number of emergency visits fluctuated, with notable increases and decreases occurring during specific intervals (Fig. 1). In 2013, there were 15,432 applications, which rose to 24,678 by 2023. A decline occurred particularly between 2019 and 2020; however, applications began to rise again after 2021.

Table 2: Most common diagnoses in emergency, pregnant, and inpatient patients

Emergency diagnoses (n, %)	Count	Pregnant diagnoses (n, %)	Count	Inpatient diagnoses (n, %)	Count
Other specified pregnancy-related conditions (64.73%)	93268	Other specified pregnancy-related conditions (71.78%)	93268	Other specified pregnancy-related conditions (75.07%)	25257
Pregnancy-related condition, unspecified (10.61%)	15290	Pregnancy-related condition, unspecified (11.77%)	15290	Pregnancy-related condition, unspecified (12.42%)	4178
Gynecological examination (6.39%)	9207	Pregnancy, not yet confirmed (7.09%)	9207	Pregnancy status (3.55%)	1195
Post-surgical recovery period (3.96%)	5711	Pregnancy status (4.4%)	5711	Gynecological examination (1.77%)	595
Abnormal uterine and vaginal bleeding (3.67%)	5285	Ectopic pregnancy (3.92%)	5091	Abnormal uterine and vaginal bleeding (2.04%)	686
Pregnancy, not yet confirmed (3.53%)	5091	Threatened abortion (0.36%)	468	Pregnancy, not yet confirmed (2.06%)	692
Pregnancy status (3.48%)	5011	Twin pregnancy (0.33%)	426	Post-surgical recovery period (1.4%)	472
General examinations (1.25%)	1805	Missed miscarriage (0.17%)	220	Ectopic pregnancy (0.54%)	181
Rh incompatibility reaction (1.2%)	1725	Other ectopic pregnancy (0.11%)	143	Other pregnancy-related conditions (0.62%)	207
Acute upper respiratory infection (1.17%)	1685	Pregnancy confirmed (0.09%)	111	Ectopic pregnancy (unspecified) (0.54%)	181

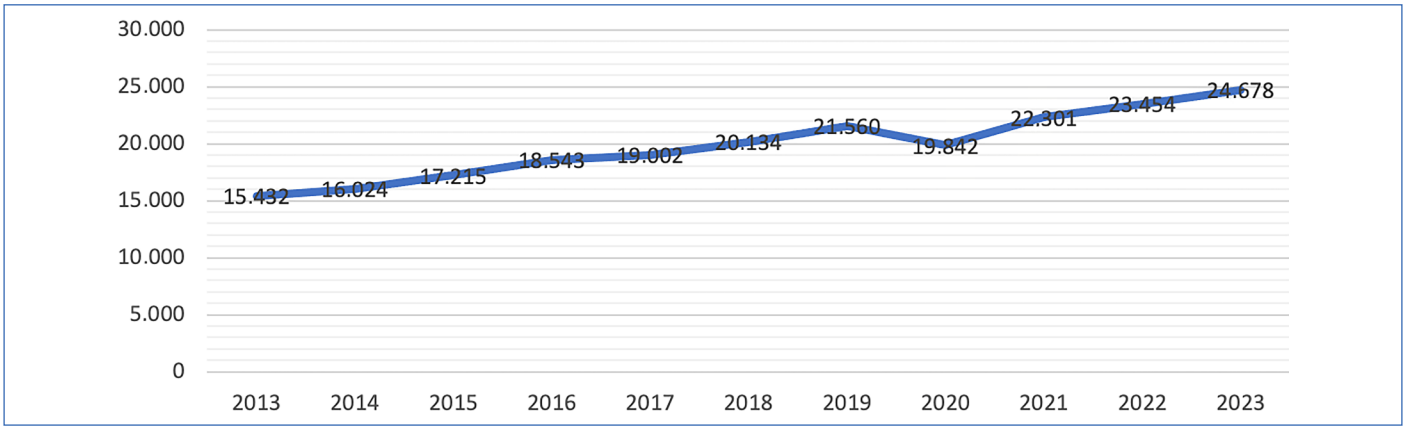

Figure 1: Yearly distribution of emergency department application figures.

DISCUSSION

This study retrospectively assessed the reasons for application, pregnancy status, and hospitalization needs of patients who presented to the Zeynep Kamil Women and Children Diseases Training and Research Hospital. The results indicate that a significant proportion of admissions to the Gynecology and Obstetrics Emergency Department pertain to pregnancy, with many cases associated with typical pregnancy processes.

The acquired statistics indicate that 69.76% of patients presenting to the Gynecology and Obstetrics Emergency Department were pregnant. The elevated frequency of emergency department visits by pregnant patients may be linked to concerns and perceived health risks associated with the pregnancy process. The literature indicates that women utilize health services more frequently during pregnancy and are more likely to assess their symptoms with greater seriousness.[4,5] This scenario may be more pronounced among women experiencing their first pregnancy. Moreover, it is believed that the physiological alterations induced by pregnancy may lead to certain symptoms being perceived as urgent.

The study revealed that 26.04% of pregnant patients presenting to the emergency room were hospitalized, compared to 8.23% of non-pregnant patients. The elevated hospitalization rates among pregnant patients suggest that problems associated with pregnancy heighten the probability of necessitating emergency intervention. The predominant diagnoses were "pregnancy-related conditions" (O26.8, O26.9) and "pregnancy status" (Z33, Z32.0), suggesting that numerous cases were non-urgent or could be addressed in outpatient settings. Comparable research indicates that a substantial fraction of obstetric emergency room visits are not classified as "genuine emergencies".[6,7] In obstetric and gynecologic practice, genuine emergencies such as preeclampsia, postpartum hemorrhage, ovarian torsion, and ruptured ectopic pregnancy require rapid intervention. The relatively low frequency of such severe cases in our cohort underscores that many visits may not represent true emergencies, highlighting the importance of triage and patient education.[8]

The rationale for patients' visits to the emergency department and their urgency was examined using ICD-10 diagnosis codes. Nonetheless, the inadequate or erroneous entry of diagnosis codes in hospital automation systems significantly impacts the accuracy of the acquired data. In the emergency department, physicians may code diagnoses rapidly due to time constraints, which can result in insufficient precision. Furthermore, in certain instances, overarching categories like generic pregnancy-related codes (e.g., O26.8 – Other specified conditions related to pregnancy) may be preferred, complicating the analysis of individual health issues. Inaccurate or insufficient coding may adversely affect the identification of genuine emergency patients, strategic planning for emergency department utilization, and decision-making in healthcare administration.

Consequently, future research should implement supplementary procedures to enhance the precision of diagnosis codes, such as manual file examination or secondary physician assessment to improve data accuracy. Furthermore, enhancing diagnosis coding training for healthcare personnel and refining diagnosis entry procedures in automated systems can augment data reliability. Unnecessary visits to emergency services are recognized to impede healthcare service delivery and result in inefficient resource utilization.[8]

The study's results indicate that patients often utilize gynecology and obstetrics emergency care for conditions that could be effectively managed in outpatient clinics. This scenario can induce superfluous congestion in emergency services, hindering patients in genuine need of immediate intervention from obtaining timely assistance. The presence of non-hospitalized patients seeking merely routine prenatal examinations or reassurance for anxiety-related concerns represents a challenge that requires consideration in health policy planning.

The examined data indicated that the volume of applications to gynecology and obstetrics emergency services varied from 2013 to 2023. The decline noted between 2019 and 2020 can be attributed to the effects of the COVID-19 pandemic. Emergency applications diminished during the pandemic due to individuals' reluctance to seek medical care and the prioritization of healthcare systems on pandemic-related issues.[9] Nonetheless, applications have risen once more after 2021. This pattern may indicate a resurgence in normal healthcare utilization as the impacts of the pandemic diminish.

CONCLUSION

The findings of this study suggest the need to develop initiatives aimed at enhancing the efficiency of gynecology and obstetrics emergency services. Educating patients about the conditions that

genuinely require emergency care may help reduce unnecessary admissions, particularly among pregnant individuals.

Enhancing outpatient clinic services: Improving the accessibility of obstetrics and gynecology outpatient clinics and optimizing appointment procedures can encourage patients to seek care in appropriate settings rather than emergency departments.

Implementing an effective triage system: Establishing and maintaining a structured triage system is essential to accurately assess the urgency of patients presenting to emergency rooms, ensuring that true emergencies receive timely and appropriate medical attention.

Statement

Ethics Committee Approval: The University of Health Sciences, Turkey. Istanbul Zeynep Kamil Women's and Children's Diseases Training and Research Hospital Ethics Committee granted approval for this study (date: 20.03.2024, number: 45).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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