ORIGINAL ARTICLE
KLİNİK ARAŞTIRMA

Pediatric emergency admission reasons and family physician admission habits of pediatric emergency patients whose emergency severity index (ESI) is 4-5

Acil ciddiyet skoru 4-5 olan çocuk acil hastalarının acile başvurma nedenleri ve aile hekimlerine başvuru alışkanlıkları

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SUMMARY

Aim: This study aimed to understand why families prefer emergency services over outpatient clinics, assess parental perceptions of illness severity, and evaluate the habits of families not regularly consulting with family physicians or dissatisfied with primary care. It was hypothesized that such families visit emergency departments more often.

Material and Methods: Parents of children aged 0–18 with an ESI score of 4–5 presenting to the Pediatric Emergency Department (ED) between 16:30 and 08:00 were included. Data were collected via a 10-question structured questionnaire on perceptions of illness severity, reasons for ED visits, primary care habits, and demographics.

Results: Seventy-seven parents participated. The children's mean age was 5.7 years (±4.4). Mothers' mean age was 31.6 (±6.02), fathers' mean age was 36.2 (±6.07). Forty-one percent of mothers (n=32) had high school or higher education. Regarding illness perception, 22 (28.6%) believed their child's illness was very mild or mild, while 55 (71.4%) thought it was moderate or severe. According to the ESI, 63 children (81.8%) were level 5, and 14 (18.2%) were level 4. The most common reasons for ED visits (n=58; 75.4%) were "symptoms recently worsened in the evening" and "parent worry." Nineteen and a half percent (19.5%) did not routinely seek controls; among those who did, 59.7% used primary care mainly for check-ups. Higher-educated mothers (high school/university) more regularly visited family physicians than lower-educated ones ($p<0.05$).

Conclusion: Parents with higher education tend to regularly visit family physicians and schedule routine checks. Since concern often arises from evening symptom escalation, providing detailed illness information may reduce anxiety and unnecessary ED visits.

Keywords: Pediatric emergency medicine, primary health care, patient admission

ÖZET

Amaç: Bu çalışma, ailelerin neden poliklinik yerine acil servisi tercih ettiğini anlamak, ebeveynlerin hastalık ciddiyeti algılarını değerlendirmek ve düzenli olarak aile hekimine gitmeyen veya sağlık hizmetlerinden memnun olmayan ailelerin alışkanlıklarını incelemek amacıyla yapıldı. Bu tür ailelerin acil servise daha sık başvurabileceği varsayılmıştır.

Materyal ve Metodlar: 16:30 ile 08:00 saatleri arasında, pediatrik acil servise 4-5 ESI skoruyla (hafif ve çok hafif) başvuran, 0-18 yaşları arasındaki çocukların ebeveynleri araştırmaya katıldı. Veriler, hastalık ciddiyeti algısı, acil servise başvuru nedenleri, ailesel sağlık hizmeti kullanımı ve demografik bilgiler hakkında hazırlanan 10 soruluk yapılandırılmış anket aracılığıyla toplandı.

Bulgular: Çalışmaya toplam 77 ebeveyn katıldı. Çocukların ortalama yaşı 5,7 yıldı (±4,4). Annelerin ortalama yaşı 31,6'ydı (±6.02), babaların ise 36,2'ydi (±6.07). Annelerin %41,6'sı (n=32) lise veya üzeri eğitim almıştı. Hastalık algısına göre, 22 (%28,6) ebeveyn, çocuğunun hastalığını çok hafif veya hafif, 55 (%71,4) ebeveyn ise orta veya ağır olarak değerlendirdi. ESI'ye göre, 63 çocuk (%81,8) seviye 5, 14 çocuk (%18,2) seviye 4 olarak sınıflandırıldı. En sık başvuru nedeni (n=58; %75,4) "Şikayetlerin akşam saatlerinde şiddetlenmesi" ve "Endişe duyulması"ydı. Neredeyse %19,5'i düzenli kontrole gitmemekteydi. Kontrol amacıyla başvuranlar arasında ise %59,7'si özellikle rutin kontroller için aile sağlığı merkezlerini kullandıklarını belirtti. Daha yüksek eğitim düzeyine sahip anneler (lise/üniversite) düşük eğitimli olanlara göre daha düzenli aile hekimine başvuruyordu ($p<0,05$).

Sonuç: Daha yüksek eğitim seviyesine sahip ebeveynler, düzenli olarak aile hekimine gidip rutin kontroller yaptırma eğilimindedir. Endişe genellikle akşam saatlerinde şikayetlerin artmasıyla ortaya çıktığı için, hastalık hakkında detaylı bilgi sağlamak, kaygıyı azaltabilir ve gereksiz acil servis başvurularını önleyebilir.

Anahtar kelimeler: Pediatrik acil tıp, temel sağlık hizmeti, hasta başvurusu

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INTRODUCTION

In recent years, pediatric emergency department (ED) utilization has increased significantly across many regions. Studies indicate that a large proportion of these visits are non-urgent and predominantly driven by parental anxiety, misperceptions regarding the severity of illnesses, and systemic barriers such as limited access to primary care outside regular hours (1, 2). Overcrowding in EDs leads to increased operational costs, resource strain, and potentially compromised quality of care.

Parental perception of illness severity is a central factor influencing healthcare seeking behaviors. Parents often overestimate the seriousness of minor or self-limited symptoms, especially when symptoms worsen or appear in the evening. These perceptions can result in unnecessary ED visits (1). Conversely, dissatisfaction with or lack of access to primary healthcare services outside of regular working hours can also push families toward emergency services, even for issues manageable through routine outpatient care (3).

Health literacy plays a key role; higher-educated parents tend to better understand health information, recognize warning signs, and appropriately utilize primary care services. Conversely, lower education levels are associated with over-reliance on emergency services for minor issues, driven by limited understanding or access problems (4).

In this study, we aimed to investigate the reasons why families seek emergency care instead of outpatient clinics and to assess whether there are discrepancies between parental and physician perceptions regarding illness severity. Additionally, we sought to evaluate the primary healthcare utilization habits of families who do not regularly consult with family physicians or are dissatisfied with the healthcare services they receive, hypothesizing that these families may be more likely to frequent emergency departments.

MATERIAL AND METHODS

Study Design and Setting

This cross-sectional descriptive study was conducted at the Pediatric ED of Istanbul Medeniyet University Goztepe Training and Research Hospital, a tertiary care center located in Istanbul, Turkey. The hospital's pediatric ED serves a diverse urban population.

Participants and Study Population

The study included parents or guardians of children aged 0–18 years who presented to the Pediatric ED during nighttime hours (16:30–08:00) and were assigned an Emergency Severity Index (ESI) score of 4 or 5, indicating low-acuity cases such as minor or very mild illnesses.

Children with higher acuity scores (ESI 1–3), chronic conditions requiring ongoing or specialized treatment, or children needing immediate intervention or hospital admission, were excluded to focus on non-urgent cases. All eligible participants who consented during the study period were recruited consecutively, totaling 77 parents.

Clinical Assessment and Triage

The examining physician used the ESI to determine the child's true severity of illness and triage score. The ESI, a five-level triage system in widespread use, categorizes patients based on urgency and resource needs:

ESI-1: Immediate, life-saving intervention required without delay (Immediate medical attention)
ESI-2: High risk of deterioration, or signs of a time-critical problem (Emergency)
ESI-3: Stable, with multiple types of resources needed to investigate or treat (such as lab tests plus diagnostic imaging) (Urgent)
ESI-4: Stable, with only one type of resource anticipated (such as only an x-ray, or only sutures) (Nonurgent)
ESI-5: Stable, with no resources anticipated except oral or topical medications, or prescriptions (Minor)

In this study, only parents of children with ESI scores of 4 and 5 were included in the questionnaire survey.

Data Collection and Instruments

Data were collected using a structured questionnaire prepared by the research team. The instrument was developed based on literature review and expert consultation, then pre-tested on a small sample to ensure clarity and validity. The questionnaire included sections on:

- Demographics: Child's age, gender; parent's age, gender, education level (categorized as primary/secondary, high school, university).
- Parental Perception of Illness Severity: Whether parents classified their child's illness as very mild, mild, moderate, severe or very severe.
- Reasons for ED Visit: Including symptom worsening, parental worry, or perceived urgency.
- Healthcare Utilization Habits: Frequency of routine checks, visits to family physicians, reasons for primary or emergency care.

Parents completed the questionnaire themselves through face-to-face interviews immediately after patient triage, performed by trained research assistants, to minimize recall bias.

Data Analysis

The collected data were coded and entered into SPSS version 22. Descriptive statistics, including means, standard deviations, frequencies, and percentages, summarized the data. The chi-square test was used to assess associations between categorical variables such as parental education level and healthcare-seeking behaviors. A p-value <0.05 was considered statistically significant.

Ethical Considerations

The study protocol was approved by the Marmara University School of Medicine Ethics Committee. Participation was voluntary, and written informed consent was obtained from all parents or guardians before data collection. Confidentiality and anonymity of participants were maintained throughout the study.

RESULTS

Demographic Characteristics

A total of 77 parents participated in the study. The mean age of the children was 5.7 ± 4.4 years (range: 1 month to 18 years). Child age groups can be seen in Figure 1. The average parental ages were 31.6 ± 6.02 years for mothers and 36.2 ± 6.07 years for fathers. Among the mothers, 32 (41.6%) had completed high school or higher education, while the remaining mothers had primary or secondary education levels (Table 1).

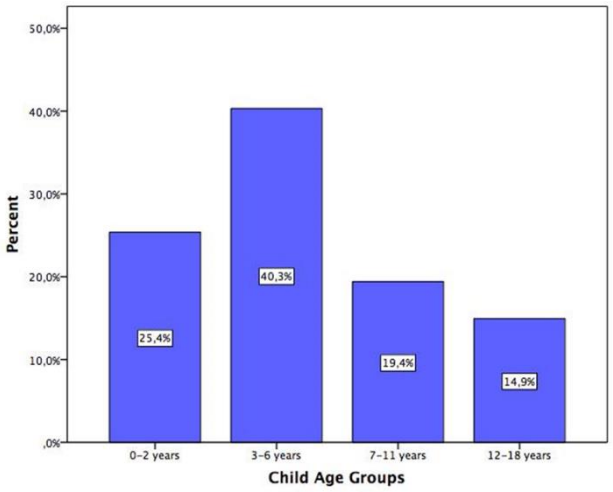

Figure 1. Distribution of child age groups

Parental Perceptions of Child's Illness Severity

When asked about their perception of their child's illness severity, 22 (28.6%) parents considered it very mild or mild, whereas 55 (71.4%) believed it was moderate or severe. According to the clinical assessment using the ESI, 63 (81.8%) children were classified as level 5—indicating low acuity—while 14 (18.2%) were classified as level 4, which is still considered low acuity (Figure 2).

Table 1. Socio-demographic characteristics

	Mean	SD	n	%
Age				
Children	5.7	4.4		
Mothers	31.6	6		
Fathers	36.2	6.1		
Education level				
Mothers				
Illiterate			7	9.1
Primary school			25	32.5
Secondary school			13	16.9
High school			23	29.9
University			9	11.7
Fathers				
Illiterate			8	10.4
Primary school			24	31.2
Secondary school			16	20.8
High school			16	20.8
University			13	16.9
Total			77	100

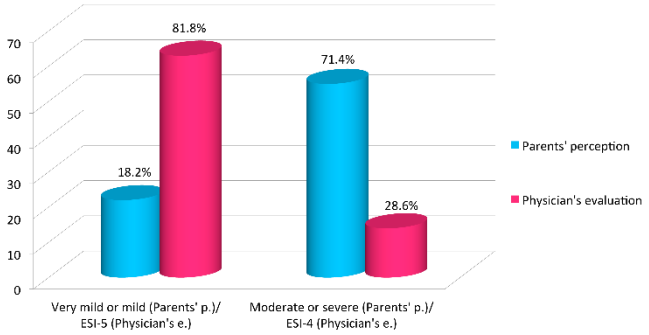

Figure 2. Parents' and physician's opinions about children's illness severity

Healthcare-Seeking Habits and Education Level

Regarding routine healthcare, 15 parents (19.5%) reported not taking their children regularly for controls. Among those who did, 46 (59.7%) reported consulting family physicians mainly for routine health checks or follow-ups (Table 2). Parents' perceptions and behaviors regarding admission to the pediatric emergency department are shown in Table 2.

A statistically significant association was found between mothers' education level and their habits of taking their children for regular check-ups ($p<0.05$) (Table 3). Mothers with high school or university education reported significantly more regular visits to family physicians compared to mothers with lower education levels ($p<0.05$). Specifically, among higher-educated mothers, 23 (71.9%) stated they consulted family physicians regularly for their children, whereas this figure was lower among mothers with primary or secondary education.

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Table 2. Parents' perceptions and behaviors regarding their pediatric emergency department admissions

Questions	n (%)	Yes, n (%)	No, n (%)	DNK
What do you think is the severity of your child's illness?				
-very severe	0			
-severe	11 (14.3)			
-moderate	44 (57.1)			
-mild	16 (20.8)			
-very mild	6 (7.8)			
What is the reason you admitted to Pediatric Emergency Department today?				
-I was worried.	29 (37.7)			
-I thought I wouldn't be able to cope at home.	8 (10.4)			
-Her/his symptoms had been present for a while, but they worsened towards this evening.	29 (37.7)			
-I brought her/him to the emergency room in the evening because I work during the day.	9 (11.7)			
-My spouse works during the day, and I can't come to the hospital alone.	2 (2.6)			
-I brought her/him to the emergency room because I couldn't make an appointment at the outpatient clinic.	0			
Have you ever applied to a Family Health Center due to this illness?		36 (46.7)	41 (53.3)	
Have you ever applied to another hospital outpatient clinic due to this illness?		29 (37.7)	48 (62.3)	
Is your child fully vaccinated?		100	0	
Do you have regular check-ups of your child?		62 (80.5)	15 (19.5)	
Where do you have your child's regular checkups?				
-family physician	46 (59.7)			
-private hospital	5 (6.5)			
-government hospital	18 (23.4)			
-private practice	8 (10.4)			
Is your family physician a family medicine specialist?		22 (28.6)	17 (22.1)	38 (49.4)
If your family physician were a specialist, would you go?		34 (44.2)	7 (9.1)	36 (46.8)
Total	**77 (100)**			

Table 3. The relationship between mothers' education level and their habits of taking their children for regular check-ups

	Regular check-ups	
	Yes	No
Low-educated mothers	27 (71.1%)	11 (28.9%)
High-educated mothers	30 (93.8%)	2 (6.2%)

Additional Observations

Parents' perceptions of illness severity were correlated with their reasons for seeking ED care. Those who perceived the illness as severe or moderate were more likely to cite worry (69% and 31% for severe or moderate and mild or very mild, respectively) and symptom escalation (82.8% and 17.2% for severe or moderate and mild or very mild, respectively) as their triggers for ED visits.

Discussion

This study provides insight into parental perceptions, reasons for pediatric ED visits, and primary care utilization habits. Our findings reveal a significant discrepancy between parental perception and clinical assessment: while the majority of children were classified as low-acuity (ESI 4–5), most parents perceived their child's condition as moderate or severe.

This misperception aligns with previous studies indicating that parental anxiety, limited health literacy, and symptom escalation in the evening contribute to unnecessary ED visits (5).

The predominant reasons for ED visits were symptom worsening and parental worry, particularly in the evenings. These findings emphasize the crucial role of parental understanding of illness progression and red flags. If parents are better informed about natural disease courses and warning signs, their confidence in managing minor illnesses at home or with routine primary care could increase, thereby reducing unnecessary emergency visits. Considering that children aged 3-6 are most frequently brought to pediatric ED, parents of children in this age group may be the main target audience for education.

Additionally, our data showed a clear association between higher parental education levels and more regular engagement with primary care—specifically routine visits to family physicians. This supports existing literature emphasizing the impact of health literacy on health-seeking behaviors (5, 6). Educational interventions targeted at parents with lower education levels could thus improve their management of common illnesses and optimal utilization of outpatient services. Systemic factors such as limited after-hours primary care access further influence the tendency to prefer ED visits during evenings

and weekends. Addressing these systemic barriers—by extending primary care hours, establishing walk-in clinics, or providing telemedicine services—may be effective strategies to reduce avoidable ED utilization (7, 8).

In light of our findings, improving communication with parents to provide detailed information about illness

progression, expected symptom courses, and warning signs could reduce unnecessary anxieties that lead to ED visits. Healthcare providers should also focus on health literacy programs tailored to populations with lower educational levels to promote appropriate health service usage.

Limitations

This study has several limitations. Its single-center, cross-sectional design limits the generalizability of the findings. The sample size was relatively small, and data were based on parental self-report, which may introduce recall bias. Future multi-center studies with larger samples and longitudinal designs are recommended to validate and expand these findings.

Conclusion

In conclusion, our study highlights that higher parental education is associated with more appropriate and regular primary care utilization. Moreover, parental concern, often triggered by symptom worsening in the evening, contributes significantly to unnecessary ED visits. Enhancing parental health literacy and expanding accessible primary care services, along with effective communication strategies about illness courses, are essential steps toward optimizing pediatric healthcare utilization and reducing unnecessary emergency visits.

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