Comparison of emergency department diagnoses and emergency medical services (EMS) providers' initial assessment diagnoses

Ⓘ **Ramiz Yazıcı,**[1] Ⓘ **Efe Demir Bala,**[1] Ⓘ **Burak Bekgöz,**[2] Ⓘ **Eyup Sari,**[3] Ⓘ **Ayse Fethiye Basa Kalafat,**[1] Ⓘ **Ozgur Omer Yildiz,**[4] Ⓘ **Utku Murat Kalafat,**[1] Ⓘ **Serkan Dogan**[1]

[1]Department of Emergency Medicine, Kanuni Sultan Süleyman Training and Research Hospital, University of Health Sciences, İstanbul-*Türkiye*

[2]Department of Emergency Medicine, Ankara Bilkent City Hospital, University of Health Sciences, Ankara-*Türkiye*

[3]Department of Pediatrics, Gülhane Faculty of Medicine, University of Health Sciences, Ankara-*Türkiye*

[4]Department of Thoracic Surgery, Yenimahalle Training And Research Hospital, Yıldırım Beyazıt University, Ankara-*Türkiye*

ABSTRACT

BACKGROUND: This study aims to evaluate the accuracy and quality of prehospital assessments and preliminary diagnoses made by Emergency Medical Services (EMS) providers compared to the final diagnoses given by Emergency Department physicians in a metropolitan area.

METHODS: This retrospective observational study utilized records from the Yenimahalle EMS Command Center in Ankara, Türkiye, from January 1, 2021, to December 31, 2022. Data were recorded as cases rather than individual patients, with repeated EMS admissions counted separately. Cases were categorized by EMS call time, reasons for EMS requests, age, gender, nationality, and weekday of hospital arrival to assess socioeconomic impacts and congestion patterns. The study included 2.528 pediatric cases, excluding patients aged 18 and older, those who refused EMS transfer, and cases resolved at the scene. Data analysis was conducted using IBM SPSS 27.0, with statistical significance set at p<0.05.

RESULTS: The study included 2.528 cases. The data revealed that EMS providers had an average of 9.9±4.7 years of experience. In 1.839 cases (72.7%), the EMS provider was female, and in 689 cases (27.3%), the EMS provider was male. Patients had an average age of 9.2±5.8 years, with 1.173 (46.4%) being female and 1.355 (53.6%) being male. Preliminary diagnosis accuracy was higher in cases involving younger and male patients. Additionally, a lower preliminary diagnosis accuracy rate was observed during office hours (08:00-15:59) compared to non-office hours (16:00-23:59). The majority of EMS calls were for medical reasons (1,783 cases, 70.5%), followed by trauma-related calls (745 cases, 29.5%).

CONCLUSION: This study highlights the need for improved on-field training for EMS providers to enhance the accuracy and quality of prehospital assessments and preliminary diagnoses. The findings suggest that younger and male patients have higher preliminary diagnosis accuracy rates, and there is a noticeable decrease in accuracy during office hours, indicating potential areas for targeted training and protocol adjustments.

Keywords: Emergency medical services; emergency department; prehospital assessment; preliminary diagnosis; pediatric trauma; training.

INTRODUCTION

Prehospital assessment is critical as it forms the foundation for all subsequent medical interventions, significantly influencing patient outcomes. The ability of Emergency Medical Services (EMS) providers to accurately reach a preliminary diagnosis and provide necessary prehospital care while transferring the patient to an advanced care center is often crucial for prognosis. Early and precise evaluation by EMS providers can expedite appropriate care, reduce complications, and improve survival rates in trauma and medical emergencies.[1,2]

Trauma is one of the leading causes of death in young people worldwide, with over 6 million people dying each year as a result of it.[3] According to a study conducted in a metropolitan area, half of all patients with severe hemorrhages caused by trauma cannot reach the hospital in time, with 44.9% of these deaths occurring as a result of preventable hemorrhages.[4] These data suggest that trauma affects the young, working population and can be extremely lethal without correct prehospital assessment and care in the field. These data also prompt EMS providers to be aware of the importance of prehospital assessment of patients.

Another condition that could be crucially affected by prehospital assessment and care is stroke. EMS providers are often the first responders to patients with stroke findings.[5] With over 5.5 million people affected by stroke each year and almost 50% percent of these patients becoming chronically disabled,[6] it is important to use tools such as the Cincinnati Prehospital Stroke Scale to determine the possibility of the patient having a stroke and providing safe transfer of these patients to an advanced and capable care center.

While assessing the patient and providing a preliminary diagnosis, continued by the necessary emergency care being applied to the patient in the EMS setting is important, it is not without its own challenges. It must be remembered that EMS personnel are in the field, outside of the hospital setting, thus it is also important for the crew to keep themselves safe and away from dangerous environments while evaluating the situation and examining the patient.[7] Being in the field can also be stressful on its own. This can potentially affect the clinical judgment of the EMS providers.

This study aimed to evaluate the quality and accuracy of prehospital assessments conducted by EMS providers in a pediatric patient group within a metropolitan area and to examine how the quality of these assessments varied over the course of a week and at different hours of the day. To achieve this goal, preliminary diagnoses recorded by EMS providers were compared with the final outcomes in the Emergency Department (ED). By collecting and analyzing this data, the study provides an overview of the accuracy of EMS providers and offers potential suggestions to improve the effectiveness of EMS.

MATERIALS AND METHODS

Study Design and Setting

This retrospective observational study was conducted using records from the EMS Command Centre in Ankara, the capital city of Türkiye. Due to the retrospective nature of the study, obtaining consent forms from the patients was not possible. Data were collected as cases rather than individual patients; if a patient was admitted to the hospital using EMS multiple times during the observed periods, each admission was counted as a separate case. The study protocol adhered to the standards set forth by the Helsinki Declaration and was approved by the Medical Research Scientific and Ethical Evaluation Board of Ankara Bilkent University Hospital (Date: 22/05/2024, No: TABED 1-24-286).

Cases in this study were categorized based on the time period of the EMS call and the reasons for the EMS requests. Patients requesting EMS services for non-traumatic reasons were classified under medical reasons, while those requesting assistance due to trauma were grouped under the 'trauma' category. Call hours were divided into three categories: 08:00-15:59, 16:00-23:59, and 00:00-07:59. This categorization was used because the Command Centre database organized these hours into different shifts involving different dispatchers.

We also categorized the cases based on age, gender, nationality, and the weekday of arrival at the hospital. These categorizations were performed to understand the impact of socioeconomic factors on the characteristics of EMS calls. Additionally, we recorded the weekdays of hospital arrival to analyze congestion patterns and determine the busiest days for EMS responders.

Patient Selection

During the study period from January 1, 2021 to December 31, 2022, a total of 25,275 case transfers were conducted by the relevant command center, of which 2,528 involved pediatric cases. We excluded patients aged 18 years and older, as well as those who refused EMS transfer and cases that were resolved at the scene. Aside from these exclusion criteria, all other pediatric patients registered in the Ankara Yenimahalle EMS Command Center database were included in the study.

Potential Bias Sources

As this was a retrospective observational study, the physicians and EMS providers evaluating the cases were blinded to the research. However, this limitation also restricted the ability of the authors and researchers to evaluate the cases themselves. Since the study was conducted in a single command center, the results may be influenced by local factors. The absence of individual-level statistics for paramedics conceals errors made by the same paramedics. Additionally, the lack of data on the current educational status of the paramedics is another limitation. The inability to access reliable information that could categorize the reasons for EMS calls into subcat-

egories prevented us from detailing these data. These factors can be considered among the limitations of the study.

Statistical Analysis

Data analysis was performed using the statistical software IBM SPSS 27.0 (Armonk, NY: IBM Corp.). In evaluating the study data, descriptive statistical methods such as frequency, percentage, mean, standard deviation, median, min-max were used, along with the Chi-Square test to compare qualitative data. The suitability of the data for normal distribution was evaluated using the Kolmogorov-Smirnov test, skewness-kurtosis, and graphical methods (histogram, Q-Q Plot, Stem and Leaf, Boxplot). The independent samples t-test was used to compare normally distributed quantitative data between groups. The statistical significance level was set at $p<0.05$.

RESULTS

A total of 2,528 cases were included in the study. The col-

Table 1. Characteristics of the participants		
	Count	**Percent**
EMS Provider Gender		
Female	1839	72.7
Male	689	27.3
EMS Provider Experience (years)[a]	9.9±4.7	11.2 (0.2 – 30.4)
<5 years	525	20.8
5-9 years	354	14.0
10-14 years	1469	58.1
≥15 years	180	7.1
Patient Gender		
Female	1173	46.4
Male	1355	53.6
Patient Age (years)[a]	9.2±5.8	10.0 (0.0 – 17.0)
Patient Nationality		
Republic of Türkiye	2429	96.1
Other	99	3.9
Days of the Week		
Monday	380	15.0
Tuesday	365	14.4
Wednesday	384	15.2
Thursday	370	14.6
Friday	389	15.4
Saturday	328	13.0
Sunday	312	12.3
Time Period of the EMS Call		
00:00 - 07:59	469	18.6
08:00 - 15:59	1112	44.0
16:00 - 23:59	947	37.5
The Cause of the EMS Call		
Medical	1783	70.5
Other Accidents	398	15.7
Traffic Accident	215	8.5
Soft Tissue Trauma	90	3.6
Suicide	36	1.4
Workplace Accident	6	0.2

a: Mean±SD/Median (Min-Max).

Table 2. Characteristics of the participants (continuation)

	Count	Percent
Hospital Arrival Time Interval (Call-Hospital Arrival) (minutes)[a]	34.7±13.0	32.2 (3.6 – 208.5)
Hospital Arrival Hours		
00:00 - 07:59	422	16.7
08:00 - 15:59	1063	42.0
16:00 - 23:59	1043	41.3
Total Time Spent in Emergency Department (ED) (minutes)[a]	387.1±760.0	196.5 (0.0 – 9.820.0)
Case Result		
Discharged	2364	93.5
Transfer to an Advanced Care Center	104	4.1
Transfer to an Inpatient Clinic	55	2.2
Death	3	0.1
Transfer to Another Center with Similar Capabilities	2	0.1
Total Time Spent in Inpatient Clinics (minutes)[a]	898.1±396.7	952.0 (29.0 – 1.451.0)
Inpatient Clinic Result		
Discharged	55	2.2
EMS-ED Diagnosis Comparison		
Correct	2281	90.2
False	247	9.8
ED-Clinical Diagnosis Comparison (n=55)		
Correct	48	87.3
False	7	12.7

a: Mean±SD/Median (Min-Max).

lected data showed that in 1,839 (72.7%) cases, the EMS provider was female, and in 689 (27.3%) cases, the EMS provider was male. EMS providers had an average of 9.9±4.7 years of experience, with 1,469 (58.1%) cases managed by an EMS provider with 10-14 years of experience (Table 1). In 1,173 (46.4%) cases, the patient was female, while in 1,355 (53.6%) cases, the patient was male (Table 1).

Patients had an average age of 9.2±5.8 years. The majority of patients were of Turkish origin, with 2,429 (96.1%) cases being Turkish citizens. Most cases were admitted to the hospital on Fridays, with 389 (15.4%) patients (Table 1). Overall, cases were distributed homogeneously across each day of the week, with the fewest cases admitted on Sundays (n=312, 12.3%) (Table 1). Most patients were admitted to the hospital during standard working hours, between 08:00 and 15:59 (n=1,112, 44%), followed by 16:00 and 23:59 (n=947, 37.5%) (Table 1). Most EMS calls were for medical reasons (n=1,783, 70.5%), followed by various accidents (n=398, 15.7%) (Table 1).

Patients arrived at the hospital an average of 34.7±13.0 minutes after their call to EMS (Table 2). They spent an average of 387.1±760 minutes in the ED after admission. Following clini-

cal evaluation and treatment in the ED, 2,364 (93.5%) cases were discharged, while 104 (4.1%) cases were transferred to an advanced care center (Table 2). Fifty-five (2.2%) cases were transferred to an inpatient clinic, and three (0.1%) cases were declared deceased.

Patients spent an average of 898.1±396.7 minutes in inpatient clinics. Comparisons between the preliminary diagnosis made by EMS providers and the diagnosis made by ED physicians revealed that in 2,281 (90.2%) of the cases, the preliminary diagnosis was correct (Table 2). Fifty-five (2.2%) cases were hospitalized in inpatient clinics; 48 (87.3%) of these were correctly diagnosed by ED physicians, while seven (12.7%) had different diagnoses in their inpatient clinic follow-up (Table 2).

Various variables were recorded and compared to determine if any had a statistically significant correlation with the accuracy of the preliminary diagnosis. Analysis revealed a statistically significant correlation between the accuracy of the preliminary diagnosis and the patient's gender, age, and the hour of arrival at the hospital (Table 3).

Male patients had a better preliminary diagnosis accuracy (p<0.001). Younger patients also showed a higher accuracy rate in preliminary diagnoses (p=0.005). The data analysis in-

Table 3. Comparisons between Emergency Department (ED) and Emergency Medical Services (EMS) Diagnosis

	Diagnosis		
	Correct (n=2281)	False (n=247)	p
EMS Provider Gender			
Female	1663 (72.9%)	176 (71.3%)	0.580[a]
Male	618 (27.1%)	71 (28.7%)	
EMS Provider Experience (Years)	9.9±4.7	10.3±4.7	0.230[b]
<5 Years	476 (20.9%)	49 (19.8%)	0.328[a]
5-9 Years	326 (14.3%)	28 (11.3%)	
10-14 Years	1322 (58.0%)	147 (59.5%)	
≥15 Years	157 (6.9%)	23 (9.3%)	
Patient Gender			
Female	1029 (45.1%)	144 (58.3%)	<0.001[a]
Male	1252 (54.9%)	103 (41.7%)	
Patient Age (Years)	9.1±5.7	10.2±5.9	0.005[b]
Patient Nationality			
Republic of Türkiye	2193 (96.1%)	236 (95.5%)	0.775[a]
Other	88 (3.9%)	11 (4.5%)	
Day of the Week			
Monday	340 (14.9%)	40 (16.2%)	0.794[a]
Tuesday	326 (14.3%)	39 (15.8%)	
Wednesday	342 (15.0%)	42 (17.0%)	
Thursday	333 (14.6%)	37 (15.0%)	
Friday	358 (15.7%)	31 (12.6%)	
Saturday	297 (13.0%)	31 (12.6%)	
Sunday	285 (12.5%)	27 (10.9%)	
Time Period of the EMS Call			
00:00 - 07:59	423 (18.5%)	46 (18.6%)	0.099[a]
08:00 - 15:59	989 (43.4%)	123 (49.8%)	
16:00 - 23:59	869 (38.1%)	78 (31.6%)	
Reason for EMS Call			
Medical	1560 (68.4%)	223 (90.3%)	<0.001[a]
Trauma	721 (31.6%)	24 (9.7%)	
Other Accidents	384 (53.3%)	14 (58.3%)	
Traffic Accidents	212 (29.4%)	3 (12.5%)	
Soft Tissue Trauma	86 (11.9%)	4 (16.7%)	
Suicide	33 (4.6%)	3 (12.5%)	
Workplace Accident	6 (0.8%)	0 (0.0%)	

a: Chi Square Test (n/%), b: Independent samples t-test (Mean±SD).

dicated that accuracy rates were lower in cases arriving at the hospital between 08:00 and 15:59 and higher in cases arriving between 16:00 and 23:59 (p=0.019) (Table 4).

Patients calling EMS for medical reasons accounted for 1,783 (70.5%), while those calling for trauma accounted for 745 (29.5%) cases. Among the 247 (9.8%) patients with an incorrect diagnosis, 223 (90.3%) were admitted to the ED for medical reasons, and only 24 (9.7%) were admitted due to trauma (Table 3). No statistically significant correlation was found between the accuracy rate and other variables.

Table 4. Comparisons between ED and EMS diagnosis (continuation)

	Diagnosis		
	Correct (n=2281)	False (n=247)	p
Hospital Arrival Time Interval (Call-Hospital Arrival) (minutes)	34.8±13.1	34.1±11.9	0.435[b]
Hospital Arrival Hours			
00:00 - 07:59	383 (16.8%)	39 (15.8%)	0.019[a]
08:00 - 15:59	939 (41.2%)	124 (50.2%)	
16:00 - 23:59	959 (42.0%)	84 (34.0%)	
Total Time Spent in Emergency Department (ED) (minutes)	391.2±768.0	349.5±682.3	0.368[b]
Case Result			
Discharged	2128 (93.3%)	236 (95.5%)	0.630[a]
Transfer to an Advanced Care Center	98 (4.3%)	6 (2.4%)	
Transfer to an Inpatient Clinic	50 (2.2%)	5 (2.0%)	
Death	3 (0.1%)	0 (0.0%)	
Transfer to Another Center with Similar Capabilities	2 (0.1%)	0 (0.0%)	
Total Time Spent in Inpatient Clinics (minutes)	892.8±395.4	950.6±453.2	0.759[b]

a: Chi Square Test (n/%), b: Independent samples t-test (Mean±SD).

DISCUSSION

In our study, we aimed to evaluate the accuracy and quality of prehospital assessments conducted by EMS providers compared to the actual diagnoses made by ED physicians. With an increasing population and advancing technology, prehospital assessment is becoming a crucial aspect of modern EMS. Accurate prehospital assessments followed by prompt and personalized care can lead to better patient outcomes.[8,9] Conversely, misdiagnosis or poor prehospital assessments can result in worse outcomes for patients.[10] Therefore, it is essential to evaluate the accuracy and quality of prehospital assessments and provide suggestions for improvement.

Despite the growing importance of prehospital care and assessment, there is a scarcity of literature on the accuracy of prehospital assessments and care.[11] This may be due to recent advancements in technology and the resulting improvements in hospital capabilities, which have led to the oversight of prehospital assessments.

Our data reveal that cases involving male patients had a higher accuracy rate. Additionally, the preliminary diagnostic accuracy for trauma patients was found to be high. This is likely due to the fact that two-thirds of childhood trauma patients are boys.[12] In a study conducted by Koivulahti et al. on the preliminary diagnostic accuracy of paramedics, trauma patients had preliminary diagnosis accuracy rates between 76% and 85%, among the highest in the study.[13] Thus, the higher accuracy rate may be attributed to the greater prevalence of trauma in male patients and the relative ease of diagnosing trauma in a prehospital setting compared to other conditions. An epidemiological study examining prehospital pediatric emergencies over a two-year period reported that 76% of the patients presented to the emergency department for medical reasons.[14] Similarly, in our study, the majority of patients received diagnoses related to medical conditions.

Our data analysis indicates that cases involving younger patients had a higher accuracy rate compared to older patients. According to the Centers for Disease Control and Prevention (CDC), unintentional injury was the leading cause of death and non-fatal injury among those aged 10 to 44 in 2022.[15] As previously mentioned, the preliminary diagnosis of prehospital assessments has a higher accuracy rate in trauma patients. This result may also be influenced by the fact that elderly patients often have more comorbidities, making them harder to assess in a prehospital setting. A study conducted by Hoyle et al. highlights that elderly patients can still be under-triage in trauma cases.[16] Additionally, a study by Ross et al. evaluating the effectiveness of Emergency Medicine Observation Rooms reported that most patients over 65 years of age were admitted for medical reasons.[17] Therefore, the higher preliminary diagnosis accuracy rate in younger patients may be because they are more likely to be admitted for trauma, which has a higher preliminary diagnosis accuracy rate.

Our study also reported a lower preliminary diagnosis accuracy rate between 08:00 and 15:59 compared to 16:00 and 23:59. A study conducted by Mazahir et al. in 2015 found that injuries in trauma patients were more likely to be missed during non-office hours.[18] This supports our argument, as non-office hours tend to have fewer senior trauma residents and surgeons, resulting in more missed diagnoses. Between

08:00 and 15:59, more senior hospital staff are present, resulting in fewer missed diagnoses. However, between 16:00 and 23:59, there are fewer senior hospital staff, so the actual diagnosis relies more on the preliminary diagnosis made by the EMS provider. Another study by Lavoie et al. reports that EMS providers' judgments are crucial in the prehospital evaluation of trauma.[19] We agree with this statement. A study by Kimaz et al. concluded that there is a need for stricter enforcement of on-field training to raise the quality of care in the Turkish EMS and prehospital system.[20] We believe that the decreased preliminary diagnosis accuracy between 08:00 and 15:59 indicates a need for more on-field training, especially for prehospital assessment.

CONCLUSION

Prehospital initial assessment is of great importance for ensuring that pediatric patients receive appropriate medical care and maintain a healthy life. Although our diagnostic accuracy rate is high, it is crucial for EMS providers to receive regular training in pediatric patient care, with ongoing field supervision and feedback to ensure the effectiveness of this training. Additionally, the lower rate of missed diagnoses outside office hours suggests the need for extending the working hours of senior doctors in pediatric emergency departments to 24 hours and improving EMS providers' knowledge of pediatric medical conditions.

REFERENCES

1. Brown J, Sajankila N, Claridge JA. Prehospital assessment of trauma. Surg Clin North Am 2017;97:961–83. [CrossRef]
2. Reay G, Rankin JA, Smith-MacDonald L, Lazarenko GC. Creative adapting in a fluid environment: an explanatory model of paramedic decision making in the pre-hospital setting. BMC Emerg Med 2018;18:42.
3. Rossiter ND. "Trauma-the forgotten pandemic?". Int Orthop 2022;46:3–11. [CrossRef]
4. Kalkwarf KJ, Drake SA, Yang Y, Thetford C, Myers L, Brock M, et al. Bleeding to death in a big city: An analysis of all trauma deaths from hemorrhage in a metropolitan area during 1 year. J Trauma Acute Care Surg 2020;89:716–22. [CrossRef]
5. Zhelev Z, Walker G, Henschke N, Fridhandler J, Yip S. Prehospital stroke scales as screening tools for early identification of stroke and transient ischemic attack. Cochrane Database Syst Rev 2019;4:CD011427.
6. Donkor ES. Stroke in the 21st century: a snapshot of the burden, epidemiology, and quality of life. Stroke Res Treat 2018;2018:3238165.
7. Blumen IJ, Lees D. Air medical safety: your first priority. In: Blumen IJ, Lemkin DL, editors. Principles and direction of air medical transport. Salt Lake City (UT): Air Medical Physician Association; 2006. p. 519–32.
8. Wilson MH, Habig K, Wright C, Hughes A, Davies G, Imray CH. Prehospital Emergency Medicine. Lancet 2015;386:2526–34. [CrossRef]
9. Smith MW, Bentley MA, Fernandez AR, Gibson G, Schweikhart SB, Woods DD. Performance of experienced versus less experienced paramedics in managing challenging scenarios: a cognitive task analysis study. Ann Emerg Med 2013;62:367–79. [CrossRef]
10. O'Hara R, Johnson M, Siriwardena AN, Weyman A, Turner J, Shaw D, et al. A qualitative study of systemic influences on paramedic decision making: care transitions and patient safety. J Health Serv Res Policy 2015;20:45–53. [CrossRef]
11. Christie A, Costa-Scorse B, Nicholls M, Jones P, Howie G. Accuracy of working diagnosis by paramedics for patients presenting with dyspnoea. Emerg Med Australas 2016;28:525–30. [CrossRef]
12. Aluisio AR, Umuhire OF, Mbanjumucyo G, George N, Kearney A, Karim N, et al. Epidemiologic characteristics of pediatric trauma patients receiving prehospital care in Kigali, Rwanda. Pediatr Emerg Care 2019;35:630–6. [CrossRef]
13. Koivulahti O, Tommila M, Haavisto E. The accuracy of preliminary diagnoses made by paramedics - a cross-sectional comparative study. Scand J Trauma Resusc Emerg Med 2020;28:70. [CrossRef]
14. Houtekie L, Meert P, Thys F, Guy-Viterbo V, Clement de Clety S. Prehospital paediatric emergencies in Belgium: an epidemiologic study. Eur J Emerg Med 2015;22:107–10. [CrossRef]
15. Centers for Disease Control and Prevention. WISQARS Leading Causes of Death Visualization Tool. Available from: https://wisqars.cdc.gov/lcd/?o=LCD&y1=2022&y2=2022&ct=10&cc=ALL&g=00&s=0&r=0&ry=0&e=0&ar=lcd1age&at=groups&ag=lcd1age&a1=0&a2=199. Accessed May 28, 2024.
16. Hoyle AC, Biant LC, Young M. Undertriage of the elderly major trauma patient continues in major trauma centre care: a retrospective cohort review. Emerg Med J 2020;37:508–14. [CrossRef]
17. Ross MA, Compton S, Richardson D, Jones R, Nittis T, Wilson A. The use and effectiveness of an emergency department observation unit for elderly patients. Ann Emerg Med 2003;41:668–77. [CrossRef]
18. Mazahir S, Pardhan A, Rao S. Office hours vs after-hours. Do presentation times affect the rate of missed injuries in trauma patients? Injury 2015;46:610–5. [CrossRef]
19. Lavoie A, Emond M, Moore L, Camden S, Liberman M. Evaluation of the Prehospital Index, presence of high-velocity impact and judgment of emergency medical technicians as criteria for trauma triage. CJEM 2010;12:111–8. [CrossRef]
20. Kimaz S, Soysal S, Cimrin AH, Günay T. Assessment of physicians employed in emergency medical services about their level of knowledge on basic life support, advanced cardiac life support and medicolegal responsibilities. Ulus Travma Acil Cerrahi Derg 2006;12:59–67.

Acil servis tanıları ile paramediklerin ilk değerlendirme tanılarının karşılaştırılması

Ramiz Yazıcı,[1] **Efe Demir Bala,**[1] **Burak Bekgöz,**[2] **Eyup Sari,**[3] **Ayse Fethiye Basa Kalafat,**[1] **Ozgur Omer Yildiz,**[4] **Utku Murat Kalafat,**[1] **Serkan Dogan**[1]

[1]Sağlık Bilimleri Üniversitesi, Kanuni Sultan Süleyman Eğitim ve Araştırma Hastanesi, Acil Tıp Kliniği, İstanbul, Türkiye
[2]Sağlık Bilimleri Üniversitesi, Ankara Bilkent Şehir Hastanesi, Acil Tıp Kliniği, Ankara, Türkiye
[3]Sağlık Bilimleri Üniversitesi Gülhane Tıp Fakültesi, Pediatri Anabilim Dalı, Ankara, Türkiye
[4]Yıldırım Beyazıt Üniversitesi, Yenimahalle Eğitim ve Araştırma Hastanesi, Göğüs Cerrahisi Kliniği, Ankara, Türkiye

AMAÇ: Bu çalışma, Acil Sağlık Hizmetleri (ASH) sağlayıcıları tarafından yapılan hastane öncesi değerlendirmeler ve ön tanıların, bir metropol Acil Servis hekimleri tarafından verilen nihai tanılarla karşılaştırıldığında doğruluğunu ve kalitesini değerlendirmeyi amaçlamaktadır.

GEREÇ VE YÖNTEM: Bu retrospektif gözlemsel çalışma, 1 Ocak 202–31 Aralık 2022 tarihleri arasında Ankara, Türkiye'deki Yenimahalle ASH Komuta Merkezi'nden elde edilen kayıtları kullanmıştır. Veriler, tekrar eden ASH başvuruları ayrı ayrı sayılarak, bireysel hastalar yerine vaka olarak kaydedilmiştir. Vakalar, ASH çağrı zamanı, ASH istek nedenleri, yaş, cinsiyet, uyruk ve hastaneye varış günü gibi kategorilere ayrılarak sosyoekonomik etkiler ve yoğunluk kalıpları değerlendirilmiştir. Çalışma, sahada çözülen vakalar, ASH transferini reddedenler ve 18 yaş ve üstü hastalar hariç tutularak, 2.528 pediatrik vakayı içermiştir. Veri analizi IBM SPSS 27.0 kullanılarak yapılmış olup, istatistiksel anlamlılık p<0.05 olarak belirlenmiştir.

BULGULAR: Çalışma 2.528 vakayı içermektedir. Veriler, ASH sağlayıcılarının ortalama 9.9 ± 4.7 yıllık deneyime sahip olduğunu ortaya koymuştur. 1.839 vakada (%72.7) ASH sağlayıcısı kadın iken, 689 vakada (%27.3) ASH sağlayıcısı erkektir. Hastaların ortalama yaşı 9.2±5.8 yıl olup, 1.173'ü (%46.4) kız ve 1.355'i (%53.6) erkektir. Ön tanı doğruluğu, daha genç ve erkek hastaları içeren vakalarda daha yüksek bulunmuştur. Ayrıca, mesai saatleri (08:00-15:59) içinde, mesai saatleri dışına (16:00-23:59) kıyasla daha düşük ön tanı doğruluğu gözlemlenmiştir. ASH çağrılarının çoğunluğu tıbbi nedenlerle (%70.5, 1.783 vaka) yapılırken, travma ile ilgili çağrılar (%29.5, 745 vaka) ikinci sırada gelmektedir.

SONUÇ: Bu çalışma, ASH sağlayıcılarının hastane öncesi değerlendirmeler ve ön tanıların doğruluğunu ve kalitesini artırmak için sahada eğitimlerini iyileştirme gereğini vurgulamaktadır. Bulgular, daha genç ve erkek hastaların daha yüksek ön tanı doğruluğu oranlarına sahip olduğunu ve mesai saatlerinde doğrulukta belirgin bir azalma olduğunu, bu durumun hedeflenmiş eğitim ve protokol ayarlamaları için potansiyel alanlar olduğunu önermektedir.

Anahtar sözcükler: Acil tıp hizmetleri; acil servis; eğitim; hastane öncesi değerlendirme; ön tanı; pediatrik travma.