Examination of Patient Profiles Admitted to the Paediatric Emergency According to Various Variables

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Research Article

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Abstract

**Purpose:** The aim is to examine the applications to the paediatric emergency service of Foundation University Hospital in Ankara according to variables: gender, age, season of application, diagnosis, number of consultations and hospitalizations, and triage codes.

**Materials and methods:** The research is a retrospective descriptive study. The data of patients admitted to the paediatric emergency department of a hospital in Ankara between 01.08.2017-31.07.2018 were obtained (n=16383). Frequency, percentages, cross table, and chi-square test were used for comparison.

**Findings:** 0% of patients: very urgent application, 19%: urgent and 81%: non-urgent. The most common first three diagnoses: “unknown origin fever”, “cough”, “nausea and vomiting”. The 0-28 days age group had the lowest number of applications with 5% and had the highest emergency triage status with 66.5%; and the 19 months-5 years age group had the highest number of applications with 49% and had the lowest emergency triage rate with 12.8%.

**Conclusion:** The reasons for applying to PES may differ according to contextual variables and providing parents with information from reliable sources may reduce unnecessary anxiety and emergency service admissions. There should be strengthened primary health care services and referral system to maintain high-quality emergency services.

1. **Introduction**

The emergency department (ED) is an essential component of the medical services offered in any hospital. (1) Paediatric Emergency Services (PES) are important hospital units that provide 24-hour uninterrupted service for all its units and employees. According to the Ministry of Health hospital data, the number of applications for the first nine months in Turkey was approximately 296 million in 2017; it was reported that emergency medicine applications constituted the first place among applications with 26% (77 million), while PES applications ranked fourteenth with 3% (8 million). Since the applications of PES are only notifications of hospitals with PES, it can be considered that a significant number of paediatric patients’ applications are among the first-line emergency medical applications. Similarly, according to the Declaration of the Turkish Paediatric Emergency and Intensive Care Association in 2008, paediatric patients account for 30% of all emergency applications. It has been reported that 4–10% of emergency service admissions are paediatric patients in the United States. (2, 3, 4) Child and parental demographic features associated with increased childhood ED use have been well characterized and include increased parental ED utilization, being a single parent, Medicaid coverage, and not having a primary care provider (PCP). (5, 6, 7) In addition to this, the quality of the PCP relationship has also been shown to be key determinant of paediatric ED utilization, since parents dissatisfied with their usuals source of care are more likely to have a nonurgent ED visit. (8, 9, 10)
Since ESs are the first application placed in many cases, ES data are needed in the analyses to be made on the subject. (11) Although there are studies investigating ES cases in our country, there are a limited number of studies that reveal the characteristics of the paediatric age group. (12)

PES applications, which make up 30% of all ES applications, still maintain their high rate despite the taken necessary measures. It is essential to evaluate ES data for the provided service to be better and more scientific. (2)

It is expected that this study will contribute to the accumulation of knowledge about the patient profile and diagnoses, applied to the PES, providing information to the authorities on this subject, and improving the applications. In the study, applications made to a foundation university hospital PES in Ankara within a year were evaluated according to season, diagnoses, triage codes, and children's age and gender.

2. Materials And Methods

The retrospective descriptive method was used in this study. The data was obtained from the electronic databases system of a foundation university hospital in Ankara from the information of the applicants who applied to PES between 01.08.2017 and 31.07.2018. The permission was obtained from the Ethics Committee of the university (24.12.2020 Date, Approval Number 2020/67).

Without taking the patient names from the information system, age, gender, date of application, the number of patients in the triage areas, the number of patients hospitalized and consulted, and the diagnostic diversity of diseases according to the diagnosis codes of ICD-10 (International Classification of Diseases-10) were evaluated.

The analysis of the data was made for the first 15 diagnoses (n = 6550), which are most common in paediatric patients (18 years of age and below) admitted to the emergency service (N = 16 383).

In this study, the distribution of the patients participating in the study according to different variables is given by the frequency tables. Relationships between categorical variables were examined by using the chi-square test. In cases where a relationship was found according to the chi-square test, the ratios between the categories of the column variable are compared with the z-test. When the number of categories of the column variable is more than two, Bonferroni correction was applied when comparing the ratios. The analysis of the data was made by using IBM SPSS v23 program and the upper limit for significance in statistical tests was taken as 0.05.

3. Findings

Of the 16 383 patients who applied to the PES between 1 August 2017 and 31 July 2018, 6550 child patients aged 18 and under (with the top 15 diagnoses as the most common diagnosis) were included in the study. 46.2% (n = 3027) of the patients were female and 53.8% (n = 3523) were male.
Table 1
Distribution of patients by gender and age group

|                | f   | %  |
|----------------|-----|----|
| **Sex**        |     |    |
| Male           | 3523| 53.8|
| Female         | 3027| 46.2|
| **Age group**  |     |    |
| 0–28 days      | 355 | 5.4 |
| 29 days – 18 months | 784 | 12.0|
| 19 months – 5 years | 3213| 49.1|
| 6–11 years     | 1458| 22.3|
| 12–18 years    | 736 | 11.2|

It was checked whether there was a significant difference between the age distribution of the patients. The least admitted age group with 5.4% is the babies between 0–28 days, which we call new-borns, and the most applied age group with 49.1% is the pre-school period, which is the age group of 19 months-5 years.

The distribution of the patients according to the season they applied and their triage status were examined and the results are given.

According to this; 81% of the patients are green area (Normal), 19% are yellow area (Emergency) patients. There is no red area (Very Urgent) patient application.

Of the patients, 18.4% (1207) applied in Summer, 21.2% (1386) in Spring, 27.3% (n = 1789) in Autumn, and 33.1% (2168) in Winter. The fewest applicants are in the summer, the most applicants are in the winter.
| Diagnosis                                                                 | Winter | Spring | Summer | Autumn | Total |
|---------------------------------------------------------------------------|--------|--------|--------|--------|-------|
| R50-Fever of unknown cause                                               | f 745<sub>a</sub> | 316<sub>b</sub> | 369<sub>a</sub> | 428<sub>b</sub> | 1858<sub></sub> |
| %                                                                         | 34.4   | 22.8   | 30.6   | 23.9   | 28.4  |
| R05-Cough                                                                | f 508<sub>a</sub> | 253<sub>b</sub> | 112<sub>c</sub> | 313<sub>b</sub> | 1186<sub></sub> |
| %                                                                         | 23.4   | 18.3   | 9.3    | 17.5   | 18.1  |
| R11-Nausea and vomiting                                                  | f 94<sub>a</sub> | 103<sub>b</sub> | 167<sub>c</sub> | 229<sub>c</sub> | 593<sub></sub> |
| %                                                                         | 4.3    | 7.4    | 13.8   | 12.8   | 9.1   |
| R10-Abdominal and pelvic pain                                            | f 124<sub>a</sub> | 89<sub>a</sub> | 80<sub>a,b</sub> | 166<sub>b</sub> | 459<sub></sub> |
| %                                                                         | 5.7    | 6.4    | 6.6    | 9.3    | 7.0   |
| J06-Acute upper respiratory tract infections, multiple and unspecified sites | f 176<sub>a</sub> | 102<sub>a,b</sub> | 59<sub>b</sub> | 116<sub>a,b</sub> | 453<sub></sub> |
| %                                                                         | 8.1    | 7.4    | 4.9    | 6.5    | 6.9   |
| W19-Fall, unspecified                                                     | f 93<sub>a</sub> | 117<sub>b</sub> | 96<sub>a</sub> | 130<sub>b</sub> | 436<sub></sub> |
| %                                                                         | 4.3    | 8.4    | 8.0    | 7.3    | 6.7   |
| H66-Suppurative and unspecified Otitis media                             | f 145<sub>a</sub> | 84<sub>a</sub> | 41<sub>b</sub> | 54<sub>b</sub> | 324<sub></sub> |
| %                                                                         | 6.7    | 6.1    | 3.4    | 3.0    | 4.9   |
| R07-Pain in throat and chest                                            | f 90<sub>a,b</sub> | 72<sub>b,c</sub> | 33<sub>a</sub> | 116<sub>c</sub> | 311<sub></sub> |
| %                                                                         | 4.2    | 5.2    | 2.7    | 6.5    | 4.7   |
| R17-Jaundice, unspecified                                                | f 33<sub>a</sub> | 31<sub>a,b</sub> | 34<sub>a,b</sub> | 52<sub>b</sub> | 150<sub></sub> |
| %                                                                         | 1.5    | 2.2    | 2.8    | 2.9    | 2.3   |
| R21-Redness and other unspecified skin rash                              | f 35<sub>a</sub> | 27<sub>a</sub> | 33<sub>a</sub> | 45<sub>a</sub> | 140<sub></sub> |
| %                                                                         | 1.6    | 1.9    | 2.7    | 2.5    | 2.1   |
| P59-Neonatal jaundice due to other and unspecified causes                | f 30<sub>a</sub> | 23<sub>a</sub> | 40<sub>b</sub> | 40<sub>a,b</sub> | 133<sub></sub> |
| %                                                                         | 1.4    | 1.7    | 3.3    | 2.2    | 2.0   |
| R45-Symptoms and signs of emotional state                                | f 26<sub>a</sub> | 32<sub>a</sub> | 53<sub>b</sub> | 22<sub>a</sub> | 133<sub></sub> |
According to Table 2, it can be said that there is a statistically significant relationship between the season in which the patients admitted to the hospital and their diagnoses ($p < 0.05$). The three most common diagnoses are "fever of unknown cause", "cough" and "nausea and vomiting". While the rate of winter and summer diagnosis of "fever of unknown cause" was higher than that of Spring ($p < 0.05$). It is observed that the winter rate (23.1%) of the diagnosis of “cough” is higher than other seasons ($p < 0.05$) and the rate of Summer (9.3%) is lower than in other seasons. It can be said that “nausea and vomiting” is higher in summer and autumn compared to other seasons ($p < 0.05$).

| Season | %  | 1.2 | 2.3 | 4.4 | 1.2 | 2.0 |
|--------|----|-----|-----|-----|-----|-----|
| J03-Acute tonsillitis | f | $31_a$ | $51_b$ | $35_b$ | $12_a$ | 129 |
|  | % | 1.4 | 3.7 | 2.9 | 0.7 | 2.0 |
| M79-Other soft tissue disorders, not classified elsewhere | f | $16_a$ | $60_b$ | $29_c$ | $19_a$ | 124 |
|  | % | 0.7 | 4.3 | 2.4 | 1.1 | 1.9 |
| K52-Other non-infective gastroenteritis and colitis | f | $22_a$ | $26_a.b$ | $26_b$ | $47_b$ | 121 |
|  | % | 1.0 | 1.9 | 2.2 | 2.6 | 1.8 |
| Total | f | 2168 | 1386 | 1207 | 1789 | 6550 |
|  | % | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
Table 3
Relationship between the gender of the patients and the diagnosis

| Diagnosis                                                                 | Sex     | Male  | Female | Total |
|--------------------------------------------------------------------------|---------|-------|--------|-------|
| R50-Fever of unknown cause                                               | Male    | 999<sub>a</sub> | 859<sub>a</sub> | 1858  |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 28.4  | 28.4   | 28.4  |
| R05-Cough                                                                | Male    | 639<sub>a</sub> | 547<sub>a</sub> | 1186  |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 18.1  | 18.1   | 18.1  |
| R11-Nausea and vomiting                                                  | Male    | 299<sub>a</sub> | 294<sub>a</sub> | 593   |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 8.5   | 9.7    | 9.1   |
| R10-Abdominal and pelvic pain                                            | Male    | 219<sub>a</sub> | 240<sub>b</sub> | 459   |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 6.2   | 7.9    | 7.0   |
| J06-Acute upper respiratory tract infections, of multiple and undefined locations | Male | 247<sub>a</sub> | 206<sub>a</sub> | 453 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 7.0   | 6.8    | 6.9   |
| W19-Fall, unspecified                                                    | Male    | 272<sub>a</sub> | 164<sub>b</sub> | 436 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 7.7   | 5.4    | 6.7   |
| H66-Suppurative and unspecified Otitis media                            | Male    | 181<sub>a</sub> | 143<sub>a</sub> | 324 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 5.1   | 4.7    | 4.9   |
| R07-Pain in throat and chest                                            | Male    | 151<sub>a</sub> | 160<sub>a</sub> | 311 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 4.3   | 5.3    | 4.7   |
| R17-Jaundice, unspecified                                               | Male    | 88<sub>a</sub> | 62<sub>a</sub> | 150 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 2.5   | 2.0    | 2.3   |
| R21-Redness and other unspecified skin rash                             | Male    | 82<sub>a</sub> | 58<sub>a</sub> | 140 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 2.3   | 1.9    | 2.1   |
| P59-Neonatal jaundice due to other and unspecified causes               | Male    | 74<sub>a</sub> | 59<sub>a</sub> | 133 |
|                                                                            | Female  |       |        |       |
|                                                                            | %       | 2.1   | 1.9    | 2.0   |

Chi-Square = 41.94; df = 14; p < 0.001; each subscript letter denotes a subset of gender categories whose column proportions do not differ significantly from each other at the 0.05 level.
According to Table 3, it can be said that there is a statistically significant relationship between the gender of the patients and the diagnosis (p < 0.05). When the differences according to gender are examined, there is no difference in the first three diagnoses of “fever of unknown cause”, “cough” and “nausea and vomiting” (p > 0.05), women’s “Abdominal and pelvic pain” and “Acute tonsillitis” diagnoses are higher than men (p < 0.05). On the other hand, the rate of males is higher than females in the diagnoses of “Fall, unspecified” and “Other non-infective gastroenteritis and colitis” (p < 0.05).

| Diagnosis                                                                 | Sex | f   | a   | b   |
|----------------------------------------------------------------------------|-----|-----|-----|-----|
| R45-Symptoms and signs of emotional state                                  | f   | 63  | 70  | 133 |
| J03-Acute tonsillitis                                                      | f   | 58  | 71  | 129 |
| M79-Other soft tissue disorders, not elsewhere classified                 | f   | 75  | 49  | 124 |
| K52-Other non-infective gastroenteritis and colitis                       | f   | 76  | 45  | 121 |
| Total                                                                     | f   | 3523| 3027| 6550|

Chi-Square = 41.94; df = 14; p < 0.001; each subscript letter denotes a subset of gender categories whose column proportions do not differ significantly from each other at the 05 level.
Table 4
Relationship between patients' age group and triage status

| Age                  | 0–28 days | 29 days - 18 months | 19 months - 5 years | 6–11 years | 12–18 years | Total |
|----------------------|-----------|---------------------|---------------------|------------|-------------|-------|
| Normal               | 119<sub>a</sub> | 644<sub>b</sub>   | 2801<sub>c</sub>   | 1198<sub>b</sub> | 544<sub>d</sub> | 5306  |
| %                    | 33.5      | 82.1                | 87.2                | 82.2       | 73.9        | 81.1  |
| Urgent               | 236<sub>a</sub> | 140<sub>b</sub>   | 412<sub>c</sub>   | 260<sub>b</sub> | 192<sub>d</sub> | 1240  |
| %                    | 66.5      | 17.9                | 12.8                | 17.8       | 26.1        | 18.9  |
| Total                | 355       | 784                 | 3213                | 1458       | 736         | 6546  |
| %                    | 100.0     | 100.0               | 100.0               | 100.0      | 100.0       | 100.0 |

Chi-Square = 627.05; df = 4; p < 0.001; Each subscript letter denotes a subset of age categories whose column proportions do not differ significantly from each other at the 05 level (Bonferroni correction).

According to Table 4, it can be said that there is a statistically significant relationship between the age group of the patients and the diagnosis (p < 0.05). While the rate (66.5%) of patients between 0–28 days to have emergency triage status is the highest compared to other age groups; the lowest rate (12.8%) is between 19 months and 5 years.
Table 5
Relationship between the age group and diagnostic of the patients

| Age                  | Diagnosis                              | 0–28 days | 29 days–18 months | 19 months – 5 years | 6–11 years | 12–18 years | Total |
|----------------------|----------------------------------------|-----------|-------------------|---------------------|------------|-------------|-------|
|                      | R50-Fever of unknown cause             | f         | 24<sub>a</sub>    | 279<sub>b</sub>     | 1141<sub>b</sub>| 326<sub>c</sub> | 88<sub>a</sub> | 1858 |
|                      |                                       | %         | 6.8               | 35.6               | 35.5       | 22.4        | 12.0  | 28.4 |
|                      | R05-Cough                              | f         | 12<sub>a</sub>    | 243<sub>b</sub>     | 683<sub>c</sub>| 203<sub>d</sub>| 45<sub>a</sub> | 1186 |
|                      |                                       | %         | 3.4               | 31.0               | 21.3       | 13.9        | 6.1   | 18.1 |
|                      | R11-Nausea and vomiting                | f         | 7<sub>a</sub>     | 43<sub>a</sub>      | 276<sub>b</sub>| 153<sub>b</sub>| 114<sub>c</sub>| 593  |
|                      |                                       | %         | 2.0               | 5.5                | 8.6        | 10.5        | 15.5  | 9.1  |
|                      | R10-Abdominal and pelvic pain          | f         | 3<sub>a</sub>     | 7<sub>a</sub>       | 137<sub>b</sub>| 188<sub>c</sub>| 124<sub>c</sub>| 459  |
|                      |                                       | %         | 0.8               | 0.9                | 4.3        | 12.9        | 16.8  | 7.0  |
|                      | J06-Acute upper respiratory tract infections, of multiple and undefined locations | f | 7<sub>a</sub> | 52<sub>b</sub> | 248<sub>b</sub> | 91<sub>b</sub> | 55<sub>b</sub> | 453  |
|                      |                                       | %         | 2.0               | 6.6                | 7.7        | 6.2         | 7.5   | 6.9  |
|                      | W19-Fall. unspecified                  | f         | 0<sub>a</sub>     | 28<sub>b</sub>      | 114<sub>b</sub>| 172<sub>c</sub>| 122<sub>d</sub>| 436  |
|                      |                                       | %         | 0.0               | 3.6                | 3.5        | 11.8        | 16.6  | 6.7  |
|                      | H66-Suppurative and unspecified Otitis media | f | 0<sub>a</sub> | 7<sub>a</sub> | 236<sub>b</sub> | 69<sub>c</sub> | 12<sub>a</sub> | 324  |
|                      |                                       | %         | 0.0               | 0.9                | 7.3        | 4.7         | 1.6   | 4.9  |
|                      | R07-Pain in throat and chest           | f         | 0<sub>a</sub>     | 0<sub>a</sub>       | 126<sub>b</sub>| 118<sub>c</sub>| 67<sub>c</sub> | 311  |
|                      |                                       | %         | 0.0               | 0.0                | 3.9        | 8.1         | 9.1   | 4.8  |
|                      | R17-Jaundice. unspecified              | f         | 144<sub>a</sub>   | 3<sub>b</sub>       | 2<sub>b</sub>  | 0<sub>b</sub>  | 0<sub>b</sub> | 149  |
|                      |                                       | %         | 40.6              | 0.4                | 0.1        | 0.0         | 0.0   | 2.3  |
|                      | R21-Redness and other unspecified skin rash | f | 3<sub>a</sub> | 23<sub>a</sub> | 72<sub>a</sub> | 31<sub>a</sub> | 11<sub>a</sub> | 140  |
|                      |                                       | %         | 0.8               | 2.9                | 2.2        | 2.1         | 1.5   | 2.1  |

Chi-Square = 6354.3; df = 56; p < 0.001; Each subscript letter denotes a subset of age categories whose column proportions do not differ significantly from each other at the 05 level (Bonferroni correction).
According to Table 5, it can be said that there is a statistically significant relationship between the age group of the patients and the diagnosis ($p < 0.05$). In the first three most common diagnoses; it can be said that the diagnosis of "fever of unknown cause" is higher in patients aged from 29 days to 5 years compared to patients in the other age group ($p < 0.05$). In the age group of 29 days – 18 months, the diagnosis of "cough" (31%) was higher than the other age groups ($p < 0.05$), and the diagnosis of "nausea and vomiting" was higher in patients aged 19 months or older compared to other patients ($p < 0.05$).
A recipe was not prescribed for 94.8% of the patients (n = 6211), and a recipe was prescribed for 5.2% (n = 339). While a consultation was requested in 197 patients once, 12 patients twice, one patient thrice, and totally for 3.2% of the total patients, consultation was not requested for 96.8%. One diagnosis was made for 85% of the patients (n = 5584), two for 13.8% (n = 901), three for 0.9% (n = 58) and four for 0.1% (n = 7). 3.6% (n = 238) of the patients were hospitalized. There is no patient who underwent surgery.

4. Discussion

In this study, in which all patients under the age of 18, who applied to the hospital PES, were examined by using data obtained from the data processing center of a foundation university hospital in Ankara 6550 paediatric patients (with the first 15 diagnoses seen the most) out of a total of 16.383 patients were included in the study.
Although it is stated that there are deficiencies in the hospital registry system from which patient data is obtained, it is still the most reliable system. (13.14.15)

A significant portion of the applications in the study were non-emergency patients (81%), and there were no patients in the “very urgent” category (0%). Although the results coincide with the findings of the studies in the literature, the rate of “non-emergency patients” is higher, and there is no application in the “very urgent patient” group.

The rate of emergency triage status (20.1%) of male patients, who applied to PES, is higher than that of women. The top three most common diagnoses are: "Fever of unknown cause", "Cough" and "Nausea and vomiting".

When the differences according to gender are examined, while there is no difference in the first three diagnoses "Fever of unknown cause", "Cough" and "Nausea and vomiting", women and girls have higher diagnoses of "Abdominal and pelvic pain" and "Acute tonsillitis" than men; the diagnoses of 'Falls, unspecified' and 'Other non-infective gastroenteritis and colitis' are also higher in men.

When we look at the distribution of diagnoses; while "Soft tissue injury" constituted the majority of the reasons for applying to PES in Erzurum in the study of Polat et al., there were Fever (22%), Cough (16%) and Nausea-vomiting (10%) in the first three places in the study of Karakaş et al. that they did in Ankara. It was observed in this study made in Ankara that the first three most common diagnoses were "Fever of unknown cause" (28%), "Cough" (18%) and "Nausea and vomiting" (9%) respectively. Accordingly, while the diagnoses of admission to the PES in the same region are similar, they differ in different regions. (2,16)

When we look at the distribution of application rates by age group; in the study of Karakaş et al.; the least application was with 2% in the neonatal period (0–28 days) and with 66% between the ages of 1 month and 6 years. In this study, the age group of 0–28 days applied the least with 5.4%, the pre-school period, which is 19 months-5 age group, applied the most with 49.1%. These results in the two studies are similar. (2)

Another finding obtained in the study is that there is a relationship between the age group of the patients and their triage codes. It was observed in the study that the patients between 0–28 days was the least applied group with 5%, besides they had the highest emergency triage status with 66.5% and that the age group of 19 months-5 with the highest number of applications with 49% had the lowest emergency triage rate with 12.8%. We can associate this situation with the fact that families do not apply during the newborn period unless there are situations that we can describe as real emergencies and/or they do not experience a process that requires them to apply to the emergency in this age group. Similarly, we can say that families of the preschool period, which is 19 months-5 years, apply to emergency services in almost every complaint of their children, although it is not considered urgent and/or they go through the process that makes them think about applying to the emergency department in this age group.
When the differences according to gender in application to PES are examined in the study of Polat et al.; soft tissue injury with 62%, intoxication with 75%, and burns with 63% are more frequent in males; foreign body aspiration with 66.7% is more frequent in females. While there was no difference in terms of gender in the first three most common diagnoses in this study, whereas women were higher in "Abdominal and pelvic pain" and "Acute tonsillitis" diagnoses; the proportion of males were higher in the diagnoses of "falls, unspecified" and "other non-infective gastroenteritis and colitis".

Looking at the consultation rates, consultation was requested for 0.27% of the patients in the study of Çevik et al., which included all emergency department (adult and children) patients, and 12.5% of the patients in Yüksel’s study, which included only adults (over 18 years old) emergency applications, (14) consultation was requested for 3.2% in this study.

In the study of Polat et al., 97% of the patients were discharged and 3% were hospitalized. In the study of Karakaş et al.; while 49% of the patients were prescribed and underwent outpatient treatment, 48% were sent with recommendations without prescription, and approximately 2% of the patients were hospitalized in service and intensive care. (2,16)

According to the findings obtained in this study, 95% (n = 6211) of the patients were not prescribed a recipe, and 5% (n = 339) were prescribed. One diagnosis was made for 85% of the patients (n = 5584), two for 13.8% (n = 901), three for 0.9% (n = 58) and four for 0.1% (n = 7). 4% (n = 238) of the patients were hospitalized. There is no patient who underwent surgery. Hospitalization rates are similar to the literature.

**Limitations**

This research data is limited to the 2018 data of a Foundation University hospital in Ankara. These results may differ in smaller residential units or in public health units PES. Moreover, it should be noted that there might be differences in results due to the Covid-19 pandemic process in 2020.

**5. Conclusions**

Inappropriate use of ESs has always been a major problem. Many patients prefer ESs in order not to wait in line and easy access to it. It was found that 25% of the patients who applied for minor reasons preferred ES because other clinics were closed. (14)

In this study, 81% of the patients were green areas, 19% were yellow areas, and there were no patients with red areas. The observed high rate of “non-emergency” patients can be explained by the fact that it was thought that there was no remuneration in ES, not wanting to wait in line in polyclinics for reasons such as time constraints due to parents working etc. or that the aforementioned foundation hospital’s are in a central location in the capital city and that additional examination fees to be requested etc. are more affordable than other private institutions.
There are many studies about the reasons affecting the applications of PES. Generally, it is seen that these studies are based on the diagnosis distribution.\(^2\)

In this study, the distribution of diagnoses of the patients admitted to the emergency department was examined according to various factors such as age group, gender, and season, and regional differences were observed in common diagnoses in the studies in the literature.

The characteristics of our patients in Emergency Departments are fundamentally no different from those in the world. Inappropriate use of ESs has always been a major problem. Most patients prefer ESs because they do not want to wait in a line and that they can go at any time of the day that is convenient for them. The use of emergency services by unsuitable patients is a universal problem. emergency services are preferred by patients and their relatives who do not require urgent intervention in our country as in all countries. While the admissions of unsuitable patients to the emergency department prevent the provision of services to real patients and the preparedness of the emergency service on the one hand, on the other hand, it decreases the quality of service provision and increases costs.\(^2, 10, 17\)

In the study, it was found that a significant part of the applications to the PESs were non-emergency patients (81%) and there were no patients in the "very urgent" category. Although the results coincide with the findings of the studies in the literature; the high rate of non-emergency patients is higher than other studies, and there are no patients with very urgent cases.

In the light of these results, it is thought that the reasons for the application of PES may differ according to contextual variables, so that giving information to parents from reliable sources of information can reduce unnecessary anxiety of parents and in this way reduce emergency service admissions. We think that by increasing the functionality of primary health care services, the implementation of the referral system will contribute to preventing the intensities arising from the misuse of paediatric emergency services and ensuring that they are used for their intended purpose. Thus, the loss of time and labour in health expenditures and economic loss will be eliminated. As a result, we anticipate that with the increase of time and financial means to be allocated for emergency patients, quality services will be provided, and the quality of healthcare services will increase.

**Declarations**

**Acknowledgements**

ED: Emergency Department

PES: Paediatric Emergency Services

**Authors’ Contribution**

The entire article has been prepared by its author.
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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

Approval number 2020/67 was obtained from Ufuk University Faculty of Medicine Non-Invasive Clinical Research Evaluation Commission for this study. The author declares that the rules of research and publication ethics are followed (24.12.2020 Date, Approval Number 2020/67).

Consent to participate

Not applicable

Consent to publication

Not Applicable

Since descriptive images or other personal details of the patients were not presented in the study, consent was not obtained from the patients. Therefore, the permission to publish cannot be applied for this article.

Competing interests

The Author declared that there is no conflict of interest.

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