BMC Primary Care

RESEARCH Open Access

The role of family health centres in preventing paediatric emergency department usage of parents of children with non-urgent conditions

Ahmet Butun[1*]

Abstract

Background Overcrowding in paediatric emergency departments (PEDs) has become a global public health issue, reducing healthcare quality, increasing dissatisfaction, and driving up costs. Overcrowding in PEDs not only affects patient satisfaction and healthcare costs but also can lead to burnout among healthcare professionals. This burnout could potentially result in suboptimal care for truly severe cases, ultimately increasing morbidity and mortality rates among patients requiring urgent attention. This study aims to determine how family health centres can reduce paediatric visits to PEDs and provide recommendations for alleviating overcrowding.

Methods This study is a descriptive cross-sectional study. Participants were parents whose children were admitted to the PED at a tertiary hospital located in southeast Turkey. The data were collected between 15/05/2024–26/08/2024. This study was completed with 657 parents. A convenience sampling method was used to recruit participants. SPSS 11.5 software was used for data analysis.

Results The mean age of the parents and children brought to the PED was 31.99 ± 8.51 years and 4.20 ± 4.08 years, respectively. Of the children, 32.1% were admitted to the PED due to fever. Majority of parents (65%) visited the PED outside working hours. 8.8% of parents considered their child's health condition as "very urgent", 54.5% of them considered it as "urgent". The majority of parents thought that the PEDs were overcrowded (82.2%). 50.4% of the parents stated that they trusted the PED, and 52.7% stated that they were satisfied with the PED. More than half of the parents (61.8%) stated that they did not visit their family health centre before visiting the PED. 10.8% of parents reported that they had never visited a family health centre in the last year. Majority of parents (62.7%) stated that they will visit the PED again if their children have the same health problems in the future.

Conclusion Improving the use of family health centres, introducing out-of-hours services, and enhancing parents' health literacy could shift non-urgent visits from PEDs to primary care settings. In addition, making parents more aware of services provided in family health centres could affect parents' health-seeking behaviours and choose to use their GP rather than PED for their children with non-urgent conditions.

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Keywords Emergency department, Paediatric emergency department, GP practice, Family health centres, Primary care, Non-urgent, Visit, Utilisation, Health literacy

Introduction

The problem of overcrowding in Paediatric Emergency Departments (PEDs) has emerged as a global public health problem [1, 2]. Overcrowding in PEDs has become an important public problem that threatens all individuals by reducing the quality of healthcare services, causing dissatisfaction among patients and healthcare staff, and increasing healthcare costs [2, 3]. PED overcrowding causes many negative and serious problems. Increasing the use of PED has resulted in increased workload, decreased quality of care, increased mortality rate, staff burnout, causes stress in the staff, causes long waiting times, increased resource use, and healthcare costs [4–9]. The continued increase in PED admissions is unsustainable, and interventions are needed to safely decrease the number of admissions [10], specifically those with non-urgent conditions. Therefore, it is crucial to develop strategies to reduce the number of patients who visit the PEDs.

Reasons for parental use of PED included easy access, parental perception of they would receive better quality of care, convenience of PEDs, and serving 24 h a day [3, 11]. In addition, parents prefer to use PED due to low level of education, perceived urgency [6, 12], being first-time parents, higher level of parental stress, fear, reassurance, and the perception that PEDs provide better care than primary care settings [12, 13]. Parental reasons for not using their General Practitioner (GP) included that having problems with their GP, unavailability of GP out-of-hours, dissatisfaction with staff, negative staff attitudes toward patients, mistrust, unable to receive enough information [13]. In addition, performing limited interventions in GP clinics, having limited resources, having limited working hours, and unable to get enough information from GP are other reasons for not using the GP and use the PED instead [3].

Studies have shown that the health problems of many children admitted to the PED could be managed in primary healthcare settings [14–19]. A recent review highlighted that 40% of emergency department patients were discharged without treatment [20], suggesting that they had presented with non-urgent conditions. Underperforming family health centres have a direct impact on PED visits [21–23]. Some studies support the important role of family health centres in preventing non-urgent admissions to PEDs. Family health centres could reduce the burden on PEDs and promoting appropriate use of healthcare resources. Improving the quality of care provided in family health centres could reduce the number of patients admitted to PEDs [19]. In addition, it has been determined that increasing the accessibility of family health centres reduces non-urgent admissions to emergency care settings [24, 25]. A study conducted in Turkey found that quality improvement efforts were related to higher use of family health centres [26] which means less visits to emergency department settings. Another study conducted in Turkey revealed that informing parents regarding child health diseases and using their family health centres as the point of first contact could reduce the number of children with non-urgent conditions to the PED [24].

Understanding parents' engagement with primary healthcare facilities before they visit the PED is crucial for healthcare staff and policymakers. Although there are many studies on overcrowding in emergency department settings, studies on how primary care settings can play a role in reducing the number of patients admitted to the PED, especially those who present with non-urgent conditions, are limited. Developing strategies on how family health centres, which provide primary healthcare services, can reduce the number of patients admitted to PEDs will contribute to alleviating such global problems. Therefore, there is need for determining how family health centres could reduce paediatric visits to PEDs and provide recommendations for alleviating PED overcrowding accordingly. The aim of this study was to determine the role of family health centres in preventing paediatric visits to PEDs and to develop recommendations to alleviate overcrowding in PED settings.

Methods

Design

This study is a descriptive cross-sectional study.

Participants and settings

Participants were parents of children with non-urgent conditions admitted to the PED at Mardin Education and Training Hospital, Mardin, Turkey.

Inclusion Criteria:

- Parents of children aged 0–12 years who visited PED during the study period.
- Parents whose children presented with conditions classified as non-urgent.
- Non-urgent condition is defined as the condition of those who triaged as yellow zone during triage process.
- Participants who were willing to provide informed consent and complete the questionnaire.

Exclusion Criteria:

- Parents whose children had urgent or life-threatening conditions that required immediate emergency care.
- Those who were unable or unwilling to provide informed consent.
- Parents with children receiving follow-up treatment for previously diagnosed urgent conditions.

Data collection

The data were collected between 15/05/2024–26/08/2024. Mardin Training and Research Hospital is a tertiary hospital with a 700-bed capacity, and its PED serves an average of 400 children daily and approximately 140,000 children annually. The minimum sample size was determined as $n=384$, with a 50% incidence rate at a 95-confidence interval using the Samp Size website. This study was completed with 657 parents. The survey was developed by the researcher (A.B.) based on the current literature. This survey was piloted with 5 participants and amended based on feedback received before the actual data collection process. Convenience sampling was used to recruit participants. The researcher (A.B.) invited participants to the study, and the survey was administered to those who agreed to participate. The questions were asked by the researcher (A.B.) to the participants face-to-face, and their answers were recorded on Google Forms. Following such approach allows to collect more reliable data.

Data collection form

The data collection form included sociodemographic variables such as age of child and parent, gender, education level of parents, family income, and occupation of parent. In addition, the second part of the form included questions regarding participants' experiences with PED such as the time slot for admission to the PED, child health complaint, perception of urgency of the condition of the child, any action to address child's health problems visiting the PED, how many times the child visited the PED, level of satisfaction with the PED, and the level of trust in the PED. Moreover, the last part of the form included parents' reasons for using PED, reasons why parents do not prefer to use family health centres, and parents' recommendations for increasing the use of family health centres for their children.

Data analysis

SPSS 11.5 software was used for data analysis. Mean±standard deviation and median (minimum-maximum) were used as descriptors for quantitative variables, and the number of participants (percentage) was used for qualitative variables. Chi-square test was used to examine the relationship between two qualitative variables. The statistical significance level was set at 0.05.

Ethical considerations

Ethical approval was obtained from Mardin Artuklu University Non-Invasive Clinical Research Ethics Committee (Date: 08/01/2024, Reference number: 2024/1–11). In addition, institutional permission was obtained from the Mardin Provincial Directorate of Health (Date: 18/01/2024, Reference number: E-68051626-770-234478062). Also, informed consent was obtained from all participants. The study was carried out in accordance with the principles of the Declaration of Helsinki.

Results

Demographic characteristics of the participants

The mean age of the parents of the children included in the study was 31.99±8.51 years. Of the participants, 60.7% were female and 39.3% were male. Of the parents, 23.4% were primary school graduates, 37% were high school graduates, 36.3% were bachelor's degree graduates, 2.7% were master's degree graduates, and 0.6% were doctorate graduates. Considering the income level, the income level of 17.8% of parents was less than their expenses, the income of 65.2% of parents was equal to their expenses, and the income of 17% of parents was more than their expenses. While 30% of the parents were housewives, 9.7% were self-employed, 8.5% were civil servants, 7.2% were nurses, 6.8% were teachers, and 30% were other occupational groups. In addition, 16.7% of the parents lived in the village, 34.6% in the district, and 48.7% in the province (Table 1).

Parents' experiences with paediatric emergency department

Of the parents, 35% visited the PED between 08:00–17:00, while 39.1% visited between 17:00–24:00 and 25.9% visited between 00:00–08:00. The mean age of children brought to the PED was 4.20±4.08 years. Of the children, 32.1% were admitted to the PED due to fever, 10.5% due to upper respiratory tract infection, 9% due to diarrhoea and the remaining children due to other health complaints. Although 8.8% of the parents stated that their child's health condition was very urgent, 54.5% stated that it was urgent, 31.8% stated that it was semi-urgent (normal), and 4.9% reported that it was not urgent. In addition, 14.8% of the parents did not apply any procedures before bringing their children to the PED, 38.2% applied herbal and other treatment methods, 35.4% used medication, and 16.6% used medication and hot-cold application. While 13.1% of the participants stated that

Table 1 Demographic characteristics of the participants

Variables		
Parents age	Mean ± SD	31.99 ± 8.51
	Median (Min-Max)	30.00 (15.00–76.00)
Gender of parents, n (%)	Female	399 (60.7)
	Male	258 (39.3)
Educational status, n (%)	Primary School	154 (23.4)
	High School	243 (37.0)
	Undergraduate	238 (36.3)
	Master's Degree	18 (2.7)
	Doctorate Degree	4 (0.6)
Income level, (n (%)	Income is less than expenditure	117 (17.8)
	Income equivalent to expenses	428 (65.2)
	Income is more than expenditure	112 (17.0)
Occupation, n (%)	Housewife	197 (30.0)
	Self-Employment	64 (9.7)
	Civil servant	56 (8.5)
	Nurse	47 (7.2)
	Teacher	45 (6,8)
	Police	13 (2.0)
	Engineer	12 (1.8)
	Doctor	8 (1,2)
	Midwife	8 (1,2)
	Academician	6 (0.9)
	Other	201 (30.7)
Place of residence, n (%)	Village	110 (16.7)
	District	227 (34.6)
	Province	320 (48.7)

Mean: Mean, SD: Standard deviation

they used the PED 10 times in the last year, 18.6% stated that they used the PED 11 or more times.

When the parents' satisfaction with the care they received in the PED was evaluated, 52.7% of the parents were satisfied, 13.2% were not satisfied, and 34.1% were partially satisfied. 50.1% of the parents stated that the time allocated to their children for treatment and care was sufficient, 20.4% stated that it was not sufficient, and 29.5% stated that it was partially sufficient. Most of the parents (62.7%) stated that they will visit the PED again if their children have the same health problems in the future. The majority of parents thought that the PEDs were overcrowded (82.2%). 50.4% of the parents stated that they trusted the PED, and 52.7% stated that they were satisfied with the PED. It was determined that 74.4% of the children brought to the PED did not have any chronic diseases. Further participants' experiences with the PED are presented in Table 2.

Parents experiences with and perceptions on family health centres

More than half of the parents (61.8%) stated that they did not visit the family health centre before visiting the PED. Of the parents, 54% stated that they consider going to their GP if their child has the same health problem in the future. Of the parents, 10.8% reported that they had never visited a family health centre in the last year. While 57.7% of the participants reported that they trusted the family health centre, 7.5% reported that they did not trust. When asked about the level of satisfaction with family health centres, 57.2% of the parents stated that they were satisfied, while 7.9% stated that they were not satisfied. The question of "how effective do you find it in managing your child's health problem when you visit the family health centres instead of visiting the PED?" was answered by the parents, and 5.3% of them answered "very effective," 57.4% of them answered "effective," 10.8% of them answered "ineffective," and 2.1% of them answered "not effective at all". While 36.3% of the parents believed that their child's health problems could be solved if they visited their GP for health problems, 22.5% believed that their child's health problems could not be improved by visiting their GP. While more than half of the parents (55.9%) stated that they knew about the services offered by family health centres, 19.2% of parents stated that they had limited knowledge. While 41.4% of the parents believed that family health centres could reduce non-urgent paediatric admissions to the PED, 48.7% of parents believed that they could partially reduce such admissions, and 9.9% believed that they could not help alleviating PED visits. Considering the parents' preference for visiting family health centres before visiting the PED, 12.8% of the parents stated that they would not prefer it at all, 46% stated that they rarely preferred it, 6.1% stated that they never thought about this option, 29.6% stated that they generally thought about it, and 5.5% stated that they always thought about this option. The parents' views on family health centres were provided in Table 3.

Parents' reasons for using PED, reasons for why parents do not prefer to use family health centres, and recommendations for increasing the use of family health centres

Parents' reasons for bringing their children to the PED included receiving faster service/care (31.4%), not wanting to wait in line at the outpatient clinic (22.5%), outpatient clinics are closed/there is currently no physician at outpatient clinics (20.2%), and unable to get an appointment from outpatient clinics (8.7%). The reasons why parents do not prefer to use family health centres included that limited working hours of family health centres (25.1%), lack of trust in their GP (22.1%), unable to receive information from the GP about the disease and treatment (12.9%), and limited interventions in family health centres (9.6%). Parents provided recommendations to increase the use of family health centre for their children in the future. These recommendations included

Table 2 Parents' experiences with paediatric emergency department

Variables		*n* (%)
Time slot for admission to the PED	08:00–17:00	230 (35.0)
	17:00–24:00	257 (39.1)
	24:00–08:00	170 (25.9)
Age of the child when brought to the PED	Mean ± SD	4.20 ± 4.08
	Median (Min-Max)	3.00 (0.00–22.00)
Child health complaint	Allergy	24 (3.7)
	Fever	211 (32.1)
	Headache	29 (4.4)
	Dizziness	7 (1.1)
	Sore throat	18 (2.7)
	Chest pain	10 (1.5)
	Blackout	3 (0,5)
	Fatigue	38 (5.8)
	Diarrhoea	59 (9.0)
	Stomach-ache	37 (5.6)
	Vomiting	53 (8,1)
	Shortness of breath	39 (5.9)
	Cough	18 (2.7)
	Upper respiratory tract infection	69 (10.5)
	Other	42 (6.4)
How urgent do you think your child's health condition is?	Not urgent	32 (4.9)
	Semi-urgent (normal)	209 (31.8)
	Urgent	358 (54.5)
	Very urgent	58 (8,8)
Did you take any action to address your child's health problems before visiting the PED? (More than one option could be answered)	Herbal treatment	251 (38.2)
	Medication	232 (35.4)
	Cold-hot application	97 (14.8)
	No	97 (14.8)
	Massage	18 (2.7)
How many times have you brought your child to the PED within the last 1 year?	1	32 (4.9)
	2	80 (12,2)
	3	75 (11.4)
	4	48 (7.3)
	5	111 (16.9)
	6	56 (8.5)
	7	13 (2.0)
	8	16 (2.4)
	9	18 (2.7)
	10	86 (13.1)
	11 and more	122 (18.6)
Are you satisfied with the care your child received in the PED?	Yes	346 (52.7)
	No	87 (13.2)
	Partially	224 (34.1)
Was the time allocated to your child for treatment and care in the PED sufficient?	Yes	329 (50.1)
	No	134 (20.4)
	Partially	194 (29.5)
Would you visit the PED again if your child have the same condition in the future?	Yes	412 (62.7)
	No	121 (18.4)
	Partially	124 (18.9)
Do you think the PED is crowded?	Yes	540 (82.2)
	No	35 (5.3)
	Partially	82 (12.5)

Table 2 (continued)

Variables		*n* (%)
To what extent do you trust the PED?	Trust a lot	39 (5.9)
	Trust	331 (50.4)
	Undecided	199 (30.3)
	I do not trust	79 (12.0)
	I do not trust at all	9 (1,4)
What is your level of satisfaction with the PED?	Very satisfied	38 (5.8)
	Satisfied	338 (51.4)
	Undecided	185 (28.2)
	Dissatisfied	83 (12,6)
	Very unsatisfied	13 (2.0)
Does your child have a chronic illness?	Yes	168 (25.6)
	No	489 (74.4)
If your child has a chronic disease, how much support do you receive from family health centres for the management and treatment of this disease?	I receive a lot of support	18 (2.7)
	I am receiving support	132 (20.1)
	I am not sure	201 (30.6)
	I am receiving little support	77 (11.7)
	I am not getting any support	229 (34.9)

Mean: Mean, SD: Standard deviation

family health centres should be more effective (49.6%), the procedures that can be performed in the family health centre (blood collection, injection, test, etc.) should be increased (39.7%), out-of-hours services should be established (39.3%), resources in family health centres should be increased (36.1%), and the experiences of the staff working in family health centres (doctor, nurse, midwife) should be improved (28.3%) (Table 4).

Other comparisons

In Table 5, comparisons were examined in terms of the answers given to the questions between the patients who visited their GP and those who did not visit their GP before going to the PED. 5.2% of the parents who visited their GP before visiting the PED stated that their child's condition was very urgent, 66.5% stated that it was urgent, 24.3% stated that it was semi-urgent (normal) and 4% stated that it was not urgent ($p<0.001$). 11.1% of the parents who did not visit their GP before visiting the PED stated that their child's condition was very urgent, 47% stated that it was urgent, 36.5% stated that it was semi-urgent (normal) and 5.4% stated that it was not urgent ($p<0.001$). 8.4% of the parents who visited the GP before visiting the PED did not apply any procedure for the child's health problem before visiting the PED, 38.7% stated that they gave medication, 13.9% stated that they applied cold-warm application, 15.1% stated that they applied both medication and cold-warm application, and 23.9% stated that they performed other applications. 18.5% of the parents who did not visit the GP before visiting the PED did not apply any procedure for the child's health problem before visiting the PED, 33% stated that they gave medication, 11.1% stated that they applied cold-warm application, 11.8% stated that they applied both medication and cold-warm application, and 25.6% stated that they performed other applications ($p=0.005$).

Among the parents who visited the GP before visiting the ED, 55.8% stated that they would visit the ED again if their child had the same complaint in the future, 20.7% stated that they would not visit, and 23.5% stated that they were undecided. While 67% of the parents who did not visit the GP before visiting the ED stated that they would visit the ED again if their child had the same complaint in the future, 17% of them stated that they would not visit, and 16% of them stated that they were undecided ($p=0.012$). 6.4% of the parents who visited the GP before visiting the PED stated that they trusted family health centres very much, 70.9% stated that they trusted them, while 3% of the parents who did not visit the GP stated that they trusted family health centres very much, 49.8% stated that they trusted them ($p<0.001$). 8.8% of the parents who visited the GP before visiting the ED stated that they were very satisfied with the family health centres, 70.9% stated that they were satisfied with the family health centres, while 3.4% of the parents who did not visit the GP before visiting the GP stated that they were very satisfied with the family health centres, 48.8% stated that they were satisfied with the family health centres ($p<0.001$) (Table 5).

The question of "how effective do you find it in managing your child's health problem when you visit the family health centres instead of visiting the PED?" was answered by parents who visited their GP before visiting the ED; 7.2% of them found it very effective, while 70.9% of the parents found it effective. That question was answered by those who did not visit the GP before

Table 3 Parental views on questions about family health centres

Variables		*n* (%)
Did you visit your GP before visiting the PED?	No	406 (61.8)
	Yes	251 (38.2)
Would you consider going to the GP if your child has the same condition in the future?	Yes	355 (54.0)
	No	175 (26.6)
	Partially	127 (19.3)
How many times have you visited the family health centre for your child in the last 1 year?	Never	71 (10.8)
	1–3 times	344 (52.4)
	4–6 times	163 (24.8)
	7–9 times	44 (6.7)
	10+	35 (5.3)
What type of trust do you have in family health centres?	Trust a lot	28 (4.3)
	Trust	380 (57.7)
	Undecided	183 (27.9)
	I do not trust	49 (7.5)
	I do not trust at all	17 (2.6)
What is your level of satisfaction with family health centres?	Very satisfied	36 (5.5)
	Satisfied	376 (57.2)
	Undecided	183 (27.9)
	Dissatisfied	52 (7.9)
	Very unsatisfied	10 (1.5)
How effective do you find it in managing your child's health problem when you visit family health centres instead of visiting the PED?	Very effective	35 (5.3)
	Effective	377 (57.4)
	I am not sure	160 (24.4)
	Ineffective	71 (10.8)
	Not effective at all	14 (2.1)
Do you believe that your child's health problem would be solved if you went to the GP for your child's current health problem?	Yes	238 (36.3)
	No	148 (22.5)
	Partially	271 (41.2)
How much do you know about services offered by family health centres?	I am very knowledgeable	32 (4.9)
	I am knowledgeable	367 (55.9)
	I am not sure	120 (18.2)
	I have limited experience	126 (19.2)
	I do not have any information	12 (1.8)
Do you think you will be able to benefit more from health services if you go to the family health centre before going to the PED?	Definitely yes	150 (22.8)
	Yes	222 (33.8)
	I am not sure	192 (29.2)
	No	82 (12.5)
	Definitely not	11 (1.7)
When you visited the PED, did you think that your visit to the family health centre could help prevent PED visits?	Yes, absolutely	133 (20.2)
	Yes, a little	209 (31.9)
	I am not sure	169 (25.7)
	No, I did not think	35 (5.3)
	No, I did not think that at all	111 (16.9)
Do you think that family health centres could reduce non-urgent patient admissions to the PED?	Yes	272 (41.4)
	No	65 (9.9)
	Partially	320 (48.7)
How much do you prefer to visit family health centres before going to the PED?	Always	36 (5.5)
	Usually	195 (29.6)
	I have never thought about it	40 (6.1)
	Rarely	302 (46.0)
	I would not like it at all	84 (12.8)

Table 4 Parents' reasons for using PED, reasons they do not prefer to use family health centres, and recommendations for increasing the use of family health centres

Variables		*n* (%)
Parents' reasons for using PED (More than one option could be answered)	I get faster service/care in the PED	206 (31.4)
	I do not want to wait in line at the outpatient clinic	148 (22.5)
	Normal outpatient clinics are closed/there are currently no physicians there	133 (20.2)
	Unable to make an appointment in time at the outpatient clinic	57 (8.7)
	Other	113 (17.2)
Reasons why parents do not prefer to use family health centres (More than one option could be answered)	Limited working hours	165 (25.1)
	I do not trust my GP	145 (22.1)
	I do not receive enough information from my GP regarding the disease and treatment process	85 (12.9)
	Limited interventions at family health centres	63 (9.6)
	Other	199 (30.3)
Parents' recommendations for increasing the use of family health centres for their children in the future (More than one option could be answered)	Making family health centres more effective	326 (49.6)
	Increasing the number of interventions (blood collection, injection, test, etc.) that can be performed in the family health centre	261 (39.7)
	Introducing out-of-hours services	258 (39.3)
	Increased resources in family health centres	237 (36.1)
	Improving the experiences of the staff working in family health centres (doctor, nurse, midwife)	186 8.3)

visiting the ED, and 4.2% and 49% of the parents found it effective ($p<0.001$). 45.8% of the parents who visited the GP before visiting the PED answered yes and 14.7% answered no to the question "Do you believe that your child's health problem would be solved if you went to the GP for your child's current health problem?". 30.3% of the parents who did not visit the GP before visiting the ED answered that question as yes and 27.3% of them answered no ($p<0.001$). 65.7% of the parents who visited the GP before visiting the ED and 49.7% of the parents who did not visit the GP before visiting the ED stated that they had sufficient knowledge about the services provided by the GPs ($p=0.001$) (Table 5).

Table 6 presents the comparisons in terms of the answers provided to the questions between parents who are considering and those who are not considering visiting their GP in the future for their children with the same health problems. While 60% of the parents who considered going to the GP if their child had the same complaint in the future stated that their child's health condition was urgent, 50.9% of the parents who did not consider going to the GP if their child had the same complaint in the future stated that their child's condition was urgent ($p=0.012$). If the child has the same complaint in the future, 26.3% of parents who did not consider going to the GP gave medication to their child before going to the PED, 13.1% applied cold-hot application, 10.3% applied both medication and hot-cold application, and 30.9% applied to other applications (Table 6).

While 77.8% of the parents who considered going to the GP if their child had the same complaint in the future stated that they trusted family health centres, this rate was 26.3% among parents who did not consider going to the GP if their child had the same complaint in the future ($p<0.001$). While 78% of the parents who considered going to the GP if their child had the same complaint in the future stated that they were satisfied with their family health centre, this rate was 26.3% in parents who did not consider going to the GP if their child had the same complaint in the future ($p<0.001$) (Table 6).

The question of "how effective do you find it in managing your child's health problem when you go to family health centres instead of going to the PED?" was asked to participants: 71% of parents who considered going to the GP doctor if their child had the same complaint in the future gave an answer of "effective", 36.6% of parents who did not plan to go to the GP if their child had the same complaint in the future gave an answer of "effective", and 48% of parents who partially consider going to the GP if their child has the same complaint in the future are effective ($p<0.001$). The question of "Do you believe that your child's health problem would be solved if you went to the GP for your child's current health problem?" was answered by 47.3% of the parents who considered going to the GP if their child had the same complaint in the future as "yes", 19.4% of the parents who did not plan to go to the GP if their child had the same complaint in the future as "yes", and 28.4% of the parents who partially considered going to the GP if their child had the same complaint in the future as "yes" ($p<0.001$). 63.4% of the parents who considered going to the GP if their child had the same complaint in the future, 49.1% of the parents who did not consider going to the GP if their child had the same complaint in the future, and 44.1% of the parents who partially considered going to the GP if their child had the same complaint in the future reported that they had sufficient information about the services offered by family health centres ($p=0.001$) (Table 6).

Discussion

This study revealed the characteristics of parents of children who visited the PED, the most common child's health complaint, their perception regarding the urgency

Table 5 Comparison of variables between patients who visited the GP before and who did not visit the GP before PED visit

Variables		Did you visit your GP before visiting the PED?		p-value
		Yes, n (%)	No, n (%)	
How urgent do you think your child's health condition is?	Very urgent	13 (5.2)	45 (11.1)	< 0,001
	Urgent	167 (66.5)	191 (47.0)	
	Semi-urgent (normal)	61 (24.3)	148 (36,5)	
	Not urgent	10 (4.0)	22 (5,4)	
Did you take action to address your child's health problems before visiting the PED?	No	21 (8.4)	75 (18.5)	0,005
	Medication	97 (38.7)	134 (33.0)	
	Cold-hot application	35 (13,9)	45 (11.1)	
	Medication and cold-hot application	38 (15.1)	48 (11.8)	
	Other	60 (23.9)	104 (25.6)	
Are you satisfied with the care your child received in the PED?	Yes	136 (54.2)	210 (51.7)	0.377
	No	37 (14.7)	50 (12.3)	
	Partially	78 (31.1)	146 (36.0)	
To what extent do you trust the PED?	Trust a lot	21 (8.4)	18 (4.4)	0.246
	Trust	119 (47.4)	212 (52.2)	
	Undecided	80 (31.8)	119 (29.3)	
	Do not trust	28 (11.2)	51 (12.6)	
	Do not trust at all	3 (1.2)	6 (1.5)	
What is your level of satisfaction with the PED?	Very satisfied	16 (6.4)	22 (5,4)	0.938
	Satisfied	126 (50.2)	212 (52.2)	
	Undecided	73 (29.1)	112 (27.6)	
	Dissatisfied	32 (12.7)	51 (12,6)	
	Very dissatisfied	4 (1.6)	9 (2.2)	
Would you visit the PED again if your child have the same condition in the future?	Yes	140 (55.8)	272 (67.0)	0,012
	No	52 (20.7)	69 (17.0)	
	Partially	59 (23.5)	65 (16.0)	
How you trust in family health centres?	Trust a lot	16 (6.4)	12 (3.0)	< 0,001
	I trust	178 (70.9)	202 (49.8)	
	Undecided	46 (18.3)	137 (33.7)	
	I do not trust	8 (3.2)	41 (10.1)	
	I do not trust them at all	3 (1.2)	14 (3.4)	
What is your level of satisfaction with family health centres?	Very satisfied	22 (8.8)	14 (3.4)	< 0,001
	Satisfied	178 (70.9)	198 (48.8)	
	Undecided	38 (15.1)	145 (35.7)	
	Dissatisfied	12 (4.8)	40 (9.9)	
	Very dissatisfied	1 (0.4)	9 (2.2)	
How effective do you find it in managing your child's health problem when you visit family health centres instead of visiting the ED?	Very effective	18 (7.2)	17 (4.2)	< 0,001
	Effective	178 (70.9)	199 (49.0)	
	I am not sure	36 (14.3)	124 (30.5)	
	Ineffective	14 (5.6)	57 (14.0)	
	Not effective at all	5 (2.0)	9 (2.2)	
Do you believe that your child's health problem would be solved if you went to the GP for a health examination?	Yes	115 (45.8)	123 (30.3)	< 0,001
	No	37 (14.7)	111 (27.3)	
	Partially	99 (39.5)	172 (42.4)	
How much do you know about services offered by family health centres?	I am very knowledgeable	12 (4.8)	20 (4.9)	0.001
	I am knowledgeable	165 (65.7)	202 (49.7)	
	I am not sure	32 (12.7)	88 (21.7)	
	I have limited experience	40 (15.9)	86 (21.2)	
	I do not have any information	2 (0.8)	10 (2.5)	

Table 6 Comparison of variables between patients who considered visiting the family health centre for the same health problem and those who did not consider visiting the family health centre for the same health problem

Variables		Would you consider going to family health centre if your child has the same health problems in the future?			p-value
		Yes n (%)	No n (%)	Partially n (%)	
How urgent do you think your child's health condition is?	Very urgent	33 (9.3)	18 (10.3)	7 (5.5)	**0,004**
	Urgent	213 (60.0)	89 (50.9)	56 (44.1)	
	Semi-urgent (normal)	91 (25.6)	62 (35.4)	56 (44.1)	
	Not urgent	18 (5.1)	6 (3.4)	8 (6.3)	
Did you take action to address your child's health problems before visiting the PED?	No	41 (11.5)	34 (19.4)	21 (16.5)	**0,012**
	Medication	138 (38.9)	46 (26.3)	47 (37.0)	
	Cold-hot application	46 (13.0)	23 (13.1)	11 (8.7)	
	Medication and cold-hot application	54 (15.2)	18 (10.3)	14 (11.0)	
	Other	76 (21.4)	54 (30.9)	34 (26.8)	
Are you satisfied with the care your child received in the PED?	Yes	191 (53.8)	92 (52.6)	63 (49.6)	0.307
	No	39 (11.0)	30 (17.1)	18 (4.2)	
	Partially	125 (35.2)	53 (30.3)	46 (36.2)	
To what extent do you trust the PED?	Trust a lot	27 (7.6)	7 (4.0)	5 (3.9)	0.068
	Trust	181 (51.0)	88 (50.3)	62 (48.8)	
	Undecided	110 (31.0)	49 (28.0)	40 (31.5)	
	I do not trust	35 (9,8)	25 (14.3)	19 (15.0)	
	Do not trust at all	2 (0.6)	6 (3.4)	1 (0.8)	
What is your level of satisfaction with the PED?	Very satisfied	26 (7.3)	8 (4.6)	4 (3.1)	0.205
	Satisfied	184 (51.8)	95 (54.3)	59 (46.5)	
	Undecided	101 (28.5)	42 (24.0)	42 (33.1)	
	Dissatisfied	39 (11.0)	24 (13.7)	20 (15.7)	
	Very dissatisfied	5 (1.4)	6 (3.4)	2 (1.6)	
	No	69 (19.5)	33 (18.9)	19 (15.0)	
	Partially	63 (17.7)	18 (10.3)	43 (33.9)	
How you trust in family health centres?	Trust a lot	22 (6.2)	4 (2.3)	2 (1.6)	**< 0,001**
	Trust	276 (77.8)	46 (26.3)	58 (45,6)	
	Undecided	47 (13.2)	77 (44.0)	59 (46.5)	
	I do not trust	7 (2.0)	37 (21.1)	5 (3.9)	
	Do not trust at all	3 (0.8)	11 (6.3)	3 (2.4)	
What is your level of satisfaction with family health centres?	Very satisfied	27 (7.6)	4 (2.3)	5 (3.9)	**< 0,001**
	Satisfied	277 (78,0)	46 (26.3)	53 (41.8)	
	Undecided	42 (11.8)	81 (46.3)	60 (47.2)	
	Dissatisfied	8 (2.3)	35 (20,0)	9 (7.1)	
	Very dissatisfied	1 (0.3)	9 (5.1)	0 (0.0)	
How effective do you find it in managing your child's health problem when you visit family health centres instead of visiting the PED?	Very effective	25 (7.0)	3 (1.7)	7 (5.5)	**< 0,001**
	Effective	252 (71.0)	64 (36.6)	61 (48.0)	
	I am not sure	56 (15.8)	59 (33.7)	45 (35.5)	
	Ineffective	20 (5.6)	39 (22.3)	12 (9.4)	
	Not effective at all	2 (0.6)	10 (5.7)	2 (1.6)	
Do you believe that your child's health problem would be solved if you went to the GP for your child's health problem?	Yes	168 (47.3)	34 (19.4)	36 (28.4)	**< 0,001**
	No	41 (11.5)	87 (49.7)	20 (15.7)	
	Partially	146 (41.2)	54 (30.9)	71 (55.9)	
How much do you know about services offered by family health centres?	I am very knowledgeable	23 (6.5)	5 (2.9)	4 (3.1)	**< 0,001**
	I am knowledgeable	225 (63.4)	86 (49.1)	56 (44.1)	
	I am not sure	39 (11.0)	44 (25.1)	37 (29.1)	
	I have limited experience	64 (18.0)	35 (20,0)	27 (21.3)	
	I do not have any information	4 (1.1)	5 (2.9)	3 (2.4)	

of their child's health condition, and any actions taken when their child was ill. In addition, parents' experiences with PED were revealed, which included the frequency of their visits to PED, their level of satisfaction and trust in PED, their perception of overcrowding in PED and their perception of future visits to PED if their child has the same health problem in the future. In addition, this study revealed the status of parents who visited their GP before their PED visits, the frequency of their visits to the GP, their level of satisfaction and trust in family health centres and their general perceptions regarding family health centres. Furthermore, this study illuminated parents' reasons for using PED, reasons why they do not prefer to use family health centres, and parents' recommendations to increase the use of family health centres for their children in the future.

In line with the existing literature, 54.5% of parents perceived their child's condition as "urgent" and 8.8% of parents perceived as "very urgent". Overestimation of severity of child's conditions could lead parents to use the PED rather than their primary healthcare services [27, 28]. In line with this study, the existing studies found that parents used the PED for their children due to worrying about child health, delayed recovery, and complications of illness, feeling frustrated, fearful, and anxious [13], higher parental stress [12], and perceived severity of the urgency [12, 28]. This study suggest to increase the level of health literacy of parents regarding common childhood illnesses, which could lead to a better judgement of child health conditions and changes in parents' health-seeking behaviours.

The results of this study highlighted that some parents did not communicate with their GP before visiting the ED even if they believed that their child's condition was non-urgent. In line with the existing literature, the results of this study confirmed that more than half of the parents (61.8%) did not visit their GP before their ED visits, 175 parents (26.6%) did not consider visiting their GP if their child had the same health problem in the future, and 71 parents (10.8%) had never visited their GP in the last 1 year. In contrast to this results, Oslislo, Heintze [29] found that patients frequently made contact with their GP before visiting the emergency department. Another study found that 46% of participants seek care from their GP before visiting the emergency department [30]. The underutilisation of family health centres is influenced by both individual and system-level factors, including lack of trust in their GP, unable to receive information from their GP regarding their disease, restricted working hours and limited intervention options at family health centres. This study suggests that implementing out-of-hours services could help reduce non-urgent PED visits. In Turkey, the absence of such out-of-hours services leaves the PEDs as the only available healthcare option for those in need outside regular hours.

In addition, parents often lack awareness of alternative healthcare services, which could lead them to use PED for their children [31]. This showed that parents should be made aware of available primary healthcare services to help them alleviate the pressure on PEDs [32]. Patients should seek care at primary healthcare services before seeking assistance from the PED because this is a critical aspect of healthcare-seeking behaviour and resource allocation. With a better understanding of the navigation of the healthcare system, parents could be more inclined to use primary healthcare services for non-urgent health conditions, thereby alleviating PED overcrowding [33]. This study suggests the importance of enhancing parental awareness about the role and resources of family health centres, particularly in guiding appropriate healthcare utilization for non-urgent paediatric conditions. Increasing access to educational materials, such as informational leaflets detailing the services offered by family health centres and guidance on when to consult a GP, may encourage parents to seek family health centres over PEDs for non-urgent conditions. Additionally, strengthening the resources available at family health centres could further support this shift in healthcare-seeking behaviours among parents.

This study revealed the most common reasons why parents do not prefer to use family health centres for their children's health needs. These reasons included limited working hours, a lack of trust in their GP, unable to receive information from their GP regarding their disease and treatment, and limited interventions at family health centres. These results concurred with the existing studies [3, 25, 29, 34]. In support of the results of this study, Willson, Lim [35] reported a lack of equipment and patients' perception that their GP could not manage their condition due to a lack of skills or unavailability of resources. This study suggests that **e**nhancing the availability of essential diagnostic tools and treatment resources within family health centres could improve the perception of family health centres as capable and comprehensive healthcare providers. Investment in this area would address concerns related to equipment shortages and enable GPs to manage a broader range of health conditions, reducing the perceived need for PED visits.

This study revealed some recommendations to increase the use of family health centres by parents for their children with non-urgent conditions. These recommendations included improving the effectiveness of family health centres, increasing the number of services provided in the family health centre (blood collection, injection, test), introducing out-of-hours services, increasing resources in family health centre, and developing the experiences of healthcare staff working in family health

centres. These results concur with the existing literature [3, 28, 34, 36, 37].

Implications and recommendations

In Turkey, there are no out-of-hours services; therefore, those who need healthcare support are compelled to visit the emergency department after hours. There is evidence that out-of-hours services could reduce the number of visits to emergency care settings [25, 35, 36, 38]. By introducing out-of-hours services, family health centres could become more appealing alternatives to emergency care settings for non-urgent conditions. Therefore, this study suggests that introducing out-of-hours services in Turkey could alleviate overcrowding in emergency care settings.

In addition, this study found that PEDs were commonly used by parents. For example, only 32 (4.9%) of the parents out of 657 (100%) participants visited the PED once in the last 1 year, and the remaining parents visited the PED 2 or more times in the last year. This shows that PEDs in Turkey need urgent action to reduce the number of visits. Redirecting those with non-urgent conditions to their GP could help reduce PED overcrowding. In addition, primary healthcare services should be more active to manage patients with non-urgent conditions.

This study suggests increasing awareness of parents regarding how to use family health centres effectively and informing them about services provided in family health centres could lead parents to use such services rather than the use of PED and thus alleviate the overcrowding in PED. Furthermore, increasing health literacy of parents regarding how to manage common childhood illnesses could lead them to provide self-care to their children and to changes in parents' health-seeking behaviours. Existing literature has suggested that enhancing parental knowledge about when and where to seek care could alleviate non-urgent PED visits [31]. Informing parents about the range of services offered and addressing misconceptions about the limitations of family health centres may encourage parents to rely on these centres for non-urgent health needs.

In addition, improving communication between GP and patients could change parents' health-seeking behaviours and choose to seek care at their GP rather than PED. Also, improving trust with GP could help parents feel more confident in their GP's expertise and better informed regarding their child's health needs.

Strengths and limitations

One of the strengths of this study is to collect data from a large sample of 657 participants. However, this study is not without limitations. First, this study was conducted in only one tertiary hospital, therefore, the results may not be generalizable to other settings. However, the results of this study concur with the existing literature. The results may not be generalizable to some other countries due to differences in healthcare systems and societal contexts. In addition, using convenience sampling method may introduce some limitations such as risk of selection bias. To address this limitation, the researcher made efforts to ensure that the sample was as diverse as possible by including participants from different time slot for admission to the PED.

Conclusion

This study may inform us regarding why parents do not prefer to use their GP for their non-urgent healthcare needs and instead use PED. In addition, this study could help us better understand the critical role family health centres can play in reducing non-urgent PED visits by parents seeking care for their children. This study revealed that barriers such as limited working hours, perceived lack of skills in GPs and distrust in GPs, and lack of parental awareness contribute to the underutilisation of family health centres. These barriers often lead parents to seek care in PEDs, placing additional strain on emergency care services intended for urgent cases. To address these issues, targeted interventions are recommended, including extending family health centre hours, improving the availability of essential medical equipment and resources, and implementing parental education initiatives to enhance understanding of when and how to use family health centres effectively. More effective use of family health centres, introducing out-of-hours services to provide continuity primary care, improving the health literacy of parents regarding most common childhood illnesses, and making parents more aware of services provided in family health centres could affect parents' health-seeking behaviours and choose to use their GP rather than PED for their children with non-urgent conditions. In addition, this study highlighted the importance of addressing barriers to the use of family health centres through improved accessibility, introduction of out-of-hours services, educational initiatives and increased satisfaction of parents with GPs. By implementing such strategies, family health centres can better fulfil their role as primary care providers, parents may use their GP rather than the PED for their children with non-urgent conditions, ultimately leading to better health outcomes for children and more efficient use of healthcare resources.

Abbreviations

PED Paediatric Emergency Department
GP General Practitioner

Acknowledgements

The author would like to thank Mardin Artuklu University Scientific Research Projects Coordination Unit for funding this study (Project no: MAÜ.BAP.24.SBF.032). The author would also like to acknowledge the participants for

attending to this study and to the hospital management teams for their help with participant recruitment.

Author contributions
Ahmet Butun: Conceptualization, Resources, Data curation, Sofware, Visualization, Methodology, Project administration, Formal analysis, Writing – original draft, Writing – review & editing.

Funding
This study was funded by Mardin Artuklu University Scientific Research Projects Coordination Unit, Turkey (Project no: MAÜ.BAP.24.SBF.032).

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

Declarations

Ethics approval and consent to participate
Ethical approval was obtained from Mardin Artuklu University Non-Invasive Clinical Research Ethics Committee (Date: 08/01/2024, Reference number: 2024/1–11). In addition, institutional permission was obtained from the Mardin Provincial Directorate of Health (Date: 18/01/2024, Reference number: E-68051626-770-234478062). Also, informed consent was obtained from all participants. The study was carried out in accordance with the principles of the Declaration of Helsinki.

Clinical trial number
Not applicable.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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Received: 20 September 2024 / Accepted: 28 November 2024
Published online: 19 December 2024

References

1. Sabrina P, Tyara M, Tara S, Heather G, Eddy L. Emergency department crowding: an overview of reviews describing measures causes, and harms. Internal Emergency Med. 2023.
2. Pearce S, Marchand T, Shannon T, Ganshorn H, Lang E. Emergency department crowding: an overview of reviews describing measures causes, and harms. Intern Emerg Med. 2023;18(4):1137–58.
3. Butun A, Kafdag EE, Gunduz H, Zincir V, Batibay M, Ciftci K, et al. Emergency department overcrowding: causes and solutions. Emerg Crit Care Med. 2023;3(4):171–6.
4. Weber EJ, Hirst E, Marsh M. The patient's dilemma: attending the emergency department with a minor illness. BMJ. 2017;357.
5. Lowthian JA, Curtis AJ, Cameron PA, Stoelwinder JU, Cooke MW, McNeil JJ. Systematic review of trends in emergency department attendances: an Australian perspective. Emerg Med J. 2011;28(5):373–7.
6. Butun A. Causes and Solutions for Emergency Department crowding: a qualitative study of Healthcare Staff perspectives. Sürekli Tıp Eğitimi Dergisi. 2024;32(5):391–400.
7. Kusumawati HI, Magarey J, Rasmussen P. Analysis of factors influencing length of stay in the Emergency Department in public hospital, Yogyakarta, Indonesia. Australasian Emerg Care. 2019;22(3):174–9.
8. Sun BC, Hsia RY, Weiss RE, Zingmond D, Liang LJ, Han W, et al. Effect of emergency department crowding on outcomes of admitted patients. Ann Emerg Med. 2013;61(6):605–. – 11.e6.
9. Pergeline J, Lesuffleur T, Fresson J, Vilain A, Rachas A, Tuppin P. One-year emergency department visits for children < 18 years of age, associated factors and frequency of primary general practitioner or pediatrician visits before: a French observational study (2018–19). BMC Prim Care. 2024;25(1):83.
10. Dick S, MacRae C, McFaul C, Wilson P, Turner SW. Interventions in primary and community care to reduce urgent paediatric hospital admissions: systematic review. Arch Dis Child. 2023;108(6):486–91.
11. Montoro-Pérez N, Montejano-Lozoya R, Richart-Martínez M. Demand and stigma in paediatric emergency care: interventions and potential solutions. Int Emerg Nurs. 2024;74:101452.
12. Montoro-Pérez N, Montejano-Lozoya R, Escribano S, Richart-Martínez M. Factors associated with non-urgent presentations in the paediatric emergency department using Andersen's behavioural model: a cross-sectional descriptive study. J Clin Nurs. 2024;33(8):3172–87.
13. Butun A, Hemingway P. A qualitative systematic review of the reasons for parental attendance at the emergency department with children presenting with minor illness. Int Emerg Nurs. 2018;36:56–62.
14. Hendry SJ, Beattie TF, Heaney D. Minor illness and injury: factors influencing attendance at a paediatric accident and emergency department. Arch Dis Child. 2005;90(6):629–33.
15. Phelps K, Taylor C, Kimmel S, Nagel R, Klein W, Puczynski S. Factors associated with emergency department utilization for nonurgent pediatric problems. Arch Fam Med. 2000;9(10):1086–92.
16. Kubicek K, Liu D, Beaudin C, Supan J, Weiss G, Lu Y, et al. A Profile of Non-urgent Emergency Department Use in an urban Pediatric Hospital. Pediatr Emerg Care. 2012;28(10):977–84.
17. Cecil E, Bottle A, Cowling TE, Majeed A, Wolfe I, Saxena S. Primary care access, emergency department visits, and unplanned short hospitalizations in the UK. Pediatrics. 2016;137(2).
18. Chmiel C, Huber CA, Rosemann T, Zoller M, Eichler K, Sidler P, et al. Walk-ins seeking treatment at an emergency department or general practitioner out-of-hours service: a cross-sectional comparison. BMC Health Serv Res. 2011;11(1):94.
19. Alnasser S, Alharbi M, AAlibrahim A, Kentab O, Alassaf W, Aljahany M. Analysis of Emergency Department Use by Non-urgent patients and their visit characteristics at an academic center [Corrigendum]. Int J Gen Med. 2023;16:357–8.
20. Keogh B. NHS England: urgent and emergency care. Review 2017. 14/09/2018. https://www.england.nhs.uk/wp-content/uploads/2014/01/item11-board-0114.pdf
21. Bahadori M, Mousavi SM, Teymourzadeh E, Ravangard R. Emergency department visits for non-urgent conditions in Iran: a cross-sectional study. BMJ Open. 2019;9(10):e030927.
22. Green LA, Chang HC, Markovitz AR, Paustian ML. The reduction in ED and hospital admissions in Medical Home practices is specific to primary care-sensitive chronic conditions. Health Serv Res. 2018;53(2):1163–79.
23. Hone T, Macinko J, Trajman A, Palladino R, Coeli CM, Saraceni V et al. Expansion of primary healthcare and emergency hospital admissions among the urban poor in Rio De Janeiro Brazil: a cohort analysis. Lancet Reg Health–Americas. 2022;15.
24. Akbayram HT, Coskun E. Paediatric emergency department visits for non-urgent conditions: can family medicine prevent this? Eur J Gen Pract. 2020;26(1):134–9.
25. Kümpel L, Oslislo S, Resendiz Cantu R, Möckel M, Heintze C, Holzinger F. I do not know the advantages of having a general practitioner-a qualitative study exploring the views of low-acuity emergency patients without a regular general practitioner toward primary care. BMC Health Serv Res. 2024;24(1):629.
26. Aktürk Z, Ateşoğlu D, Ciftci E. Patient satisfaction with family practice in Turkey: three-year trend from 2010 to 2012. Eur J Gen Pract. 2015;21(4):238–45.
27. Fieldston ES, Alpern ER, Nadel FM, Shea JA, Alessandrini EA. A qualitative assessment of reasons for nonurgent visits to the emergency department: parent and health professional opinions. Pediatr Emerg Care. 2012;28(3):220–5.
28. Butun A, Linden M, Lynn F, McGaughey J. Exploring parents' reasons for attending the emergency department for children with minor illnesses: a mixed methods systematic review. Emerg Med J. 2019;36(1):39–46.
29. Oslislo S, Heintze C, Möckel M, Schenk L, Holzinger F. What role does the GP play for emergency department utilizers? A qualitative exploration of respiratory patients' perspectives in Berlin, Germany. BMC Fam Pract. 2020;21(1):154.
30. Ravi N, Gitz KM, Burton DR, Ray KN. Pediatric non-urgent emergency department visits and prior care-seeking at primary care. BMC Health Serv Res. 2021;21(1):466.
31. Ellbrant JA, Akeson SJ, Karlsland Akeson PM. Influence of awareness and availability of medical alternatives on parents seeking paediatric emergency care. Scand J Public Health. 2018;46(4):456–62.

32. O'Cathain A, Connell J, Long J, Coster J. Clinically unnecessary'use of emergency and urgent care: a realist review of patients' decision making. Health Expect. 2020;23(1):19–40.
33. Strum RP, Tavares W, Worster A, Griffith L, Rahim A, Costa AP. Development of the PriCARE classification for potentially preventable Emergency Department visits by ambulance: a RAND/UCLA modified Delphi Study Protocol. BMJ Open. 2021;11(1):e045351.
34. McIntyre A, Janzen S, Shepherd L, Kerr M, Booth R. An integrative review of adult patient-reported reasons for non-urgent use of the emergency department. BMC Nurs. 2023;22(1):85.
35. Willson KA, Lim D, Toloo GS, FitzGerald G, Kinnear FB, Morel DG. Potential role of general practice in reducing emergency department demand: a qualitative study. Emerg Med Australasia. 2022;34(5):717–24.
36. van den Berg MJ, van Loenen T, Westert GP. Accessible and continuous primary care may help reduce rates of emergency department use. An international survey in 34 countries. Fam Pract. 2016;33(1):42–50.
37. Tuz C, Özçakir A. Why patients self-refer to the emergency service for nonurgency? A mix-method survey from a family medicine perspective. Med (Baltim). 2024;103(10):e37453.
38. Payne K, Dutton T, Weal K, Earle M, Wilson R, Bailey J. An after hours gp clinic in regional Australia: appropriateness of presentations and impact on local emergency department presentations. BMC Fam Pract. 2017;18(1):86.

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