

Non-Urgent Pediatric Presentations to the Emergency Department, Khamis Mushayt Maternity and Children Hospital, Saudi Arabia

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Abstract

Aim of Study: To explore parents' perspectives regarding why parents (caregivers) prefer to escort their less urgent, or non-urgent sick children to the emergency departments (EDs) instead of using other more appropriate healthcare services.

Methods: This study followed a quantitative cross-sectional design at Khamis Mushayt Maternity and Children's Hospital (KMMCH). A study questionnaire was designed by the researchers to interview parents of 400 children who inappropriately attended the ED to identify the reasons for their inappropriate attendance at the ED. Data collection was performed during the period of January 2023 to explore the proportions of different attendances that were deemed inappropriate according to the hospital's followed triage system. The interviews were conducted with parents/caregivers of non-urgent and less urgent children during their waiting times.

Results: The age of 18.3% of parents was <30 years, while 28.5% were 30-39 years old. More than half of the parents' visits were non-urgent, while 43.25% were less-urgent, 55.3% of patients visited the ED before due to similar complaints, while 46% visited a primary health care center before their ED visits. The main reasons for visiting the ED instead of the primary healthcare centers (PHCCs) were to save time (49.3%) and to get an earlier appointment (48%). Patients' triage levels differed significantly according to parents' age groups ($p<0.001$), nationality ($p=0.022$), educational level ($p=0.022$), ED visits for similar complaints ($p<0.001$), and previously visiting the PHCC

for the current health problem ($p=0.002$). Triage levels also differed significantly according to some reasons for choosing to go to the ED instead of the PHCC, especially to get an earlier appointment ($p=0.044$), preferring the healthcare services provided by the ED ($p=0.005$), having a nearby ED ($p=0.001$), or being at the hospital at that time ($p=0.002$).

Conclusions: There is a clear relationship between inappropriate ED visits and certain associated factors, indicating that prevention would be best targeted to certain categories, such as Saudi, younger, and educated parents. The main reasons for inappropriate ED visits are to save time and to avoid getting a late appointment.

Recommendations: This study emphasized the importance of implementing proper health education and redirection of patients with inappropriate ED visits. Conducting a detailed analysis of the shortages in the utilization of primary healthcare resources is a pressing necessity. Further nationwide research on patients' perspective for non-urgent ED presentations is largely needed.

Key Words: Emergency Department, Triage, Children, Non-urgent level, Less urgent level.

Introduction

Emergency departments (EDs) constitute an integral service for healthcare systems worldwide. They provide immediate point-of-access care for urgent medical conditions and injuries. However, overcrowding at EDs may result in increasingly stressed staff and ineffectively provided emergency services. This often leads to increased patient waiting times, treatment delays, impaired access, economic losses, and unethical consequences (1).

Emergency Department crowding is an important patient safety concern and a global public health problem. Many countries report significant and unsustainable increases in emergency presentations. A growing number of studies have found that these increases cannot be explained by population growth alone (2).

The use of emergency departments by non-urgent patients has become an important public health problem. Several studies showed that more than half of emergency visits are not urgent. This undesirably affects the quality of the provided patient care and lowers the satisfaction of both the patients and the staff in the emergency department (3).

Patients' conditions become classified according to standard triage categories. The main purpose of triage is to distinguish non-urgent patients and increase the quality of care for actual urgent patients, and allow urgent cases to become immediately managed. On the other hand, non-urgent patients become evaluated in fast-track units and are taken to the waiting room to be examined in their turn. In the EDs, emergency physicians have to work as if in polyclinics (4).

In Saudi Arabia, ED services are increasingly needed. It is provided at all governmental healthcare institutions completely free of charge to all patients. However, triage practice is not fully standardized, and in some MOH EDs, formal triage is not applied, while others have individually followed several Western systems of triage. Some of these triage systems include the Australian Triage Scale, the Emergency Severity Index, and the Canadian Emergency Department Triage and Acuity Scale (CTAS), which is widely implemented at tertiary centers (5).

In Saudi Arabia, the lack of a standardized triage system in EDs constitutes many problems, from the confusion regarding who should be seen first to how resources should be distributed. Moreover, there is a growing demand for emergency services, mainly due to the steady population growth, and the inappropriate use of its services. Previous reports estimated that over half of the patients attending EDs in Saudi Arabia are patients with primary care or non-urgent problems. Therefore, the identification of the reasons why some patients unjustifiably attend emergency departments instead of using more appropriate healthcare services is expected to improve patient safety and promote better and more efficient access to ED services (6).

Aim of study

To explore parents' perspectives regarding why they prefer to escort their less urgent, or non-urgent sick children to the emergency departments (EDs) instead of using other more appropriate healthcare services.

Methodology

This study followed an exploratory cross-sectional design. The research obtained and analyzed emergency attendance data from one large hospital in Khamis Mushayt City for a period of one month (January 2023), identifying the proportions of different pediatric attendances that were deemed appropriate (i.e., resuscitation, emergent, or urgent) or inappropriate (less urgent or non-urgent) according to the hospital's followed triage system (CTAS).

Study setting

The researchers purposively selected a pediatric tertiary care hospital (i.e., KMMCH), which receives the largest number of pediatric ED patients in Khamis Mushayt City.

Data collection tool

Based on the review of relevant literature, the researchers designed a study questionnaire for data collection (3; 7). It included the following:

- A) Sociodemographic characteristics of parents: Age, gender, nationality, educational status, current employment status.
- B) Characteristics of children: Age, gender, main presenting symptom(s).
- C) ED visit characteristics: Urgency level, time of visit, primary complaint, previous visit(s) to the ED or a primary health care center.

The developed study questionnaire was validated by two consultants in Emergency and Pediatrics. The researcher conducted a pilot study on 20 parents of children attending the ED to test the data collection tool. The time needed to fill in the questionnaire and its wording was assessed to be about 5 minutes. Based on the findings of the pilot study, the final version of the questionnaire was reached. Data from the pilot study were excluded from the main study.

Sampling

The present study included 400 parents/caregivers of children who attended the ED for non-urgent or less urgent causes. The researchers consecutively interviewed 400 parents of children (aged less than 18 years) who had been triaged as less urgent or non-urgent, during all three shifts (morning, evening, and night) to identify the reasons for their inappropriate attendance (levels V or IV) to the ED. Parents of children with emergency levels (resuscitation, emergent and urgent cases) were not included.

Data collection

During January (2023), the researchers paid daily visits to the study hospital to conduct face-to-face interviews with parents of children attending the ED, using the study questionnaire. Parents were included consecutively until

the required sample size was fulfilled (n=400). All interviews were conducted with parents of children at the ED during their waiting times.

Data analysis

Collected data were coded and then entered and analyzed using the Statistical Package for Social Sciences (IBM, SPSS, version 28). Descriptive statistics (frequency and percentage for qualitative variables in addition to mean and standard deviation for quantitative variables) were calculated. Cross-tabulation using χ^2 test was used to measure the association between variables.

Ethics and Human Subjects Issues

Before conducting the interviews, all eligible participants were clearly informed about the study objectives and were asked to provide their written consent to participate in the current study. Confidentiality and privacy were completely assured to all participants. Collected data were secured by restricting unauthorized access.

Results

Table (1) shows that the age of 18.3% of parents/caregivers was less than 30 years, while 28.5% were 30-39 years old, 33.3% were 40-49 years old and 20% were 50 years old or more. The majority of parents/caregivers were Saudi (83.5%), and more than two-thirds were university-educated (68.8%). Most parents were governmentally or privately employed (33.8% and 40%, respectively), while 20.3% were unemployed/housewives. Regarding the age of children presenting at the ED, 29% were infants, 32.5% were 1-5 years old, and 38.5% were more than 5 years old. Boys had more ED visits than girls (53% and 47%, respectively).

Figure (1) shows that 56.75% of recorded ED visits were non-urgent (Level V), while 43.25% were less-urgent visits (Level IV).

Table (2) and Figure (2) show that fever, cough, and minor trauma were the main causes for children with IV/V triage levels being escorted to the ED (27.5%, 18.8%, and 17.5%, respectively).

Table (3) shows that 55.3% of parents/caregivers had visited the same ED before due to similar complaints, while 46% visited a primary health care center before their visit to the ED.

Table (4) shows that the main reasons for parents' visits to the ED instead of the PHCC were to save time (49.3%), to get an earlier appointment for healthcare (48%), prefer to receive healthcare services at the ED (15.8%), living nearby an ED (14.2%) and visiting the hospital for any reason at that time (12.3%).

Table (5) shows that children's triage levels differed significantly according to their parents' age groups ($p < 0.001$), with the highest non-urgent prevalence among younger parents (aged < 30 years). Saudi sick children visited the ED for non-urgent reasons significantly more than non-Saudi sick children ($p = 0.022$). Moreover, university-educated parents/caregivers visited the ED for non-urgent reasons significantly more than less-educated parents/caregivers ($p = 0.022$). However, triage levels did not differ significantly according to parents' gender or employment status. Moreover, triage levels did not differ significantly according to the child's gender or age group.

Table (6) shows that children's triage levels differed significantly according to previously visiting the ED due to similar complaints ($p < 0.001$), with non-urgent visits being higher among those who did not visit the ED before. Moreover, patients' triage levels differed significantly according to previously visiting the PHCC for the current health problem ($p = 0.002$), with non-urgent visits being higher among those who had not previously visited the PHCC.

Table (7) shows that children's triage levels differed significantly according to some reasons for choosing to go to the ED instead of the PHCC, especially to get an earlier appointment ($p = 0.044$), preferring the healthcare services provided by the ED ($p = 0.005$), having a nearby ED ($p = 0.001$), or being at the hospital at that time ($p = 0.002$). However, triage levels did not differ significantly according to parents' choice to save time.

Table 1: Personal characteristics of participant parents/caregivers

Personal Characteristics	No.	%
A) Parents/Caregivers:		
Age (in years)		
• <30	73	18.3
• 30-39	114	28.5
• 40-49	133	33.3
• 50+	80	20.0
Gender		
• Male	227	56.8
• Female	173	43.3
Nationality		
• Saudi	334	83.5
• Non-Saudi	66	16.5
Educational level		
• Illiterate	31	7.8
• School (Primary/Intermediate/Secondary)	94	23.5
• University	275	68.8
Employment		
• Private	160	40.0
• Government	135	33.8
• Unemployed/Housewife	81	20.3
• Student	17	4.3
• Retired	7	1.8
B) Child		
Age groups		
• Infancy	116	29.0
• 1-5 years	130	32.5
• >5 years	154	38.5
Gender		
• Male	212	53.0
• Female	188	47.0

Table 2: Children's main reasons/symptoms for non-urgent or less urgent visits to the ED

Reasons/Symptoms	No.	%
Fever	110	27.5
Cough	75	18.8
Minor trauma	70	17.5
Dysuria	54	13.5
Constipation	42	10.5
Rhinorrhea	20	5.0
Diarrhea	17	4.3
Others	12	3.0

Table 3: Previous visits of parents/caregivers to emergency departments or PHC centers for their sick children

Parents' previous visits	No.	%
A previous visit to the same ED due to child's similar complaints		
• Yes	221	55.3
• No	179	44.8
A previous visit to a PHCC for the current health problem		
• Yes	184	46.0
• No	216	54.0

Table 4: Parents' perspectives regarding the reasons for visiting the Emergency Department with their sick children instead of going to the primary healthcare center

Parents' Perspectives †	No.	%
To save time	197	49.3
To get an earlier appointment	192	48.0
I prefer ED healthcare services	63	15.8
ED is nearby to me	57	14.2
Being at the hospital at that time	49	12.3

† More than one choice is possible

Table 5: Children's triage levels according to their parents' personal characteristics

Personal Characteristics	Less urgent		Non-urgent		P Value
	No.	%	No.	%	
A) Parents/Caregivers					
Age (in years)					
• <30	15	20.5	58	79.5	<0.001
• 30-39	47	41.2	67	58.8	
• 40-49	64	48.1	69	51.9	
• 50+	47	58.8	33	41.3	
Gender					
• Males	98	43.2	129	56.8	0.971
• Females	75	43.4	98	56.6	
Nationality					
• Saudi	136	40.7	198	59.3	0.022
• Non-Saudi	37	56.1	29	43.9	
Educational level					
• Illiterate	20	64.5	11	35.5	0.001
• School	51	54.3	43	45.7	
• University	102	37.1	173	62.9	
Employment					
• Student	4	23.5	13	76.5	0.394
• Retired	4	57.1	3	42.9	
• Private	66	41.3	94	58.8	
• Government	62	45.9	73	54.1	
• Unemployed/Housewife	37	45.7	44	54.3	
• Unemployed/Housewife	37	45.7	44	54.3	
B) Child					
Age groups					
• Infancy	46	39.7	70	60.3	0.490
• 1-5 years	55	42.3	75	57.7	
• >5 years	72	46.8	82	53.2	
Gender					
• Male	94	44.3	118	55.7	0.641
• Female	79	42.0	109	58.0	

Table 6: Patients' triage levels according to their previous visits to emergency departments or primary healthcare centers

Previous visits	Less urgent		Non-urgent		P Value
	No.	%	No.	%	
To ED due to similar complaints					
• Yes	119	53.8	102	46.2	<0.001
• No	54	30.2	125	69.8	
To a PHCC for the same health problem					
• Yes	95	51.6	89	48.4	0.002
• No	78	36.1	138	63.9	

Table 7: Children's triage levels according to their parents' perspectives regarding the reasons for visiting the ED instead of the PHC center

Parents' Perspectives	Less urgent		Non-urgent		P Value
	No.	%	No.	%	
To save time					
• Yes	81	41.1	116	58.9	0.396
• No	92	45.3	111	54.7	
To get an earlier appointment					
• Yes	93	48.4	99	51.6	0.044
• No	80	38.5	128	61.5	
I prefer ED healthcare services					
• Yes	17	27.0	46	73.0	0.005
• No	156	46.3	181	53.7	
ED is nearby to me					
• Yes	36	63.2	21	36.8	0.001
• No	137	39.9	206	60.1	
Being at the hospital at that time					
• Yes	11	22.4	38	77.6	0.002
• No	162	46.2	189	53.8	

Figure 1: Recorded emergency levels

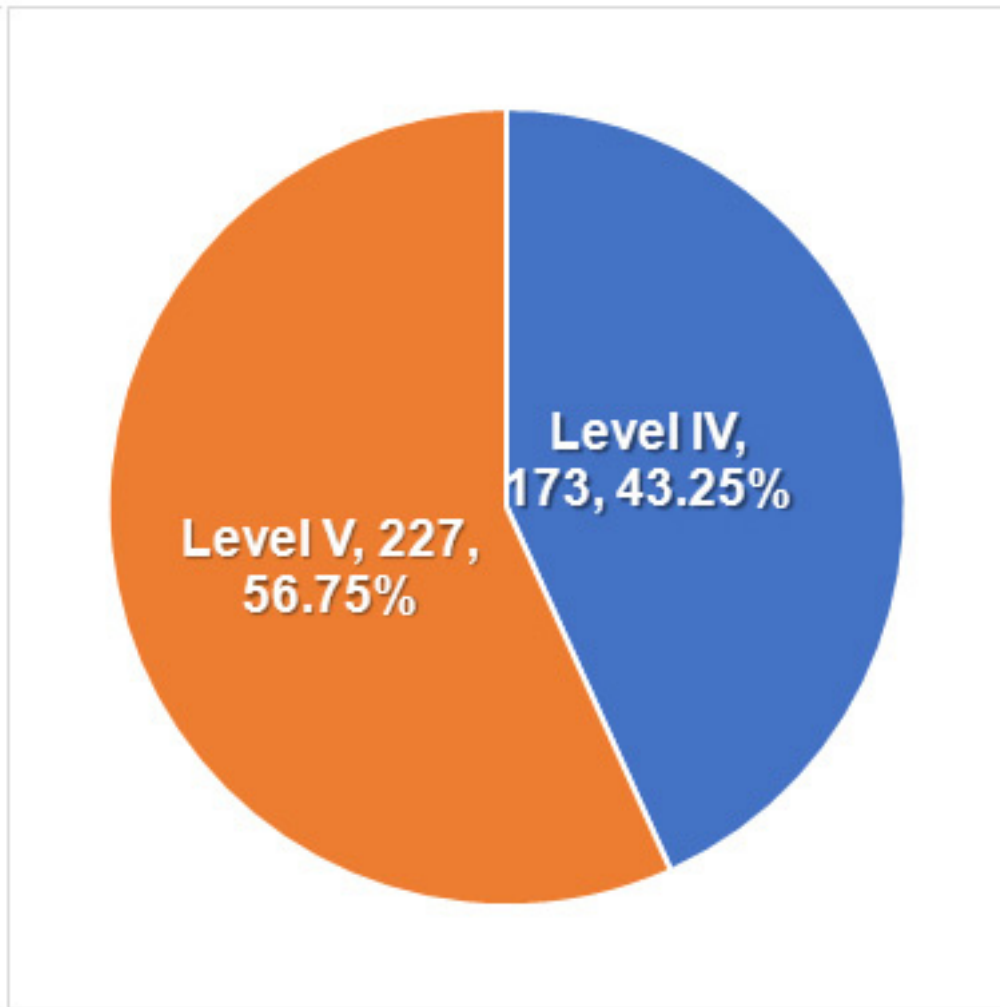
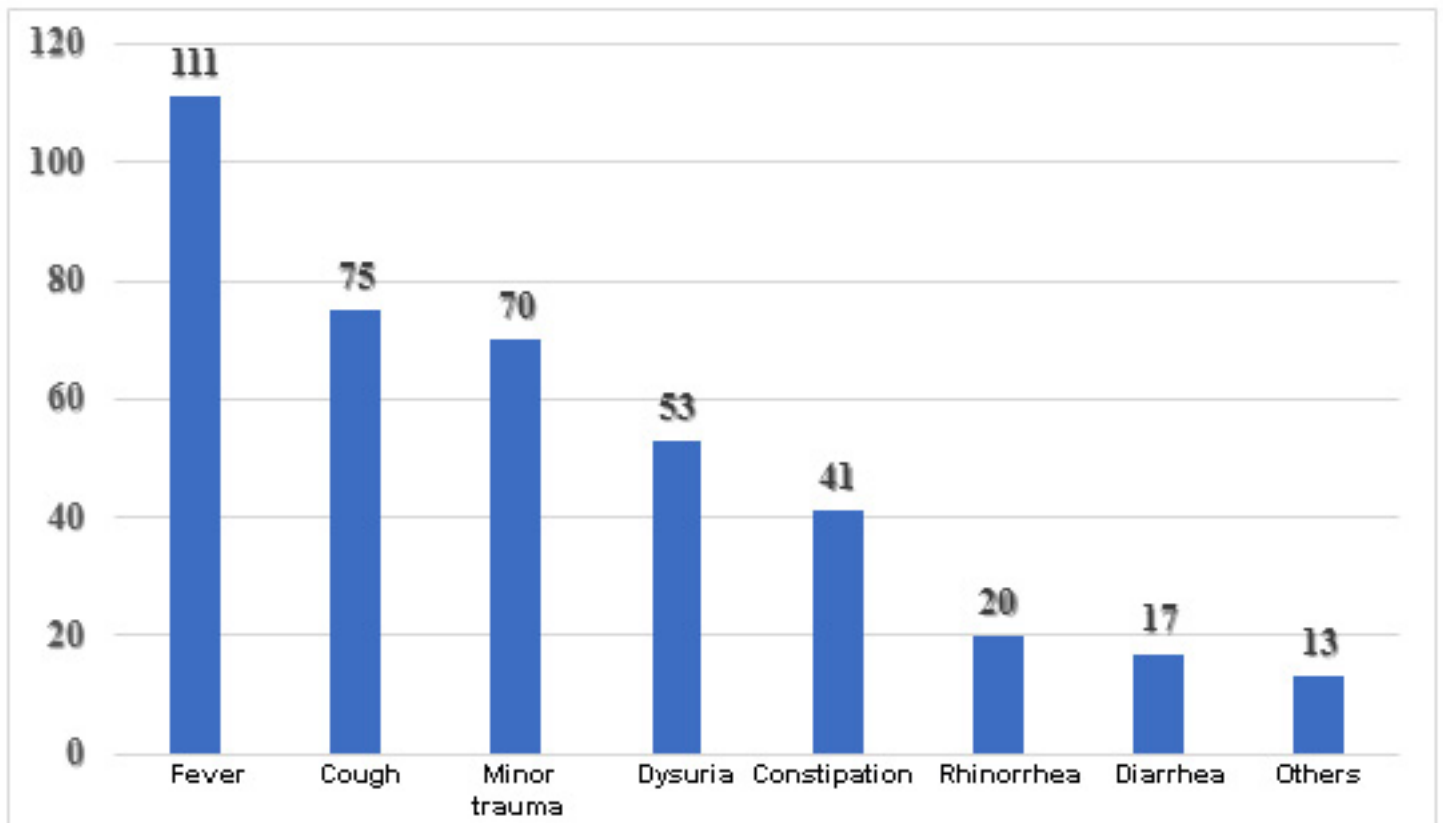


Figure 2: Main causes for children attending the Emergency Department for non-urgent or less urgent causes



Discussion

This study included 400 children who were escorted by their parents/caregivers to the ED in KMMCH. Fever, cough, and minor trauma were the main causes of being escorted to the ED (27.5%, 18.8%, and 17.5%, respectively).

Read et al. (8) noted that it has been realized that more than half of the requests for healthcare services at EDs were completely non-urgent. Such inappropriate ED visits can impede the ability of ED healthcare personnel to timely and safely treat emergency cases. Therefore, non-urgent patients may hinder access for urgent cases and have a negative impact on staff attitudes (9). In the UK, Harris et al. (10) found that 78% of ED attendances were unnecessary. Moreover, in the USA, several studies have shown that 30% to 50% of non-urgent conditions visit the ED (11-12).

In Jeddah City, Saudi Arabia, Alabbasi et al. (13) found that among ED patients visiting King Abdullah Medical Complex, 65% were less urgent, while 9.9% were non-urgent. In Riyadh City, Alnasser et al. (14) found that 56.4% of ED patients in King Abdullah Bin Abdul-Aziz University Hospital were classified as less-urgent, and 5% were non-urgent.

Guckert et al. (15) noted that there is wide variability in the magnitude of non-urgent visits to the ED, mainly due to the varying definitions and the subjective nature of measuring the ED visit inappropriateness. Internationally, 24-40% of all ED visits are inappropriate.

Agusala et al. (16) noted that overcrowding due to non-urgent visits is an increasing challenge for pediatric EDs despite several attempts to reduce the number of non-urgent visits through educational measures. Moreover, prolonged waiting times, decreased quality of received patients' care, increased risk of medication errors, increased morbidity, excess deaths, and increased patient dissatisfaction are indirect results of unnecessary visits to the ED (9; 17).

Morley et al. (2) warned that the negative consequences of ED crowding include poorer patient outcomes and the inability of staff to adhere to guideline-recommended treatment. Moreover, overcrowding may compromise patient care and is one of the most challenging problems facing EDs every day. Bezzina et al. (18) noted that an avoidable part of the increased overcrowding in EDs is induced by patients with non-urgent problems who refer themselves, are unlikely to require admission and are more suitable for other services, at primary healthcare centers. Moreover, Khattab et al. (5) emphasized that in modern healthcare systems, overcrowding and poor hospital flow are intolerable. Therefore, data-driven, evidence-based policies are needed.

Al-Nozha et al. (19) reported that half of the medical directors in Riyadh City, Saudi Arabia, complained that ED overcrowding is a major problem due to inappropriate

ED visits. The current healthcare system in Saudi Arabia has identified a considerable rise in the number of ED visits, leading to a considerable increase in lengths of waiting times for ED patients, which ultimately leads to ED overcrowding (5).

Alabbasi et al. (13) warned that emergency services at Saudi governmental hospitals are frequently over-utilized for non-emergency cases. Therefore, the present study aimed to explore patients' perspectives regarding why some less urgent, or non-urgent patients prefer to attend emergency departments instead of using other more appropriate healthcare services. Moreover, primary care services are frequently insufficient to manage the demand for health treatment and require modification to reduce the burden on ED. Uscher-Pines et al. (11) stressed that, ideally, need should be the major determinant of healthcare utilization; however, a non-urgent ED visit occurs when care is sought at an ED that could have been handled in a primary care setting.

The study of Baker et al. (20) compared two groups of parents to assess the impact of a short educational video, shown to them during an ED visit for minor complaints. Nevertheless, ED visits for minor children's complaints did not decrease. Guckert et al. (15) argued that even though the results of educational measures remain ambiguous, improving knowledge and ability could have reassuring effects on parents, thus enabling them to handle non-urgent complaints at home.

Taype-Huamani et al. (21) emphasized that the demands for attention in EDs have been rapidly progressive. However, the group that is growing the most is that of the less urgent patients (Level IV), i.e., those who make inappropriate use of the EDs. For several decades, healthcare providers in developed countries have claimed that up to 55% of the visits to EDs are for non-urgent complaints, which are more suitable for primary healthcare (22).

The majority of our parents/caregivers were Saudi (83.5%), males (56.8%), aged 30-49 years (61.8%), university-educated (68.8%), and employed (73.7%). Moreover, the comparison between non-urgent and less-urgent patients revealed that non-urgent patients were significantly more than less-urgent among younger patients (aged <30 years), significantly more among Saudi than non-Saudi patients, and among university-educated than less-educated patients. Almost one-third of the children were infants, and more than half of the children were males. However, the child's age or gender did not differ significantly according to triage levels.

Guckert et al. (15) explained that it is likely that parents are often alarmed faster during their child's first years of life, due to many different reasons (difficulties of communication with a baby/toddler, and misinterpretation of their symptoms, needs, or problems). Guckert et al. (15) also reported that males were more likely to attend inappropriately than females.

In Jeddah City, Alabbasi et al. (13) reported that males constituted 62.5% of the ED patients, while in Riyadh City, Alnasser et al. (14) found that most of the non-urgent patients were females. Moreover, in Peru, Taype-Huamani et al. (21) reported that non-urgent ED patients were mainly females, with high school or university qualifications.

This variation may reflect differences in the definition of inappropriate ED presentation or differences in the structure and use of healthcare services among countries.

The present study revealed that more than half of the participant children had been escorted to the ED before due to similar complaints, while 46% visited a primary health care center before visiting the ED. Parents' main perspectives regarding the reasons for escorting their sick children to the ED instead of the governmental PHCCs, which provide free healthcare service to all patients, were to save time, to get an earlier appointment for healthcare, prefer going to the EDs than PHCCs to receive healthcare, live nearby to an ED, and taking the chance to visit the ED while being at the hospital for any other reason. Non-urgent visits were significantly higher among those who has not visited the ED before, and among those who came directly to the ED without a previous visit to the PHCC. Moreover, patients' triage levels differed significantly according to parents' perspectives regarding visiting the ED or the PHCC, especially to obtain an earlier appointment, preferring the healthcare services provided by the ED, having a nearby ED, or being at the hospital at that time.

In Italy, Valent and Busolin (23) reported that a short distance from home to the hospital is a predictor for non-urgent ED visits. Similarly, in Australia, Alele et al. (24) found that although visiting the PHCCs would provide superior healthcare service to the sick child than that expected to be provided at the always overcrowded EDs, living close to the pediatric ED is associated with increased parents' non-urgent pediatric ED presentations.

Guckert et al. (15) added that presentation to the pediatric ED within the morning office hours was a predictor for non-urgent visits. They attributed this finding to the fact that some parents who recognize the non-urgent nature of their children's complaints refrain from visiting the pediatric ED at night, but prefer the ED to a general practitioner at a primary healthcare center for possibly different reasons, such as the difficulty to obtain an appointment at the PHCC as soon as needed, parents expect a longer waiting time at the PHCCs and the assumption they will get faster treatment and high-quality diagnostics at the pediatric ED.

Morley et al. (2) suggested that, for the management of inappropriate ED visits, the solutions should be directed at the introduction of whole-of-system initiatives to meet timed patient disposition targets, as well as extended hours of primary care, with system-wide solutions tailored to address identified patients' perspectives. Developing and targeting interventions to reduce or manage levels of these inappropriate presentations should be a pressing necessity. As a first step, it is necessary to gain a good

understanding of the perspectives of patients who are most likely to present inappropriately, and why such attendances are most likely to occur (McHale et al., 2013).

Although there have been several attempts to reduce the occurrence of non-urgent visits (e.g., by providing a primary care service in EDs), inappropriate visits to EDs remain a burden on ED services (25). An effective method of addressing inappropriate ED presentation included the provision of primary healthcare physicians either alongside emergency physicians in the ED itself or attached to the ED in a general surgery practice. This was intended to provide alternative options for what is considered inappropriate ED attendance (26).

It is to be noted that both the Saudi "National Transformation Program 2020" and the "Saudi Vision 2030" plans have identified problems with the current healthcare system, including the heavy burden faced by the EDs, and have proposed targets for improving access to, and quality of healthcare in the Kingdom of Saudi Arabia, especially primary and preventive care. These plans have identified problems with the current healthcare system, including the burden faced by EDs (5).

Study Strengths and Limitations

This study contributes to evidence-based decisions to minimize inappropriate emergency attendance and to reduce costs. The results of the present study are expected to help policymakers and administrators in the Saudi Ministry of Health to improve provided emergency healthcare services. Our study provides insight into the magnitude of the ED inappropriate attendance problem and its solution. Moreover, patients' identified perspectives will provide healthcare administration with a clear identification of problems in the primary healthcare system that encourages patients to follow inappropriate short-cut ED visits.

However, a few study limitations are to be considered. First, this study followed a cross-sectional research design, which is good for hypothesis generation, rather than hypothesis testing (Wang and Cheng, 2020). Moreover, data collection regarding parents' perspectives was completely subjective. In addition, the study included a single site, i.e., KMMCH.

Conclusion

There is a clear relationship between inappropriate pediatric ED visits and certain associated factors, e.g., parents' age, nationality, and education indicating that prevention would be best targeted to certain categories, such as Saudi, younger, educated patients. The main reasons for inappropriate pediatric ED visits are to save time and to avoid getting a late appointment. Therefore, it is important to implement proper health education programs. A 24-hour phone healthcare service that is available to the entire population to get medical advice and/or direction to an appropriate service is expected to limit non-urgent visits to ED. Moreover, conducting further research on visits to ED. Moreover, conducting further research on detailed analysis

of the shortages in the utilization of primary healthcare resources is a pressing necessity. Administrative and policy organization of the healthcare system is necessary to provide easy access to PHCCs and avoid delayed appointments and minimize patients' waiting times.

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