

# Patient's Perspective for their Non-Urgent Presentations to the Emergency Department in Najran City

Faisal Hussein Alkhaywani <sup>1</sup>; Ali Yahia Ali Alsalah <sup>2</sup>; Hassan Yahia Ali Alsalah <sup>3</sup>; Ali Muhammad Yahya Al-Khaiwani <sup>4</sup>; Tareq Husain Alqanas <sup>5</sup>; Ali Naser Almurdef <sup>6</sup>; Saud Daghman Hussain Al daghman <sup>7</sup>; Hamad Mahdi Ali Al Zaman <sup>7</sup>; Atheer Abdullah Alqarni <sup>8</sup>

(1) Staff Nurse, Emergency Department, King Khalid Hospital, Najran City, Saudi Arabia

(2) Social Worker Staff, Social Work Department, New Najran General Hospital, Najran City, Saudi Arabia

(3) Epidemiological Monitoring Technician, Public Health Department, New Najran General Hospital, Najran City, Saudi Arabia

(4) Staff Nurse. North Fahd District Health Center. King Khalid Hospital, Najran City, Saudi Arabia

(5) Head Nurse, Nursing Specialist, Endoscopy Department, King Khalid Hospital, Najran City, Saudi Arabia

(6) Ali Naser Almurdef, Nursing Specialist, Endoscopy Department, King Khalid Hospital, Najran City, Saudi Arabia

(7) Staff Nurse, Medical Surgery Department, King Khalid Hospital, Najran City, Saudi Arabia

(8) Intern, Clinical Pharmacy, King Khalid University, Abha City, Saudi Arabia

## Corresponding author

Faisal Hussein Alkhaywani

Email: ffffx666@gmail.com

Received: November 2023. Accepted: November 2023; Published: December 1, 2023.

Citation: Faisal Hussein Alkhaywani et al. Patient's Perspective for their Non-Urgent Presentations to the Emergency Department in Najran City. World Family Medicine. December 2023; 21(11): 6-15. DOI: 10.5742/MEWFM.2023.95256218

## Abstract

**Aim of Study:** To explore patients' perspectives regarding the reasons why some less urgent, or non-urgent patients prefer to attend emergency departments (EDs) instead of using other more appropriate healthcare services.

**Methods:** This study followed a quantitative cross-sectional design. The study obtained and analyzed emergency attendance data from King Khalid Hospital, Najran City. A study questionnaire was designed by the researcher to interview 400 ED patients, who inappropriately attended the ED, to identify the reasons for their inappropriate attendance to the ED. Data collection was performed during the period of two months (November-December, 2022) to explore the proportions of different attendances that were deemed inappropriate according to the hospital's followed triage system. The interviews were conducted with the non-urgent and less urgent patients during their waiting times.

**Results:** The age of 18.3% of patients were <30 years old, while 28.5% were 30-39 years old. More than half of the participants' visits were non-urgent, while 43.25% were less-urgent, 55.3% of patients visited the ED before due to similar complaints, and 46% visited a primary health care center before their ED visits. The main reasons for visiting the ED instead of the primary healthcare center (PHCC) were to save time (49.3%)

and to get an earlier appointment (48%). Patients' triage levels differed significantly according to their age groups ( $p < 0.001$ ), nationality ( $p = 0.022$ ), educational level ( $p = 0.022$ ), marital status ( $p = 0.002$ ), ED visits due to 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 patients. 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 redirecting 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 studies on patients' perspective for non-urgent ED presentations are largely needed.

**Key Words:** Emergency Department, Triage, Quantitative Research, Najran City, Saudi Arabia.

## 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, 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. 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. These triage systems include the Australian Triage Scale, the Emergency Severity Index, and the Canadian Emergency Department Triage and Acuity Scale, 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 other healthcare services is expected to improve patient safety and promote better and more efficient access to ED services (6).

There is a gap in the current research, as most studies have concentrated on data from hospitals and postal questionnaires (3), rather than patients' reasons for attendance. Moreover, the results of this study are expected to provide important information to health administrators on the magnitude of inappropriate use of emergency departments and how to address this administrative problem.

This study aimed to explore patients' perspectives regarding the reasons why some less urgent, or non-urgent patients prefer to attend emergency departments 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 Najran City for a period of the last 3 years, identifying the proportions of different attendances that were deemed as appropriate (i.e., resuscitation, emergent, or urgent) or inappropriate (less urgent or non-urgent) according to the hospital's followed triage system.

The researchers purposively selected the largest tertiary care hospital in Najran City (i.e., King Khalid Hospital), which receives the largest number of ED patients in Najran City.

Based on the review of relevant literature, the researcher designed a structured interview questionnaire for data collection (3; 7). It included patients' sociodemographic characteristics and the ED visit characteristics.

The researcher conducted a pilot study on 20 ED patients to test the data collection tool. The time needed to fill 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.

This study included adult patients (aged above 18 years) who inappropriately attended the ED (less, and non-urgent cases). Children (aged <18 years) and those with higher emergency levels (resuscitation, emergent, and urgent cases) were excluded.

Following a convenience sampling, the researcher consecutively interviewed 400 patients who inappropriately attended the ED and 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 to the ED. The researchers visited the study hospital daily to conduct face-to-face interviews with ED patients using the study questionnaire. All interviews were conducted with the patients during their waiting times.

Quantitative data were collected from the hospital record system using existing coding. Collected data were coded and then entered and analyzed using the Statistical Package for Social Sciences (IBM, SPSS, version 25).

Descriptive statistics (frequency and percentage for qualitative variables in addition to mean and standard deviation for quantitative variables) were calculated. Cross-tabulation using  $\chi^2$ -test was used to measure the association between variables. P-values less than 0.05 were considered statistically significant.

## Results

Table (1) shows that the age of 18.3% of patients were less than 30 years old, while 28.5% were 30-39 years old, 33.3% were 40-49 years old and 20% were 50 years old or more.

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

Table (2) shows that 55.3% of patients visited the ED before due to similar complaints, while 46% visited a primary health care center before their visit to the ED.

Table (3) shows that the main reasons for visiting 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 near an emergency department (14.2%) and visiting the hospital for another reason at that time (12.3%).

Table (4) shows that patients' triage levels differed significantly according to their age groups ( $p < 0.001$ ), with the highest non-urgent prevalence among younger patients aged less than 30 years. Saudi patients visited the ED for non-urgent reasons significantly more than non-Saudi patients ( $p = 0.022$ ). Moreover, university-educated patients visited the ED for non-urgent reasons significantly more than less educated patients ( $p = 0.022$ ). In addition, single patients visited the ED for non-urgent reasons significantly more than married, divorced, or widowed patients ( $p = 0.002$ ). However, triage levels did not differ significantly according to patients' gender or employment status.

Table (5) shows that patients' 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 have not visited the PHCC before.

Table (6) shows that patients' 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 patients' choice to save time.

Table 1: Personal characteristics of participant patients

Personal Characteristics	No.	%
<b>Age (in years)</b>		
• <30	73	18.3
• 30-39	114	28.5
• 40-49	133	33.3
• 50+	80	20.0
<b>Gender</b>		
• Males	227	56.8
• Females	173	43.3
<b>Nationality</b>		
• Saudi	334	83.5
• Non-Saudi	66	16.5
<b>Educational level</b>		
• Illiterate	31	7.8
• School	94	23.5
• University	275	68.8
<b>Employment</b>		
• Student	17	4.3
• Retired	7	1.8
• Private	160	40.0
• Government	135	33.8
• Unemployed/Housewife	81	20.3
<b>Marital status</b>		
• Single	53	13.3
• Married	270	67.5
• Divorced	55	13.8
• Widow	22	5.5

Table 2: Previous visits to emergency departments or PHC centers by participant patients

Patients' previous visits	No.	%
<b>A previous visit to the ED due to similar complaints</b>		
• Yes	221	55.3
• No	179	44.8
<b>A previous visit to a PHCC for the current health problem</b>		
• Yes	184	46.0
• No	216	54.0

Table 3: Patients' perspectives regarding the reasons for visiting the Emergency Department instead of the primary healthcare center

Patients' 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

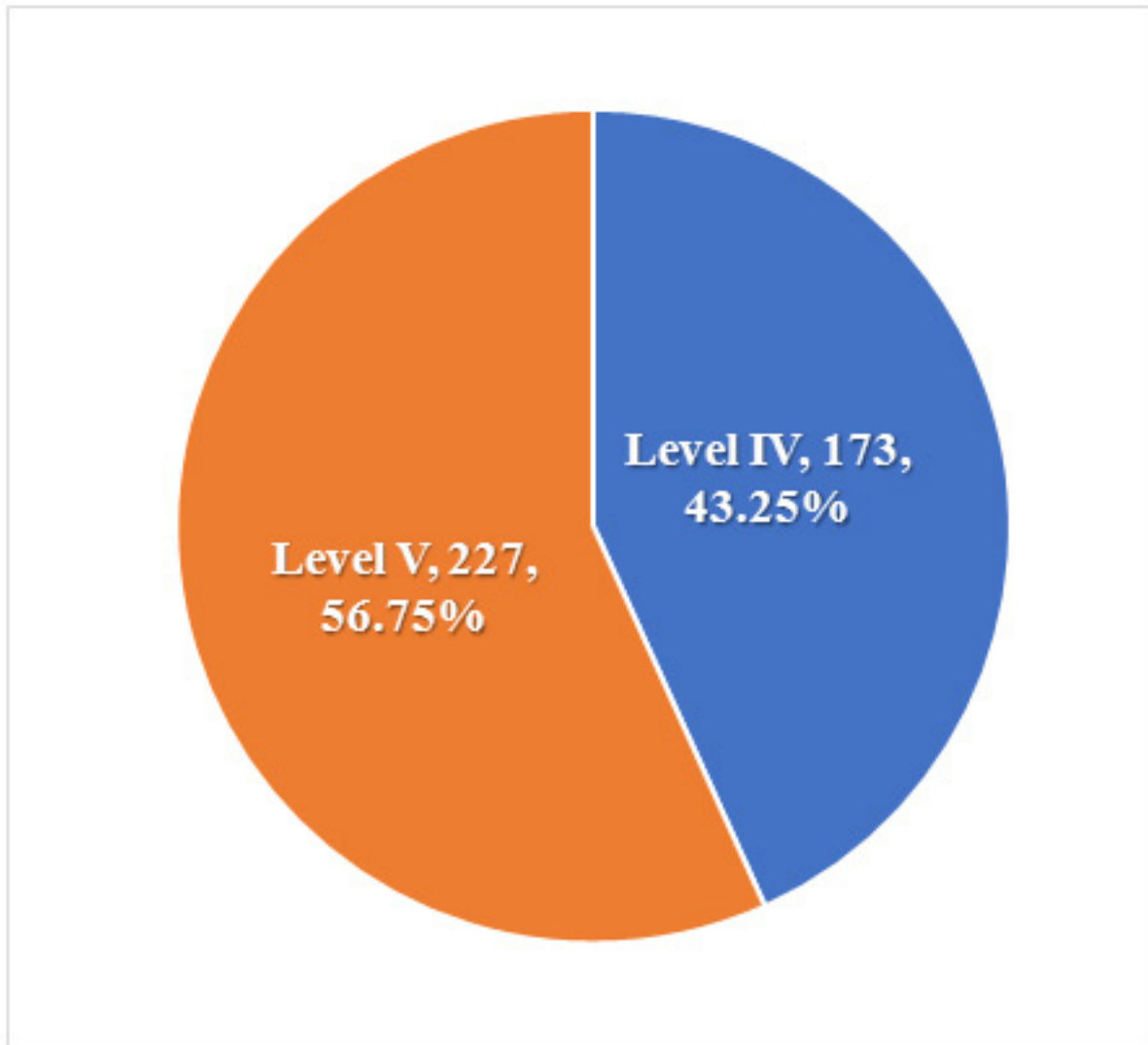
**Figure 1: Participant patients' emergency levels**

Table 4: Patients' triage levels according to their personal characteristics

Personal Characteristics	Less urgent (Level IV)		Non-urgent (Level V)		P Value
	No.	%	No.	%	
<b>Age (in years)</b>					
• <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	
<b>Gender</b>					
• Males	98	43.2	129	56.8	0.971
• Females	75	43.4	98	56.6	
<b>Nationality</b>					
• Saudi	136	40.7	198	59.3	0.022
• Non-Saudi	37	56.1	29	43.9	
<b>Educational level</b>					
• Illiterate	20	64.5	11	35.5	0.001
• School	51	54.3	43	45.7	
• University	102	37.1	173	62.9	
<b>Employment</b>					
• 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	
<b>Marital status</b>					
• Single	12	22.6	41	77.4	0.002
• Married	120	44.4	150	55.6	
• Divorced	26	47.3	29	52.7	
• Widow	15	68.2	7	31.8	

Table 5: Patients' triage levels according to their previous visits to emergency departments or primary healthcare centers

Patient's previous visits	Less urgent (Level IV)		Non-urgent (Level V)		P Value
	No.	%	No.	%	
<b>To ED due to similar complaints</b>					
• Yes	119	53.8	102	46.2	<0.001
• No	54	30.2	125	69.8	
<b>To a PHCC for the same health problem</b>					
• Yes	95	51.6	89	48.4	0.002
• No	78	36.1	138	63.9	

**Table 6: Patients' triage levels according to their perspectives regarding the reasons for visiting the Emergency Department instead of the PHC center**

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

## Discussion

It has been shown that more than half of the requests for healthcare services at EDs were completely non-urgent (8). This leads to unnecessary overcrowding at the ED, prolonged waiting times, decreased quality of received patient care, increased risk of medication errors, increased morbidity, excess deaths, and increased patient dissatisfaction (9).

Emergency services at Saudi governmental hospitals are frequently over-utilized for non-emergency cases (10). Therefore, the present study aimed to explore patients' perspectives regarding the reason why some less urgent, or non-urgent patients prefer to attend emergency departments instead of using other more appropriate healthcare services.

This study included 400 patients who non-urgently visited the ED in King Khalid Hospital in Najran City. More than half of the patients (56.75%) were non-urgent (Level V), while 43.25% were less-urgent patients (Level IV). Such inappropriate ED visits can impede the ability of ED physicians to timely and safely treat emergency patients. Therefore, non-urgent patients may hinder access to urgent cases and have a negative impact on staff attitudes (11).

There is wide variability in the magnitude of non-urgent visits to EDs, mainly due to the varying definitions and the subjective nature of measuring the ED visit appropriateness. Internationally, 24-40% of all ED visits are inappropriate (12).

Taype-Huamaní et al. (13) noted 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.

The majority of our patients who visited the ED in King Khalid Hospital in Najran City were Saudi (83.5%), males (56.8%), married (67.5%), 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, among university-educated than less-educated patients, and among single than married, divorced, or widowed patients.

In Jeddah City, Alabbasi et al. (10) found that among ED patients visiting King Abdullah Medical Complex, 65% were less urgent, while 9.9% were non-urgent. Males constituted 62.5% of the ED patients and their mean age ( $\pm$ SD) was 31.7 $\pm$ 16.0 years. 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. Most of the non-urgent patients were females. There was no significant sex difference between less-urgent and non-urgent patients, but less-urgent patients were significantly younger than non-urgent patients (interquartile ranges: 12-38 vs. 22-41

years, respectively,  $p < 0.001$ ); having more single patients (56.6% vs. 48.2%, respectively,  $p < 0.001$ ), and more Saudi patients (91.3% vs. 80.9%, respectively,  $p < 0.001$ ).

In Sweden, Backman et al. (15) found that non-urgent ED patients were mainly females, aged 35–49 years, married, and mostly high-school or university-educated. Moreover, a study of ED use in the UK found that 78% of ED attendances were quite avoidable (16). Moreover, in the USA, several studies have shown that 30% to 50% of non-urgent conditions visit the ED (17). In Peru, Taype-Huamani et al. (13) reported that non-urgent ED patients were mainly females, those who live within families, and with high school or university qualifications.

Similar to our findings, McHale et al. (18) reported that males were more likely to attend inappropriately than females. However, females are more likely to visit ED inappropriately than males as reported by Carret et al. (12) and Oktay et al. (19). This variation may reflect differences in the definition of inappropriate ED presentation or differences in the structure and use of healthcare services among countries.

Tsai et al. (20) found that the mean age of non-urgent ED patients in Taiwan was 37.4 years. Similarly, Gentile et al. (21) reported that the mean age of French non-urgent ED patients was 36.3 years. Likewise, in Turkey, Idil et al. (3) reported that the mean age of non-urgent patients was 38.4 years.

McHale et al. (18) noted that patients' age has a strong relationship with their inappropriate ED presentation. Inappropriate presentations were high among the mid-twenties, followed by a steady decrease as age increased thereafter. Therefore, findings suggest that interventions to prevent inappropriate presentations should be targeted toward those in their mid-twenties. This may be achieved through targeted education about the proper use of ED services, or by providing details of other local healthcare services that provide prompt medical advice on when to access primary care and out-of-hours services available. The peak in odds of inappropriate presentations seen in the late twenties could reflect their poor understanding regarding the proper use of ED services, lack of knowledge of other health services available, and poor access to primary care.

The present study revealed that more than half of the participants have visited the ED before due to similar complaints, while 46% visited a primary health care center before they visited the ED. Patients' main perspectives regarding the reasons for visiting the ED instead of the PHCC were to save time, to get an earlier appointment for healthcare, prefer the ED to receive healthcare, live nearby to an ED emergency department, and be at the hospital for any other reason. Non-urgent visits were significantly higher among those who did not visit the ED before. Moreover, non-urgent visits were significantly higher among those who came directly to the ED without a previous visit to the PHCC. Moreover, patients' triage levels differed significantly according to patients' 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.

These findings be explained by that younger patients would presumably have less self-health knowledge and/or have no prior experience of their current reason for attending, and therefore do not know if their condition was urgent or not.

Al-Nozha et al. (22) reported that half of the medical directors in Riyadh City, KSA, 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).

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. (23) argued 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.

McHale et al. (18) noted that 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. (17) 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.

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 (2). 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 (18).

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 (18). 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 general surgery practice. This has been intended to provide alternative options for what is considered inappropriate ED attendance (24).

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 KSA, especially primary and preventive care. These plans have identified problems with the current healthcare system, including the burden faced by EDs, and have proposed targets for improving access to and quality of healthcare in the KSA, particularly primary and preventative care (5).

### Study Strengths and Limitations

This study contributes to evidence-based decisions to minimize inappropriate emergency attendance and 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, patient identified perspectives will provide healthcare administration with a clear identification of problems in the primary healthcare system that encourage patients to make inappropriate short-cut ED visits. Moreover, to the researcher’s knowledge, this study is the first in Saudi Arabia to explore patient perspectives regarding their inappropriate visits to emergency departments. 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 (25). Moreover, data collection regarding patients’ perspectives was completely subjective. In addition, the study included a single site, i.e., King Khalid Hospital in Najran City.

In conclusion, there is a clear relationship between inappropriate ED visits and certain associated factors, e.g., patients’ age, nationality, and education indicating that prevention would be best targeted to certain categories, such as Saudi, younger, educated patients. Patients stated main reasons for their inappropriate ED visits are to save time and to avoid getting a late appointment. Therefore, it is important to implement proper health education and to redirect patients with inappropriate ED visits. Moreover, it is important to conduct a detailed analysis of the shortages in the utilization of primary healthcare resources which is a pressing necessity as well as to raise the public’s awareness regarding the negative consequences of inappropriate visits to emergency departments.

### References

- Mohr, N.M.; Wessman, B.T.; Bassin, B.; Elie-Turenne, M.C.; Ellender, T.; Emler, L.L.; et al. (2020). Boarding of Critically Ill Patients in the Emergency Department. *Crit Care Med.* , 48(8): 1180–1187. doi: 10.1097/CCM.0000000000004385.
- Morley, C.; Unwin, M.; Peterson, G.M.; Stankovich, J.; & Kinsman L. (2018). Emergency department crowding: A systematic review of causes., consequences and solutions. *PLoS ONE*, 13(8): e0203316. <https://doi.org/10.1371/journal.pone.0203316>.
- Idil, H., Kilic., T.Y., Toker., I., Turan., K.D., & Yesilaras., M. (2018). Non-urgent adult patients in the emergency department: Causes and patient characteristics. *Turkish Journal of Emergency Medicine* 18:71-74.
- Yancey, C.C. & O'Rourke, M.C. (2021). Emergency Department Triage. *StatPearls* [Internet]. Website: Emergency Department Triage - StatPearls - NCBI Bookshelf (nih.gov). Accessed on May 1st., 2022.
- Khattab, E.; Sabbagh, A.; Aljerian, N.; Binsalleeh, H, Almulhim, M, Alqahtani, A et al. (2019). Emergency medicine in Saudi Arabia: a century of progress and a bright vision for the future. *International Journal of Emergency Medicine*; 12:16.
- Aljohani, M.S. (2017). Emergency department triage in Saudi Arabia: towards a standardised national triage system. *Medicine*. DOI:10.4225/03/5894008D94B97. Corpus ID: 201151173. Website: [PDF] Emergency department triage in Saudi Arabia: towards a standardised national triage system | Semantic Scholar. Accessed on 2/3/2022.
- Arafat, A.; Al-Farhan, A.; & Abu Khalil, H. (2016). Implementation of the Canadian Emergency Department Triage and Acuity Scale (CTAS) in an Urgent Care Center in Saudi Arabia. *International Journal of Emergency Medicine* 2016; 9:17.
- Read, J.G.; Varughese, S.; & Cameron PA. (2014). Determinants of non-urgent Emergency Department attendance among females in Qatar. *Qatar Med J.*, 16:98e105.
- Di Somma S., Paladino L., Vaughan L., Lalle I., Magrini L., Magnanti M. Overcrowding in emergency department: an international issue. *Intern Emerg Med.* 2015; 10(2): 171–5.
- Alabbasi K.; Kruger E.; Tennant, M. (2021). Evaluation of Emergency Health-Care Initiatives to Reduce Overcrowding in a Referral Medical Complex., Jeddah., Saudi Arabia. *Saudi J Health Syst Res*, 1:134–139. DOI: 10.1159/000517487.
- Durand., A.C., Palazzolo., S., Tanti-Hardouin., N., Gerbeaux., P., Sambuc., R., Gentile., S. (2012). Non-urgent patients in emergency departments: rational or irresponsible consumers? Perceptions of professionals and patients. *BMC Res Notes* 2012; 5:525-533.
- Carret, M., Fassa A., Kawachi, I. (2007). Demand for emergency health service: factors associated with inappropriate use. *BMC Health Serv Res*, 7:131.

13. Taype-Huamani, W.; De la Cruz-Rojas, L.; Miranda-Soler, D.; & Amado-Tineo, J. (2020). Characteristics of the non-urgent demand in the emergency service of a social security hospital in Peru. *Rev. Fac. Med. Hum*, 20(1):20-26. DOI 10.25176/RFMH.v20i1.2544.
14. Alnasser, S.; Alharbi M.; Alibrahim AA.; Al Ibrahim AA.; Kentab O.; Alassaf W.; et al. Analysis of Emergency Department Use by Non-Urgent Patients and Their Visit Characteristics at an Academic Center. *International Journal of General Medicine* 2023;16 221–232.
15. Backman, A-S.; Blomqvist, P.; Lagerlund, M.; Carlsson-Holm, E.; & Adami, J. (2008). Characteristics of non-urgent patients. Cross-sectional study of emergency department and primary care patients. *Scandinavian Journal of Primary Health Care*, 26: 181-187.
16. Harris, M.J., Patel, B., & Bowen, S. (2011). Primary care access and its relationship with emergency department utilisation: an observational., cross-sectional., ecological study. *Br J Gen Pract*, 61:e787–e793.
17. Uscher-Pines, L.; Pines, J.; Kellermann, A.; Gillen, E.; & Mehrotra, A. (2013). Emergency department visits for nonurgent conditions: systematic literature review. *Am J Manag Care*; 19(1):47–59.
18. McHale, P.; Wood, S.; Hughes, K.; Bellis, M.A.; Demnitz, U. & Wyke, S. (2013). Who uses emergency departments inappropriately and when - a national cross-sectional study using a monitoring data system. *BMC Medicine.*, 11:258.
19. Oktay, C.; Cete, Y.; Eray, O.; Pekdemir, M.; & Gunerli, A, (2003). Appropriateness of emergency department visits in a Turkish university hospital. *Croat Med J*, 44:585–591.
20. Tsai, J.C.H.; Liang, Y.W.; & Pearson, W.S. (2010). Utilization of emergency department in patients with non-urgent medical problems: patient preference and emergency department convenience. *J Formos Med Assoc.*, 109:533e542.
21. Gentile S., Vignally, P., Durand, A.C., Gainotti, S., Sambuc R., Gerbeaux, P. (2010). Nonurgent patients in the emergency department? A French formula to prevent misuse. *BMC Health Serv Res*, 10(1):66.
22. Al-Nozha, M.M.; Abdullah, M.; Arafah, MR.; Khalil, M.Z.; Khan, N.B.; Al-Mazrou, Y.Y.; et al. (2007). Hypertension in Saudi Arabia. *Saudi Med J.*, 28(1):77–84.
23. Bezzina, A.J., Smith, P.B., Cromwell, D., & Eagar, K. (2005). Primary care patients in the emergency department: Who are they? A review of the definition of the 'primary care patient' in the emergency department. *Emerg Med Australas.*, 17:472–479.
24. Bosmans., J.E., Boeke., A.J., van Randwijck-Jacobze., M.E., Grol., S.M., Kramer., M.H., van der Horst., H.E., van Tulder., M.W. (2012). Addition of a general practitioner to the accident and emergency department: a cost-effective innovation in emergency care. *Emerg Med J.*, 29:192–196.
25. Wang, X.; & Cheng, Z. (2020). Cross-Sectional Studies: Strengths., Weaknesses., and Recommendations. *Chest*, 158(1): S65-S71.