Emergency Care Journal

Official Journal of the Academy of Emergency Medicine and Care (AcEMC)

eISSN 2282-2054

https://www.pagepressjournals.org/index.php/ecj/index

Emerg Care J 2024 [Online ahead of print]

To cite this Article:

Alnaeem MM, Suleiman KH, Ababneh AM, Alrida N. **Investigating primary healthcare resource utilization, triage system awareness, and time expectations among patients presenting at emergency departments in Jordan: a cross-sectional study.** *Emerg Care J* doi: 10.4081/ecj.2024.12549

Investigating primary healthcare resource utilization, triage system awareness, and time expectations among patients presenting at emergency departments in Jordan: a cross-sectional study

Mohammad M. Alnaeem,[1] Khaled H. Suleiman,[1] Amal M. Ababneh,[2] Nour Alrida[3]

[1]School of Nursing, Al-Zaytoonah University of Jordan, Amman; [2]School of Nursing, Jerash University, Jerash; [3]School of Nursing, Yarmouk University, Irbid, Jordan

Corresponding author: Mohammad M. Alnaeem, School of Nursing, Al-Zaytoonah University of Jordan, 11733 Amman, Jordan.

E-mail: mmalnaeem33@gmail.com

Key words: triage system, emergency departments, healthcare resource, patient awareness, wait times, Jordan.

Authors' contributions: MMA, KHS, AMA designed the research study; MMA, KHS performed the research; MMA, KHS, AMA, NA wrote the manuscript. All authors contributed to editorial changes in the manuscript, read and approved the final manuscript, and agreed to be held accountable for all aspects of the work.

Conflict of interest: the authors declare no potential conflict of interest.

Funding: none.

Ethics approval and consent to participate: the study was approved by Al-Zaytoonah University of Jordan (No. 2024-2023/133/03) and the Ministry of Health (No. MOH/REC/2023/480). The researcher interviewed the head nurse in the Emergency Department to explain the purpose of the study, while patients were interviewed in the triage room. Participants who met the study criteria were given full description for the study purpose and the significant of the study.

Informed consent: all participants were informed of their right to withdraw without consequences. The interested participants signed the consent form and completed the questionnaire. All filled questionnaires were kept secure and anonymized. The researcher stored the completed questionnaires in a sealed envelope in the researcher's office, ensuring that only the researcher had access to the data. After data entry, analysis, and publication, the questionnaires will be discarded.

Availability of data and material: All data generated during this study are included in this published article.

Acknowledgments: The study participants are sincerely appreciated by the researchers for their important participation and contributions. Our study has been greatly enhanced by your willingness to share your experiences and viewpoints.

Abstract

This study aims to investigate patients' knowledge of the triage system, utilization of primary healthcare resources, and expectations for waiting times in Jordanian Emergency Departments (EDs). A descriptive, cross-sectional design was employed in the EDs in the largest public hospitals in Jordan. Convenient sampling resulted in 726 participants. A self-reported questionnaire included socio-demographic information and instruments assessing primary healthcare use, triage system awareness, and expected waiting times. Most participants (61.3%) lacked awareness of the triage system. The use of primary healthcare was influenced by age, education, marital status, current job, nationality, and location. Having a primary healthcare provider was associated with higher patient satisfaction. Significant variations in expected waiting times for diagnostic test results were noted based on gender, place of residence, education, current job, and marital status. Addressing patient awareness of the triage system is crucial for optimizing healthcare accessibility and quality in Jordanian EDs. Improving patient education, communication, and primary care utilization can enhance patient outcomes, reduce ED burden, and contribute to a more efficient healthcare system.

Introduction

The Emergency Department (ED) uses a triage system where a nurse assesses the nature and severity of a patient's illness.[1,2] Patients are classified into five levels: immediate, emergent, urgent, less urgent, and not urgent.[3] The open-door policy and easy access to the ED impact medical care. Dealing with non-urgent and urgent cases can lead to inefficiency and increased waiting times, causing stress and fatigue for healthcare providers.[4-6] This can result in verbal and physical violence and lead to staff turnover, posing a threat to patient safety.[7]

The lack of patient awareness about the triage process can cause tension and unpredictability in patient care.[8] Patients' awareness about using primary healthcare resources is important to minimize pressure on the ED and its staff.[9] Understanding the patterns of patient engagement with primary healthcare facilities before resorting to ED visits is crucial for healthcare professionals and policymakers.[10] Patients frequently start at primary care facilities before visiting the ED, and understanding this can help optimize the allocation of healthcare services.[11] Despite primary healthcare facilities being widely available in Jordan, patients are still not properly aware of the triage system.[12]

High patient loads, crowding, and increased violence are significant challenges faced by EDs.[13-15] Enhancing patient awareness can help allocate resources more efficiently and reduce wait times, resulting in better patient care and increased awareness of the triage system.

Another factor related to their awareness is patients' expectations of the length of time they would have to wait at the ED. Exploring patients' expectations regarding the turnaround time for test results in primary healthcare settings is important.[16,17] Delays in result communication can influence patients' decisions to seek emergency care, increasing anxiety and uncertainty.[9]

Educating the public on the ED's operations and patients' rights and responsibilities is crucial to the ED's operation and staff productivity.[12,18] Optimizing healthcare accessibility and quality requires addressing patient awareness of the triage system in the ED.[19,20] In Jordan, teaching people about the triage procedure is essential, as EDs frequently deal with a large number of patients seeking care.[21] Raising patient knowledge of triage in Jordanian EDs is essential to enhancing both the effectiveness of care delivery and the general patient experience in the medical system.[12,22] Accordingly, this study aimed to investigate the patients' knowledge about the triage system, using primary healthcare resources before ED visits, and the expected time for waiting for test results at EDs in Jordan.

Materials and Methods

Study design

A descriptive, cross-sectional design was used to study the use of primary healthcare resources, awareness of the triage system, and time expectations among Jordanian patients visiting the ED. This study was carried out at the largest public hospital in Jordan, which provides care for 30-45% of the Jordanian population with various medical conditions.

Sample and sampling

A convenience sampling technique was used to select the participants who met the study criteria. Eligible participants included adult patients over 18 years old arriving at the ED and able to engage

in the study. The study excluded critically ill patients classified as level immediate or emergent triage categories, pediatric patients, and those with cognitive impairments.

Study variables and measurements

Data was collected using a self-reported questionnaire consisting of two parts. The first part is a socio-demographic questionnaire including categories such as age, gender, education, current job, marital status, residence, nationality, and monthly income. The second part is the Discounted Cash Flow Interview (DCF) survey, which was used to measure patients' awareness of the quality of nursing care in hospitals. This survey was developed by Seibert *et al*.,[23] in the USA, and it is available in Arabic by Alhabdan *et al*.[24] The tool includes questions with a range of answers, including open-ended responses, multiple-choice, and a 4-point scale (ranging from "not at all important" to "very important"). Each answer is assigned a score of (1) or (2), and multiple answers can be selected. The tool is designed to gather information about common health issues among the ED patients in the triage rooms.

The DCF tool consists of 31 items divided into two sections: sociodemographic data and awareness items. The awareness section encompasses items across four domains: i) use of primary health care facilities before the patient visits the ED; ii) knowledge of the emergency triage system; iii) the ED visitor's expectations; iv) the expected time for test results to be obtained in the EDs.

For the purpose of this study, the following domains were utilized: i) use of primary health care facilities before the patient visits the ED (7 items), with different forms of questions (multiple-choice and open-ended questions); ii) knowledge of the emergency triage system (5 items), two open-ended questions and three multiple-choice questions; iii) the expected time for test results to

be taken in the EDs (open-ended questions and the answers filled in the minutes as the time required to take the results of x-ray, laboratory tests, consultation, Computed Tomography, CT, scan, and admission). This survey tool was validated and found to be reliable, with a Cronbach's alpha of 0.77-0.83.[23,24] In the current study, the Cronbach's alpha was 0.85.

Data collection procedures

The study was approved by Al-Zaytoonah University of Jordan (No. 2024-2023/133/03) and the Ministry of Health (No. MOH/REC/2023/480). The researcher interviewed the head nurse in the ED to explain the purpose of the study, while patients were interviewed in the triage room. Participants who met the study criteria were given full description for the study purpose and the significant of the study. All participants were informed of their right to withdraw without consequences. The interested participants signed the consent form and completed the questionnaire. All filled questionnaires were kept secure and anonymized. The researcher stored the completed questionnaires in a sealed envelope in the researcher's office, ensuring that only the researcher had access to the data. After data entry, analysis, and publication, the questionnaires will be discarded. The study was conducted from June to September 2023

Data analysis

The study utilized the Statistical Package for Social Sciences (SPSS) version 26 software for data analysis. Descriptive and inferential statistics were used. Independent t-tests were used to measure the relationship between continuous variables dichotomous items. The chi-square correlation test was used to determine the relationship between two categorical variables. Also, ANOVA test was

used to find the relationship between continuous variables and categorical variables with 3 or more variables. A p-value <0.05 was considered statistically significant.

Results

The sample in this study was all patients who received treatment in EDs in public hospitals in Jordan. The number of questionnaires were distributed was 800, of them, 74 questionnaires were excluded (due to incomplete responses); thus, the final sample for analysis was 726 participants, achieving a response rate of 90.8 % which considered to be a high response rate.

Description of the sample

The mean age of the participants was 38.1 (Standard Deviation, SD=12.9), and the age of the participants varied from 18 to 89 years. More than half of the participants were male (n=383, 52.8%), and married (n=425, 58.5%). Those who hold a bachelor's degree were 54.9%, and 17.4% were illiterate. Most of the participants (60.4%) were employed in different jobs, and 20.2% were working in healthcare institutions. The majority of participants (89.4%) were Jordanians and resided in Amman (59.2%). More than one-third of the participants had monthly incomes ranging from more than 400 Jordan dinars (54.4%) (Table 1).

Use of primary health care facilities before visiting the Emergency Department

Most patients reported that receiving regular care was the highest reason for coming to the ED (n=243, 33.5%), followed by insurance coverage (n=155, 21.3%). Most of the participants (68.2%) did not have primary care physicians or other healthcare providers (didn't refer to primary healthcare settings), and 31.7% of participants did not try to call them before coming to the ED. Most participants reported that the current problem began on the same day of the ED visit (46.3%), and 21.2 % had a chronic illness for a long time (Table 2).

Knowledge about the triage system and expected time for test results

Regarding the knowledge about the triage system, most of the participants (61.3%) were unaware of what it does mean the triage system. More than half of respondents (58.4%) know what does it mean "teaching hospital" and know they are now receiving care in an educational hospital. Most patients (59.8%) know why some patients were taken to a room before others (even though they may not have waited long). The majority think the triaging system is fair enough for all (73.6 %). However, those who did not know what triage means accounted for 61.3% of the participants. Regarding the expected time for test results to be taken in the ED, the highest item was for the laboratory tests, which was 72.93 (SD=31.30), as this time varied from 6-300 minutes. For the expected time for getting the X-ray results, the mean was 31.32 (SD=38.75), which ranged 2-400 minutes. However, the mean expected time to wait for a CT scan, consultation report, and admission were comparable (Table 3).

Relationship between using primary healthcare resources and socio-demographic variables

For using primary healthcare facilities before the patient's ED visit, the chi-square test revealed a significant relationship between the time of starting the problem and the patient's age (X^2=31.6, p<0.001), education level (X^2=17.1, p<0.009), and marital status (X^2=39.4, p<0.001).

Trying to contact doctors before coming to the emergency room was significantly associated with age (X^2=7.22, p<0.007) and family income (X^2=5.84, p<0.007). Furthermore, the main reason to visit EDs was significantly related to patients' gender (X^2=24.5, p<0.001), current job (X^2=56.6, p<0.001), nationality (X^2=10.8, p<0.05), and place of residence (X^2=31.6, p<0.001), and family income (X^2=5.84, p<0.044). however, having a primary care doctor or other health provider was not significantly associated with sociodemographic data (p>0.05) (Table 4).

Relationship between patient's knowledge and socio-demographic variables

For participants' knowledge about the triage system during the patient's ED visit, the chi-square test revealed that recognizing why some patients are taken to a room before others, even though they may not have waited as long, was significantly related to participants' education level (X^2=17.9, p<0.001), current job (X^2=18.5, p<0.001), and nationality (X^2=10.3, p<0.001). Additionally, thinking that some patients are taken to a room before others are fair was associated significantly with patients' education level (X^2=6.90, p<0.05), current job (X^2=13.4, p<0.01), and nationality (X^2=20.7, p<0.001) (Table 5).

Knowing what triage means also had a significant relationship with participants' education level (X^2=15.6, p<0.001), current job (X^2=14.9, p<0.01), marital status (X^2=7.26, p<0.05), and

nationality (X^2=7.15, p<0.008). However, the other items of the knowledge about triage system variables were not significantly related to sociodemographic variables (p>0.05) (Table 5).

Relationship between expected time to wait and socio-demographic variables

Table 5 represents the relationship between the socio-demographic variables (age, gender, marital status, monthly income, education, current job, residence, and nationality) and the expected time to wait for the results of diagnostic tests. The results showed that the participants' gender had a statistically significant relationship with time waiting for the laboratory (t=-2.55, p<0.01), X-ray (t=1.79, p<0.05), CT scan (t=2.54, p<0.01), and consultation (t=2.15, p<0.05) results. The male reported a higher waiting time than the female for the results of the X-ray, CT scan, and consultation. In comparison, the female reported a higher waiting time for laboratory results. Also, the education levels and the current jobs of the participants were significantly associated with the waiting time for the results of diagnostic tests. The results of a one-way ANOVA revealed that the education level had a statistically significant difference in the expected time to wait for a CT scan (F=5.983, p<0.01) and consultation (F=5.60, p<0.01) results (Table 5). The post-hoc results showed that the participants who had a diploma or higher educational level reported a higher mean waiting time to receive the CT scan report (Mean $_{difference}$ =9.77) (p<0.01) and consultation (Mean $_{difference}$ =6.96) (p<0.01) than those who completed higher school (p<0.05). As well, for the current job, the expected time to wait for a consultation (F=3.160, p<0.05) and admission (F=2.640, p<0.05) was significantly different. The post-hoc results showed that the participants who worked in the private sector reported a higher mean waiting time for consultation (Mean $_{difference}$ =8.188) (p<0.05) and admission (Mean $_{difference}$ =8.366) (p<0.05) than those in government jobs (Table 6).

Discussion

The study revealed that there is a low level of awareness about the triage system among patients receiving care in the EDs of Jordanian public hospitals, which is consistent with findings in other countries.[12,25-27] It is crucial to address this lack of awareness by developing a culture that prioritizes learning and advancement to reinforce patient safety. Patients have expressed their willingness to receive more information about ED functions, which could enhance treatment quality and reduce wait times.[17,22] Offering patients comprehensive information about the triage system and ED operations has been shown to positively influence patient satisfaction and overall experience. Therefore, enhancing patient education and communication could potentially improve patient outcomes and refine healthcare delivery in EDs.

The study also highlighted the importance of regular primary care visits, especially for patients with chronic conditions. These visits allow for proactive preventive care and care management, potentially preventing adverse events such as ED visits and hospitalizations.[28] Utilizing primary healthcare facilities effectively can promote patient well-being and reduce healthcare costs. However, a significant proportion of patients are not effectively utilizing primary healthcare facilities, with regular ED visits and insurance coverage being the main reasons for this trend, leading to an increased reliance on EDs for their healthcare needs.[24,29,30]

Furthermore, the study found that patients who have a primary care doctor or other healthcare providers are more satisfied than others, particularly regarding the use of primary healthcare facilities before visiting the ED.[29,30] This suggests that having access to primary care and using it before visiting the ED is associated with higher satisfaction with nursing care.[31] A study on Medicare fee-for-service beneficiaries found that regular visits to primary care could allow for

more orderly and proactive delivery of preventive care and care management, potentially averting adverse events such as ED visits and hospitalizations. Understanding the reasons for ED visits, such as the influence of insurance coverage and the frequency of primary care visits, is essential for improving patient outcomes and healthcare resource utilization.

In the healthcare sector of Jordan, a positive association was observed between findings suggesting that a significant proportion of patients are not utilizing primary healthcare facilities effectively, leading to an increased reliance on EDs.[12] The study emphasizes the need for effective communication, documentation, and regular training in nursing care, emphasizing the need for healthcare professionals to be aware of these factors and tailor their care accordingly.[7,12,14,15] The study reveals mixed results regarding patients' knowledge of the triage system, with some patients not familiar with it, while others understood it. However, the majority of respondents knew what "teaching hospital" meant and were now receiving care in an educational hospital. Most patients were receptive to hearing updates about possible delays, with a preference for updates every 30 minutes.[24] They expressed a desire for further information about how the ED functions, with a preference for receiving this information via a video playing in the waiting room.[20] A significant percentage of patients expressed interest in receiving further information about specific medical conditions and the healthcare system, indicating a desire for increased knowledge and understanding of their health and the care they receive.

Additionally, over half of the participants believed that teaching hospitals place more emphasis on patient education, underscoring the importance of patient education and the potential impact of the healthcare setting on patient care and experience. Healthcare providers must recognize the significance of patient education and ensure patients have access to accurate and comprehensive

information about their medical conditions and the healthcare system. Addressing patients' desire for increased knowledge and understanding empowers them to make informed decisions about their health and actively participate in their care. Understanding patients' perceptions of teaching hospitals as having a stronger focus on patient education can inform strategies to enhance patient-centered education initiatives.

Finally, it's important to note that there are some limitations in this study. While it provides insights into the use of healthcare resources and awareness of triage in Jordan's largest public hospitals' emergency rooms, there are certain limitations that may affect the generalizability and accuracy of the study, such as convenience sample bias and the use of self-reported data. Additionally, establishing causal links is hindered by the cross-sectional nature of the study, and bias may be introduced by leaving out some responses.

Conclusions

Patients are mostly unaware of the triage system. The study highlights that healthcare providers must focus on enhancing patients' understanding of the triage system to improve treatment quality and reduce wait times. Policymakers could incorporate guidelines and regulations to enhance the importance of effective communication and technology in triage processes. Future studies could focus more on improving triage awareness allocation and motivating patients to adopt a triage-aware culture.

References

1. Wolf L, Delao A, Clark P, et al. The effect of mandatory triage questions on triage processes: a qualitative exploratory study. J Emerg Nurs 2024;50:84-94.
2. Sax DR, Warton EM, Mark DG, et al. Evaluation of the emergency severity index in US emergency departments for the rate of mistriage. JAMA Network Open 2023;6:e233404.
3. Bazyar J, Farrokhi M, Salari A, et al. The principles of triage in emergencies and disasters: a systematic review. Prehosp Disaster Med 2020;35:305-13.
4. Abass G, Asery A, Al Badr A, et al. Patient satisfaction with the emergency department services at an academic teaching hospital. J Family Med Primary Care 2021;10:1718.
5. Idil H, Kilic TY, Toker I, et al. Non-urgent adult patients in the emergency department: Causes and patient characteristics. Turkish J Emerg Med 2018;18:71-4.
6. Zaboli A, Sibilio S, Magnarelli G, et al. Nurses in the eye of the storm: a study of violence against healthcare personnel working in the emergency department. Emerg Med J 2024;41:501-2.
7. Göransson M, Persson A-C, Abelsson A. Triage in primary healthcare. Nordic J Nurs Res 2020;40:213-20.
8. Wolf LA, Delao AM, Perhats C, et al. Triaging the emergency department, not the patient: United States emergency nurses' experience of the triage process. J Emerg Nurs 2018;44:258-66.
9. O'Cathain A, Connell J, Long J, et al. 'Clinically unnecessary' use of emergency and urgent care: a realist review of patients' decision making. Health Expectations 2020;23:19-40.
10. Lutz BJ, Hall AG, Vanhille SB, et al. A framework illustrating care-seeking among older adults in a hospital emergency department. Gerontologist 2018;58:942-52.

11. Bombard Y, Ross Baker G, Orlando E, et al. Engaging patients to improve quality of care: a systematic review. Implement Sci 2018;13:1-22.

12. AlShatarat M, Rayan A, Eshah NF, et al. Triage knowledge and practice and associated factors among emergency department nurses. SAGE Open Nurs 2022;8:23779608221130588.

13. Al-Kalaldeh M, Al-Bdour E, Shosha GA. Patients' evaluation of the quality of emergency care services in Jordan: integration of patient centeredness model. Res Theory Nurs Practice 2021;RTNP-D-21-00037.

14. Suleiman K, Hijazi Z, Al-Khalalde M, Abu Sharour L. Quality of nursing work life and related factors among emergency nurses in Jordan. J Occupational Health 2019;61:398-406.

15. Subih M, Salem H, Al Omari D. Evaluation of compassion fatigue and compassion satisfaction among emergency nurses in Jordan: a cross-sectional study. Internat Emerg Nurs 2023;66:101232.

16. Phiri M, Heyns T, Coetzee I. Patients' experiences of triage in an emergency department: a phenomenographic study. Applied Nurs Res 2020;54:151271.

17. Abidova A, da Silva PA, Moreira S. Predictors of patient satisfaction and the perceived quality of healthcare in an emergency department in Portugal. Western J Emerg Med 2020;21:391.

18. Kelen GD, et al. Emergency department crowding: the canary in the health care system. NEJM 2021;2:CAT.21.0217.

19. Magnusson C, Herlitz J, Axelsson C. Patient characteristics, triage utilisation, level of care, and outcomes in an unselected adult patient population seen by the emergency medical services: a prospective observational study. BMC EmergMed 2020;20:1-19.

20. Alsulimani LK. Public awareness of triage in emergency departments in Saudi Arabia in the era of COVID-19. Saudi J Emerg Med 2022;3:120-9.

21. Alowais SA, Alghamdi SS, Alsuhebany N, et al. Revolutionizing healthcare: the role of artificial intelligence in clinical practice. BMC Med Educ 2023;23:689.

22. Özhanlı Y, Akyolcu N. Satisfaction of patients with triage and nursing practice in emergency departments. Florence Nightingale J Nurs 2020;28:49.

23. Seibert T, Veazey K, Leccese P, Druck J. What do patients want? Survey of patient desires for education in an urban university hospital. Western J Emerg Med 2014;15:764.

24. Alhabdan N, Alhusain F, Alharbi A, et al. Exploring emergency department visits: factors influencing individuals' decisions, knowledge of triage systems and waiting times, and experiences during visits to a tertiary hospital in Saudi Arabia. Internat J Emerg Med 2019;12:1-8.

25. Mirmozaffari M, Kamal N. The application of data envelopment analysis to emergency departments and management of emergency conditions: a narrative review. Healthcare 2023;11:2541.

26. Zachariasse JM, van der Hagen V, Seiger N, et al. Performance of triage systems in emergency care: a systematic review and meta-analysis. BMJ Open 2019;9:e026471.

27. Yusefi AR, Sarvestani SR, Kavosi Z, et al. Patients' perceptions of the quality of nursing services. BMC Nursing 2022;21:1-11.

28. Khazen M, Abu Ahmad W, Spolter F, et al. Greater temporal regularity of primary care visits was associated with reduced hospitalizations and mortality, even after controlling for continuity of care. BMC Health Serv Res 2023;23:777.

29. Davey K, Jacob S, Prasad N, et al. Characteristics and expectations among emergency department patients in India. PLOS Global Public Health 2022;2:e0000009.

30. Rose AJ, Timbie JW, Setodji C, et al. Primary care visit regularity and patient outcomes: an observational study. J General Internal Med 2019;34:82-9.

31. Workina A, Habtamu A, Zewdie W. Reasons for emergency department visit, outcomes, and associated factors of oncologic patients at emergency department of Jimma University Medical Centre. Open Access Emerg Med 2022;14:581-90.

Table 1. Characteristics of the sample (N=726).

Variable	**N**	**%**
Age		
Mean ± SD	38.1 ± 12.2	
Min-Max	18-89	
Gender		
Male	383	52.8
Female	343	47.2
Education level		
Illiterate	126	17.4
Completed high school	201	27.7
Diploma or higher	399	54.9
Current job		
Do not work	287	39.6
Healthcare work	147	20.2

Governmental work	139	19.1
Private work	153	21.1
Marital status		
Married	425	58.5
Single	190	26.2
Other	109	15.3
Nationality		
Jordanian	649	89.4
Not Jordanian	77	10.6
Place of residence		
In Amman	430	59.2
Out of Amman	296	40.8
Monthly income (Jordanian dinars)		
Less than 260	159	21.9
From 260 to 400	172	23.7
More than 400	395	54.4

SD, Standard Deviation

Table 2. Use of primary health care facilities before the patient's Emergency Department visit (N=726).

Item	**N**	**%**
When did this problem start?		
Today	336	46.3
Less than a week ago	158	21.8

More than a week ago	78	10.7
It is a chronic/long-term condition	154	21.2
Do you have a primary care doctor or other health provider?		
Yes	231	31.8
No	495	68.2
Did you try to call your primary care doctor before coming to the ER?		
Yes	**230**	31.7
No	496	68.3
If yes – what did the office say?		
No appointments	44	6.1
Too sick need to go to ER	85	11.7
Not a patient anymore	51	7.0
Need further testing that the doctor's office can't do	48	6.6
Other	2	.3
What is your main reason for coming to the ED?		
Regular care here	243	33.5

Excellence in care	101	13.9
Insurance reasons	155	21.3
Other financial reasons	125	17.2
My doctor told me to come	27	3.7
Close to where I live/work	75	10.3

ED, Emergency Department; ER, Emergency Room

Table 3. Knowledge about the triage system and expected time for test results (N=726).

Knowledge about the triage system		
Item	**N**	**%**
Do you know what a teaching hospital is?		
Yes	424	58.4
No	302	41.6
Do you know if this hospital is a teaching hospital?		
Yes	402	55.4
No	324	44.6
Do you know why some patients are taken to a room before others even though they may not have waited as long?		
Yes	434	59.8
No	292	40.2
Do you think this is fair?		
Yes	534	73.6
No	192	26.4
Do you know what triage means?		
Yes	281	38.7
No	445	61.3
Expected time for test results		

Item	Mean	SD
Time expected to wait for lab	72.93	31.30
Time expected to wait for X-ray	38.75	31.32
Time expected to wait for CT	43.33	34.49
Time expected to wait for consult	42.04	25.33
Time expected to wait for admission	42.68	26.01

SD, Standard Deviation

Table 4. Relationship between use of primary health care facilities before Emergency Department visit patients' and sociodemographic variables (N=726).

Item	When did the problem started?		Do you have a primary care doctor or other health provider?		Did you try to call your primary care doctor before coming to the ER?		What is your main reason for coming to the ED?	
	Test	p	Test	p	Test	p	Test	p
Age	31.57	**0.001**	0.04	0.834	7.22	**0.007**	9.83	0.080
Gender	1.20	0.754	0.12	0.733	0.34	0.558	24.5	**0.001**
Education	17.09	**0.009**	1.16	0.559	2.46	0.293	10.7	0.379
Current job	14.92	0.093	0.88	0.829	6.42	0.093	56.6	**0.001**

Marital status	39.35	**0.001**	1.66	0.437	5.18	0.075	16.47	0.087
Nationality	2.96	0.398	1.36	0.244	1.30	0.255	10.8	**0.046**
Place of residence	7.522	0.057	0.087	0.768	0.60	0.438	31.62	**0.001**
Family income	11.06	0.087	1.46	0.481	5.84	**0.048**	5.84	0.0**44**

ED, Emergency Department; ER, Emergency Room

Table 5. Relationship between knowledge about triage system and sociodemographic variables.

Item	**Do you know what a teaching hospital is?**		**Do you know if this hospital is a teaching hospital?**		**Do you know why some patients are taken to a room before others even though they may not have waited as long?**		**Do you think this is fair?**		**Do you know what triage means?**	
	Test	**p**	**Test**	**p**	**Test**	**p**	**Test**	**p**	**Test**	**p**
Age	1.40	0.238	0.68	0.408	0.21	0.647	1.98	0.160	0.74	0.391
Gender	2.42	0.120	1.07	0.300	0.38	0.540	0.21	0.648	1.99	0.158
Education	11.9	0.**003**	16.5	0.**001**	17.9	**0.001**	6.90	**0.032**	15.6	**0.000**
Current job	25.2	0.**001**	22.9	**0.001**	18.46	0.**001**	13.4	**0.004**	14.9	**0.002**
Marital status	0.76	0.685	0.194	0.908	1.99	0.369	2.98	0.223	7.26	**0.027**

Nationality	7.20	**0.007**	9.39	**0.002**	10.3	**0.001**	20.7	**0.001**	7.15	0.**008**
Place of residence	0.03	0.863	1.51	0.219	1.50	0.22	0.541	0.464	0.75	0.388
Family income	15.9	0.**001**	9.20	**0.010**	1.49	4.58	0.10	0.476	1.95	0.377

Table 6. The significant relationship between patients' sociodemographic variables and time expected to wait (N=726).

Variable	**Time expected to wait lab**		**Time expected to wait x-ray**		**Time expected to wait CT**		**Time expected to wait Consult**		**Time expected to wait admission**	
	Test	p	Test	p	Test	p	Test	p	Test	p
Age	0.67	0.662	1.16	0.406	0.76	0.603	2.55	0.072	2.01	0.154
Gender	-2.55	**0.010**	1.79	**0.027**	2.54	**0.009**	2.15	**0.025**	-.45	0.431
Education	0.910	0.403	1.04	0.356	5.98	**0.003**	5.60	**0.004**	2.60	0.075
Current job	0.09	0.968	1.57	0.194	1.17	0.322	3.16	**0.024**	2.64	**0.049**
Marital status	1.63	0.197	0.31	0.736	0.62	0.540	1.60	0.204	3.41	**0.033**
Nationality	0.18	0.743	-0.38	0.296	-1.05	0.363	0.49	0.192	0.30	0.630
Place of residence	-3.33	0.405	1.08	**0.001**	4.25	**0.001**	3.09	**0.001**	1.22	**0.001**
Family income	0.48	0.619	0.85	0.430	1.16	0.315	1.08	0.341	0.10	0.902

Submitted: 6 April 2024

Accepted: 11 July 2024

Published: 23 July 2024