ORIGINAL ARTICLE **DOI: XXX**

How does Jordanian patients' satisfaction with emergency nursing care associated with their knowledge of the triage system and expected time to wait?

Mohammad M. Alnaeem[1], Asma Islaih[1], Mohammad A. Abu Sabra[2]*, Manar Bani-Hani[1]

1. School of Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan.
2. School of Nursing, University of Jordan-Aqaba Campus, Aqaba – Ninth Residential Area, Jordan.

***Corresponding author:** Mohammad A. Abu Sabra; **Email:** mohammad_abusabra@yahoo.com

Published online: 2025-09-25

Abstract: **Objective:** Emergency departments (EDs) are critical to healthcare systems, yet in Jordan, overcrowding and resource limitations challenge care quality. This study assessed how Jordanian patient satisfaction with nursing care at EDs related to their understanding of triage systems and wait times.
Methods: A prospective cross-sectional design was used. Data were collected from largest two healthcare hospitals in Jordan which utilizing Canadian triage system. A convenience sampling method was utilized. All adult patients (≥18 years) were included. However, patient's triaged at level 1 (resuscitation) or 2 (emergent) based on Canadian triage system, pediatric patients, and/or those with documented history of psychiatric illness were excluded. Valid and reliable tools were used.
Results: The mean age of patients was 37.6 years (SD=11.4), with a mean satisfaction score of 15.79/20 (SD=3.22), reflecting high satisfaction. Most patients (61.3%) were unaware of triage processes; however, their satisfaction with nursing care was related with triage understanding (P<0.05). Younger patients (t=2.045, P<0.05), Jordanian nationals (t=1.817, P<0.05), unmarried individuals (F=3.32, P<0.05), and government-sector workers (F=3.42, P< 0.05) reported significantly higher satisfaction than others.
Conclusion: Enhancing patient satisfaction in EDs relies on optimizing nursing care, particularly through staff training in triage systems and patient education about triage processes. Implementing standardized protocols, along with accessible educational materials for patients while they are in the waiting room, is critical to addressing care gaps and ensuring sustainable improvements.

Keywords: Emergency Department; Knowledge; Nursing Care; Patients' Satisfaction; Triage System; Wait Time

Cite this article as: M. Alnaeem M, Islaih A, A. Abu Sabra M, Bani-Hani M. How does Jordanian patients' satisfaction with emergency nursing care associated with their knowledge of the triage system and expected time to wait? Front Emerg Med.

1. Introduction

Emergency departments (EDs) are essential in global healthcare systems, where timely medical intervention can mean the difference between life and death (1,2). In Jordan, EDs face significant challenges, including overcrowding, resource limitations, and increasing patient demand, which strain the quality of care and patient outcomes (3-5). Central to addressing these challenges is the implementation of triage systems, which prioritize patients based on the urgency of their conditions to optimize resource allocation and reduce wait times for the most critical cases (6-8). However, the effectiveness of triage systems depends not only on clinical protocols but also on patients' understanding of the process and their expectations regarding care delivery (5,9-12).

Patient satisfaction with nursing care is a key indicator of healthcare quality and the most crucial factor in determining overall satisfaction with hospital care (13-15). Satisfaction influences patients' trust in providers, adherence to treatment plans, and willingness to seek care in the future. While factors such as communication, empathy, and wait times are well-documented contributors to satisfaction (16-18), the role of patients' knowledge about the triage system and their awareness of expected wait times remains underexplored, particularly in low- and middle-income settings like Jordan (5,9,19). Misunderstandings about triage protocols may lead to frustration, perceived neglect, or dissatisfaction, especially when wait times exceed patient expectations (10,20-21). In Jordan, where public awareness of triage systems is limited and ED overcrowding is common, such gaps in knowledge could exacerbate tensions between patients and healthcare providers (22-25).

Existing studies in high-income countries suggest that patient education on triage processes can mitigate dissatisfaction, even during prolonged waits (26-29). However, cultural, infrastructural, and socioeconomic differences limit the generalizability of these findings to contexts like Jordan. Furthermore, few studies in the Middle East have examined how patients' comprehension of triage and wait time expecta-

tions intersects with their satisfaction, leaving a critical gap in evidence to guide policy and practice (19,30,31). Focusing on patient satisfaction can enhance the patient-provider relationship, reducing patient anxiety and distress, and contributing to better health outcomes and increased trust in the healthcare system (15,32,33). Shifting to Jordanian EDs, patient satisfaction could be aimed at a more patient-centered approach, ultimately improving the overall quality of emergency healthcare services and the patient experience. However, there are few Jordanian studies have discussed the level of patient satisfaction with nursing care at EDs, and its correlates to patients' knowledge about triage systems and waiting times, thus, our study aimed to assess patients' satisfaction levels, their understanding of the triage system and expected waiting times for nursing care at EDs, as well as the relationship between their satisfaction and sociodemographic variables.

2. Methods

2.1. Study design

A prospective cross-sectional design was used.
Data were collected from the two largest healthcare hospitals in Jordan, where the Canadian triage system was utilized. These settings provide ED services for most people (64%) with different medical and surgical conditions. The bed capacity of these centers ranges from 50 -160 in EDs.

2.2. Sampling

A convenience sampling method was utilized. G-power software for t-test statistics was used to estimate the required sample size. Based on the following parameters: effect size (0.3), alpha (0.05), and power (0.80), two-tailed, the required sample was 352. All adult patients (≥18 years) were included. The exclusion criteria patients triaged at level 1 (resuscitation) or 2 (emergent) based on the Canadian triage system, pediatric patients, and/or those with a documented history of psychiatric illness.

2.3. Measures

A survey including three parts: the socio-demographic section, the patient's satisfaction survey section, and the knowledge about triage system and expected time for nursing care at the ED section. Socio-demographic survey includes age, gender, education level, current job, marital status, residence, nationality, and monthly income. The second survey was emergency nursing-care patient satisfaction scale (ENPSS) which measure patient's satisfaction. ENPSS is a valid and reliable tool with a Cronbach's alpha of 0.81–0.89 (34). This tool consists of 21 items presented in four subscales: 1) the "Explain and Response" subscale which includes 7 items to measure the patient's confidence in the ER's physician and includes nurse-patient communication and the provision of information; 2) "Hospitality" subscale which includes 6-items reflected the satisfaction with the response of the ER's physician and also includes elements such as courtesy and personal appearance; 3) "Teamwork" which include 3-items reflected the intensity of distress at the time of the ER visit; and 4) "Symptom management" subscale which include 4-items to assess the satisfaction with the outcome of treatment in the ER. The last question was about overall satisfaction with nursing care (1 item). The respondents rated their level of agreement using a 6-point Likert (0= "not applicable", 1= "strongly disagree", 2= "slightly disagree", 3= "neutral", 4= "slightly agree", and 5= "strongly agree"). The subscale scores are calculated by summing the raw scores. By summing the Explain and Response subscale scores, the total score is 35%; in the hospitality domain, the total score is 30%; in the teamwork domain, the total score is 15%; in the symptom management domain, the total score is 20%. The mean for each domain is measured as divided the total score for that domain on the number of items in the same domain. Higher ENPSS score reflects better overall satisfaction with emergency nursing care.
The third part is concerned with the discounted cash flow interview (DCF) survey that was developed by Alhadban (35) and translated into Arabic (19) to assess the patient's awareness of the quality of nursing care in hospitals. To achieve the study purpose, two subscales were used; 1) knowledge of the emergency triage system (5-items); two questions open-ended and three multiple-choice), and 2) the expected time for test results to be taken in the EDs. This tool was valid and reliable, with a Cronbach's alpha of 0.77-0.83 (19,35).

2.4. Ethical considerations

Ethical approval was obtained from the Institutional Review Boards (IRBs) of Al-Zaytoonah University of Jordan [IRB number: 2024-2023/133/03] and the participating hospitals [IRB number: MOH/REC/2023/480].

2.5. Data collection

Following approval, the researcher coordinated with ED administrators to outline the study's objectives and procedures. Participants were recruited from the triage waiting area during their ED visit. Eligible patients received a detailed explanation of the study's purpose, including its ethical safeguards (such as confidentiality and voluntary participation), and their rights as participants. Those who agreed to participate provided written informed consent and completed the questionnaires while awaiting triage. Completed questionnaires were sealed in envelopes accessible only to the researcher and stored securely in a locked cabinet within the researcher's office. Data collection occurred between July 2023 and January 2024.

2.6. Statistical analysis

The study utilized SPSS version 26 software for data analysis. Descriptive and inferential statistics were used. Multivariate analysis was performed using an independent t-test to examine the difference between dichotomous variables

Table 1 Characteristics of the sample (N=726)

Variable	N	%
Age		
Mean ± SD	37.6 ± 11.4	
Min-max	18-89	
Gender		
Male	337	51.9
Female	312	48.1
Education level		
Illiterate	113	17.4
Completed high school	186	28.7
Diploma or higher	350	53.9
Current job		
Don't work	268	41.3
Healthcare sector	137	21.1
Governmental sector	113	17.4
Private sector	131	20.2
Marital status		
Married	372	57.3
Single	173	26.7
Others	104	16.0
Nationality		
Jordanian	579	89.2
None Jordanian	70	10.8
Place of residence		
In Amman	391	60.2
Out Amman	258	39.8
Monthly income (Jordanian dinars)		
Less than 260	146	22.5
From 260 to 400	151	23.3
More than 400	352	54.2

SD: Standard deviation; N: Number; %: Percentage

(e.g., age) and patients' satisfaction, while ANOVA was used when the variables had more than two groups (e.g., marital status). Pearson correlation test was used to examine relationships between satisfaction and continuous variables (e.g., age). The statistical significance was determined at a P-value of <0.05.

3. Results

3.1. Response rate

Out of 850 distributed questionnaires, 124 questionnaires were excluded (due to incomplete responses), resulting in 726 patients (response rate of 85.4%) being included in the final analysis.

3.2. Demogphic characteristics

The study included 650 patients with a mean age of 37.6 years (SD=11.4), ranging from 18 to 89 years. Most participants were male (51.9%, n=337) and married (57.3%, n=372). Over half (53.9%) had completed post-secondary education, and 60.4% were employed, though 41.3% reported being unemployed (Table 1). Geographically, 60.2% of the respondents resided within Amman, and 54.2% reported a monthly income exceeding 400 Jordanian dinars (Table 1).

3.3. Patients' satisfaction with nursing care at ED

The mean total satisfaction score was 15.79 out of 20 (SD=3.22), indicating high satisfaction (79% of the maximum score). Among the satisfaction subscales, the hospitality subscale (Mean=3.76; SD=0.93) and the teamwork subscale (Mean= 3.76; SD=0.93) were the highest. Whereas the lowest means for satisfaction was with explanation and symptoms management subscales, with a mean of 3.62 (SD=1.05), 3.66 (SD=0.89), respectively. The overall quality subscale (mean=3.30, SD=1.29) was excluded from "lowest" rankings because it is a single-item measure, which is less reliable than multi-item scales.

3.4. Awareness of triage system and expected time for diagnostic tests

A majority of patients (61.3%) reported being unaware of how the triage system functions. Despite this lack of understanding, 73.6% perceived the system as fair for all patients, and 59.8% recognized why some individuals were prioritized for treatment ahead of others, even if their own wait time was longer. Regarding expected wait times for test results, significant variability was observed: laboratory tests

Table 2 Knowledge about the triage system and expected time for test results (N=649)

Knowledge about the triage system			**Expected time for test results**		
Item	**N**	**%**	**Item**	**Mean**	**SD**
Do you know what a teaching hospital is?			Time expected to wait for the lab	72.9	31.3
Yes	424	58.4			
No	302	41.6	Time expected to wait X-ray	38.8	31.3
Do you know if this hospital is a teaching hospital?					
Yes	402	55.4	Time expected to wait for CT	43.3	34.5
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?			Time expected to wait for Consult	42.1	25.3
Yes	434	59.8	Time expected to wait for admission	42.7	26.1
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			

SD: Standard deviation; N: Number; %: Percentage

Table 3 Relationship between patients' satisfaction with their knowledge and expected time to wait (N=649)

Variable	**Mean**	**SD**	**Statistics**
Knowledge about the triage system			
Do you know what a teaching hospital is?			
Yes	81.1	17.7	2.971[1]**
No	77.2	16.8	
Do you know if this hospital is a teaching hospital?			
Yes	81.9	17.5	4.274[1]**
No	76.4	16.8	
Do you know why some patients are taken to a room before others, even though they may not have waited as long?			
Yes	81.2	17.4	3.207[1]**
No	76.9	17.2	
Do you think this is fair?			
Yes	80.7	16.9	3.091[1]**
No	76.2	18.4	
Do you know what triage means?			
Yes	80.6	18.1	1.385[1]**
No	78.8	16.9	
Expected time for test results			
Time expected to wait for the lab	72.9	31.1	.071[2]*
Time expected to wait X-ray	38.7	31.2	-.039[2]
Time expected to wait for CT	43.3	43.5	-.013 [2]
Time expected to wait for Consult	42.1	25.3	-.177[2]**
Time expected to wait for admission	42.7	26.1	-.058[2]

[1]: Independent t-test; [2]: Pearson correlation test; *: P<0.05; **: P< 0.01; SD: Standard deviation; N: Number; %: Percentage

had the longest anticipated wait (mean=72.9 minutes, SD = 31.3; range: 6–300 minutes), while X-ray results were expected fastest (mean=31.3 minutes, SD=38.8; range: 2–400 minutes). Wait times for CT scans, consultation reports, and admissions were reported as comparable (Table 2). These findings highlight a discrepancy between patient awareness of triage processes and their trust in its fairness, alongside widely varying expectations for diagnostic delays.

3.5. Relationship between patients' satisfaction with their knowledge and expected time to wait

Patients' satisfaction with nursing care showed significant positive associations with their understanding of the triage system. Specifically, satisfaction was higher among those

who knew how triage worked (t=1.385, P<0.01), recognized that prioritization was based on clinical need (t=3.207, P<0.01), and perceived this prioritization as fair (t=3.091, P<0.01) (Table 3). Additionally, satisfaction levels were influenced by expectations around wait times: patients who anticipated longer delays for laboratory test results (moderate positive correlation (r= 0.71, P<0.05) and shorter waits for consultation reports (moderate negative correlation (r= -0.177, P<0.01) reported higher satisfaction. These findings suggest that transparency in triage processes and alignment between expected and actual wait times critically shape patient satisfaction in ED settings.

3.6. Correlate patients' satisfaction with their demographics

Patient satisfaction with emergency nursing care differed significantly across sociodemographic groups. Younger patients (under 36 years) reported higher satisfaction (M=80.8, SD=16.9) compared to older patients (>36 years; M= 78.2, SD=17.7; t=2.045, P<0.05). Jordanian nationals were also more satisfied (M=79.9, SD=17.2) than non-Jordanians (M=76.1, SD=18.6; t=1.817, P<0.05). Marital status and employment type further influenced satisfaction. Unmarried patients scored significantly higher than other groups (F=3.32, P<0.05), and post-hoc tests revealed government employees reported greater satisfaction than unemployed individuals (mean difference=5.21, SE=1.79, P=0.022) and healthcare workers (mean difference=5.66, SE=2.05, P=0.035). Employment type itself showed significant variation (F=3.42, P<0.05). No other sociodemographic variables (e.g., gender, income) were found to be significantly predictive of satisfaction (P>0.05). These findings highlighted age, nationality, marital status, and employment status as key factors shaping perceptions of emergency nursing care quality from the patient's perspective.

4. Discussion

Our study provides crucial insights into patient satisfaction with emergency nursing care in Jordan, a healthcare setting characterized by high ED utilization, sociodemographic disparities, and evolving patient expectations. The findings highlighted a complex interplay of systemic, cultural, and perceptual factors shaping patient experiences, with significant implications for policy and clinical practice. Notably, few studies in Jordan have examined nursing care quality from the patient's perspective. Further research is needed to assess patient satisfaction, as such insights help nurses enhance care delivery. This study is only the third in Jordan to explore patient satisfaction and experiences with nursing care, highlighting key factors that contribute to their satisfaction.

Most patients in our study perceived a high quality of nursing care in Jordanian EDs, aligning with previous research (36-38). Most hospitals in Jordan were accredited, which could contribute to improving patient perceptions, particularly in government hospitals (39,40). Despite high ED occupancy rates, satisfaction remains strong, possibly reflecting a cultural emphasis on access to care over expediency (41,42). However, this may also indicate patient resignation in the absence of alternatives, where systemic realities shape expectations (43). Staff dedication and resilience may play a more significant role in perceived quality than operational efficiency (44,45), emphasizing the need for policymakers to address both perceptions and the actual quality of care.

In our study, the patients with regular primary care providers reported higher satisfaction. Congruent with previous studies that reported the use of primary healthcare facilities before visiting the ED (46,47). This suggests that strengthening primary care services and encouraging their utilization can enhance patient satisfaction with emergency nursing care.

A significant positive correlation was found between patients' knowledge of the triage system and their satisfaction with nursing care. Our result is congruent with previous studies that concluded patients who understood triage protocols reported greater satisfaction, whereas those unfamiliar with the system often perceived priority-based care as arbitrary or unfair (9,10,19-21,48). Prolonged waiting times for consultations and lab results significantly impacted satisfaction levels, aligning with previous research (23,49). To improve both actual wait times and patient perceptions, hospitals should implement culturally adapted educational strategies, such as visual triage guides in Arabic or brief explanatory videos in waiting areas. These interventions align with Jordan's national strategy for health sector development, which prioritizes patient education as a key component of healthcare quality (50).

Government employees reported higher satisfaction with nursing care compared to unemployed individuals, likely due to the stability of their healthcare benefits, including comprehensive insurance coverage and easier access to medical services (51,52). In contrast, unemployed individuals may face financial barriers, uncertainty about healthcare costs, and delays in receiving care, all of which can negatively impact their satisfaction levels (53,54). Furthermore, younger patients (<36 years) expressed higher satisfaction, reflecting generational and cultural differences in ED experiences. Younger individuals tend to be more adaptable to the fast-paced, technology-driven environment of EDs and may have lower expectations regarding wait times and service delivery (55,56). Additionally, younger patients often require less complex medical care, leading to quicker treatment and a more streamlined ED experience (57). Cultural factors may also play a role, as younger generations in Jordan may have greater exposure to modern healthcare approaches and digital health resources, making them more accepting of current ED practices compared to older patients, who may prioritize continuity of care and direct physician interactions (58-60).

While our study found that unmarried patients reported higher satisfaction with nursing care in Jordanian emergency departments, a review of existing literature reveals a limited

body of research specifically addressing the impact of marital status on patient satisfaction within this context. For instance, a study assessing patient satisfaction with nursing care in Jordan did not find a significant relationship between marital status and satisfaction levels (61). While spouses often provide emotional support during healthcare encounters, unmarried patients may experience greater autonomy in decision-making or less familial scrutiny (62). However, could be the cultural stigma toward divorced or widowed individuals in Jordan may also play a role in patient perceptions. These findings underscore the need for a nuanced approach to family-centered care models, striking a balance between patient autonomy and supportive engagement. Enhancing communication, fostering positive nurse-patient relationships, and actively monitoring satisfaction levels can further improve ED experiences (63).

Additionally, unmarried individuals in Amman reported higher satisfaction levels, while higher education levels were associated with lower satisfaction. Urban residents (those who lived in Amman, the capital of Jordan) reported higher satisfaction than rural patients, reinforcing Jordan's urban-rural healthcare divide (5,64). Centralized EDs in Amman benefit from specialized resources and expert staffing, contributing to perceptions of competence and efficiency (65-67). However, this centralization exacerbates rural disparities, where patients face longer travel times and fragmented care pathways (68-70). While urban patients tolerate overcrowding in exchange for specialized care, rural populations experience both access barriers and lower confidence in local facilities (71-73). Addressing these disparities requires decentralized investments, including regional ED upgrades and the expansion of telehealth services, to ensure equitable access to high-quality care. Furthermore, the inverse relationship between higher education levels and lower satisfaction aligns with global trends, where educated patients often expect more transparency and shared decision-making, which may not always align with the high-pressure dynamics of EDs (74-77). Tailored communication strategies, such as structured debriefs for educated patients, could help bridge the gap between clinical urgency and participatory care (77,78).

4.1. Implications for practice, research, policy and education

The study has emphasized the significance of understanding patient satisfaction with nursing care in the ED. One of the main roles of ED nurses should be to enhance patients' understanding of nursing care for improved treatment quality and reduced wait times. Strategies such as task redistribution, clear protocol implementation, and effective teamwork are crucial for maintaining high-quality care standards and fostering patients' high level of understanding to their rights and satisfaction. Patients' access to timely and suitable medical care significantly influences their understanding, impacting satisfaction, nursing care provision, communication, and feedback. Enhancing their satisfaction should include both clinical and non-clinical tasks, promoting open communication and teamwork. Nursing administrators should also focus on patient education, ensure sufficient resources, and standardized protocols. Policymakers should incorporate guidelines and regulations to emphasize the importance of effective communication and technology in triage processes. By fostering an environment of teamwork, transparent communication, and optimal resource allocation, healthcare organizations can improve patient experiences and outcomes. This collaboration between nursing administrators and policymakers can lead to improved patient satisfaction and safety in ED nursing care. Future research is needed to explore the experience of patients with nursing care in ED and their recommendations to improve their satisfaction with nursing care. These findings have practical implications for healthcare organizations, policymakers, and researchers. Healthcare practitioners can use the findings to create interventions to mitigate the impact of nursing care on patients' satisfaction, while policymakers can use them to inform policies and regulations. Researchers can use these findings to identify gaps in nursing care provision and propose strategies to improve patient satisfaction.

4.2. Recommendations

The study makes several recommendations to improve patient satisfaction with nursing care in EDs. Firstly, hospitals should prioritize having adequate staffing levels to reduce waiting times and errors. Secondly, nursing staff should receive continuous education and training to enhance communication and teamwork. Thirdly, integrating technology and automation can reduce the burden on patients seeking nursing care, allowing staff to focus on direct patient care. Fourthly, a supportive work environment for nursing staff should be a priority, including recognition programs, professional development opportunities, and open communication channels. Future research should focus on implementing interventions to mitigate the impact of inadequate nursing care knowledge on patient satisfaction. These interventions may include task delegation, process re-engineering, and leveraging technology and automation. Regular evaluations and feedback mechanisms are also essential to monitor the effectiveness of these interventions and enable necessary adjustments for continuous improvement.

5. Strengths and limitations

The study conducted a thorough analysis of the correlation between nursing care in the ED and patients' satisfaction. The research identified unique factors that affect patients' satisfaction, including their educational background, past healthcare experiences, and socioeconomic status. These findings provide valuable insights into the potential obstacles and opportunities for effective implementation of nursing care in the ED. The study recommends that healthcare professionals undergo continuous training and education to improve patient understanding and acceptance of nursing

care in the ED. However, the study has some limitations. Its focus on Jordanian government hospitals restricts its generalizability, and including other healthcare sectors is crucial to reflecting its generalizability. Furthermore, the cross-sectional design limits the ability to draw causal inferences, and longitudinal studies are necessary to understand the direction of causality.

6. Conclusion

The study has found that nursing care has a significant impact on various aspects of patient satisfaction. Therefore, healthcare providers should give priority to patient education in nursing care to improve overall satisfaction. Future research could explore specific elements within nursing care that significantly influence patient satisfaction, enabling targeted interventions and enhancements in ED care protocols. The study highlights the importance of raising patients' awareness of nursing care to improve patient satisfaction. The level of knowledge of patients attending the ED regarding the triage process was generally good. However, ED staff should ensure that attendees are provided with information on the urgency category assigned to them and the estimated waiting time, as well as information regarding possible delays. Information leaflets or short videos on ED operation and admission procedures can play a crucial role in educating patients in waiting rooms.

7. Declarations

7.1. Acknowledgement

The authors would like to thank all patients who agree to enroll in this study.

7.2. Authors' contribution

MAS, MA, AS designed the research study. MA, AS, MAS, MB performed the research. MA, AS, MB, MAS wrote the manuscript. All authors contributed to editorial changes in the manuscript also, read and approved the final manuscript.

7.3. Conflict of interest

None.

7.4. Funding

None.

7.5. Data availability statements

The datasets generated during the current study are available from the corresponding author on reasonable request.

References

1. SaxDanaR, Warton E Margaret, Mark Dustin G, Vinson David R, Kene Mamata V, Ballard Dustin W, et al. Evaluation of the emergency severity index in US emergency departments for the rate of mistriage. JAMA Network Open. 2023;6(3):233404.
2. JonesS.,Moulton C, Swift S, Molyneux P, Black S,Mason N, et al. Association between delays to patient admission from the emergency department and all-cause 30-day mortality. Emergency Medicine Journal. 2022;39(3):168-73.
3. Abusamra A, Rayan A.H,Obeidat R.F, Hamaideh S.H, Baqeas MH, ALBashtawy M, et al. The relationship between nursing care delivery models, emotional exhaustion, and quality of nursing care among Jordanian registered nurses. SAGE open nursing. 2022; 8:23779608221124292.
4. Al-GhabeeshS.H, Thabet A, Rayan A, Abu-Snieneh H.M. Qualitative study of challenges facing emergency departments nurses in Jordan. Heliyon.2023;9(3).
5. AlnaeemM.M, Islaih A, Hamaideh S.H,Nashwan A.J. Using primary healthcare facilities and patients' expectations about triage system: Patients' perspective from multisite Jordanian hospitals. International Emergency Nursing. 2024;75:101476.
6. Göransson M, Persson A.C, Abelsson A.Triage in primary healthcare. Nordic Journal of Nursing Research. 2020;40(4):213-20.
7. Wolf, L.A. Triaging the emergency department, not the patient: United States emergency nurses' experience of the triage process. Journal of emergency nursing. 2018;44(3):258-66.
8. Bazyar J, Farokhi M, Salari A, Khankeh H.R.The principles of triage in emergencies and disasters: a systematic review. Prehosp Disaster Med. 2020;35(3):305-13.
9. Alnaeem MM, Banihani SS, Islaih A, Al-Qudimat AR. Expectations of emergency patients regarding triage system knowledge upon arrival: an interpretive study. Ir J Med Sci. 2024;193(5):2545-52.
10. AlsulimaniLK. Public awareness of triage in emergency departments in Saudi Arabia in the era of COVID-19. Saudi J Emerg Med. 2022;3:120-29.
11. MeysmanJ, Morreel S,Lefevere E, Verhoeven V, Graeve D.D, Monsieurs K.G, et al. Triaging and referring in adjacent general and emergency departments (the TRIAGE-trial): a process evaluation of medical staff experiences in a nurse-led triage system. Int Emerg Nurs. 2022;63:101191.
12. Da'Costa A, Teke J, Origbo J.E, Osonuga A, Egbon E, Olawade D.B. AI-driven triage in emergency departments: a review of benefits, challenges, and future directions. In J Med Inform. 2025;197:105838.
13. Karaca, Z. Durna. Patient satisfaction with the quality of nursing care. Nursing open. 2019;6(2):535-45.
14. SharmaS.K,P.K. Kamra. Patient satisfaction with nursing care in public and private hospitals. Nursing & Midwifery Research Journal. 2013;9:130-41.
15. Kalaja R. Determinants of patient satisfaction with health care: a literature review. European Journal of Natural Sci-

ences and Medicine. 2023;6(1):43-54.
16. AbidovaA, Da Silva PA, Moreira S. Predictors of patient satisfaction and the perceived quality of healthcare in an emergency department in Portugal. Wes J Emerg Med. 2020;21:391.
17. Milton J, David Åberg N, Erichsen Andersson A, Gillespie BM, Oxelmark L. Patients' perspectives on care, communication, and teamwork in the emergency department. Int Emerg Nurs. 2023;66:101238.
18. Degabriel D, Petrino R, Frau ED, Uccella L. Factors influencing patients' experience of communication with the medical team of the emergency department. Intern Emerg Med. 2023;18:2045-51.
19. Alhabdan N, Alhusain F, Alharbi A, Alsadhan M, Hakami M, Masuadi E. 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. Int J Emerg Med. 2019;12:1-8.
20. 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 Emerg Med. 2020;20:1-19.
21. Phiri M, Heyns T, Coetzee I. Patients' experiences of triage in an emergency department: a phenomenographic study. Applied nursing research. 2020;54:151271.
22. AlShatarat M, Rayan A, Eshah NF, Baqeas MH, Jaber MJ, ALBashtawy M. Triage knowledge and practice and associated factors among emergency department nurses. SAGE Open Nursing. 2022;8:23779608221130588.
23. Malak MZ, Mohammad Al-Faqeer N, Bashir Yehia D. Knowledge, skills, and practices of triage among emergency nurses in Jordan. Intern Emerg Nurs. 2022;65:101219.
24. Saleh, Z.T, Aslanoglu A, Al-Dgheim R, Sawalha M.A, Elshatarat R.A, Al-Akash H. Y, et al. Effectiveness of triage professionals' knowledge and experience on their ability in early diagnosis and consequent treatment of acute coronary syndrome: a literature review study. Research Journal of Pharmacy and Technology. 2024;17(8):4075-82.
25. Shawah'en, A.A,Alakash H, Massadeh R,Shajrawi A. Triage knowledge level and skills among emergency nurses in Jordan: a quasi-experimental study. journal of the Community Practitioners' & Health Visitors' Association. 2024;21:83-101.
26. Friedel AL, Siegel S, Kirstein CF, Gerigk M, Bingel U, Diehl A, Steidle O, Haupeltshofer S, et al. Measuring patient experience and patient satisfaction—how are we doing it and why does it matter? A comparison of European and US American approaches. Healthcare (Basel). 2023;11:797.
27. Elkholi A, Althobiti H, Al Nofeye J, Hasan M, Ibrahim A. NO WAIT: new organised well-adapted immediate triage: a lean improvement project. BMJ Open Quality. 2021;10(1):001179.
28. Sousa M., Cunha MN, Rodrigues J. Patients' perceptions resulting from the contact with emergency departments using the Manchester triage system protocol. Universal Journal of Public Health. 2024;12:471-80.
29. Rathnayake D, Clarke M. The effectiveness of different patient referral methods on waiting times for adults needing elective surgery-systematic review. BMC Health Serv Res. 2020;155.
30. Alanazi S. An exploration of emergency staff perceptions and experiences of teamwork in an emergency department in the Kingdom of Saudi Arabia [dissertation]. Cardiff, UK: Cardiff University; 2024.
31. Alrajhi KN, Aljerian NA, Alazaz RN, Araier LB, Alqahtani LS, Almushawwah SO. Effect of waiting time estimates on patients satisfaction in the emergency department in a tertiary care center. Saudi Medical Journal. 2020;41(8):883.
32. FerreiraD.C,Vieira I,Pedro M.I, Caldas Paulo, Varela M. Patient satisfaction with healthcare services and the techniques used for its assessment: a systematic literature review and a bibliometric analysis. Healthcare. 2023;11:639.
33. Alrubaiee L, Alkaa'ida F. The mediating effect of patient satisfaction in the patients' perceptions of healthcare quality-patient trust relationship. International Journal of Marketing Studies. 2011;3(1):103.
34. Haruna J, Minamoto N, Shiromaru M, Taguchi Y, Makino N, Kanda N, et al. Emergency nursing-care patient satisfaction scale (Enpss): development and validation of a patient satisfaction scale with emergency room nursing. Healthcare (Basel). 2022;10(3):518.
35. Seibert T, Veazey K, Leccese P, Druck J. What do patients want? survey of patient desires for education in an urban university hospital. West J Emerg Med. 2014;15(7):764.
36. Suleiman K, Hijazi Z, Al Kalaldeh M, Abu Sharour L. Quality of nursing work life and related factors among emergency nurses in Jordan. J Occup Health. 2019;61(5):398-406.
37. Al-Saidat, HM, Malak M.Z, Alnawafleh A.H. Patients' perception of quality nursing care and services in emergency department in Jordan. Hosp Top. 2025;103(1):10-9.
38. 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 Pract. 2021;RTNP-D-21-00037.
39. Algunmeeyn A, Mrayyan MT. Understanding the factors influencing the implementation of accreditation in Jordanian Hospitals: the nurses' view. BMJ Open Quality. 2022;11(3):e001912.
40. 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 Pract. 2021;30:RTNP-D-21-00037.

41. Rasouli HR, Esfahani AA, Nobakht M, et al. Outcomes of crowding in emergency departments; a systematic review. Arch Acad Emerg Med. 2019;7(1):e52.eCollection 2019.
42. Shin DW, Cho J, Roter DL, Kim SY, Yang HK, Park K, et al. Attitudes toward family involvement in cancer treatment decision making: the perspectives of patients, family caregivers, and their oncologists. Psychooncology. 2017;26(6):770-8.
43. Sonis JD, Aaronson EL, Lee RY, Philpotts LL, White BA. Emergency department patient experience: a systematic review of the literature. J Patient Exp. 2018;5(2):101-6.
44. Fazekas C, Zieser M, Hanfstingl B, Saretzki J, Kunschitz E, Zieser-Stelzhammer L, et al. Physician resilience and perceived quality of care among medical doctors with training in psychosomatic medicine during the COVID-19 pandemic: a quantitative and qualitative analysis. BMC Health Serv Res. 2024;24(1):249.
45. Sihvola SP, Kuosmanen LM, Mikkonen SJ, Kvist TA. Resilience, job satisfaction, intentions to leave nursing and quality of care among nurses during the COVID-19 pandemic–a questionnaire study. Gastroenterol Nurs. 2025;48(4):288-98.
46. Serrano N, Prince R, Fondow M, Kushner K. Does the primary care behavioral health model reduce emergency department visits? Health Serv Res. 2018;53(6):4529-42.
47. Budnitz DS, Shehab N, Lovegrove MC, Geller AI, Lind JN, Pollock DA. US emergency department visits attributed to medication harms, 2017-2019. JAMA. 2021;326(13):1299-309.
48. Özhanlı Y, Akyolcu N. Satisfaction of patients with triage and nursing practice in emergency departments. Florence Nightingale J Nurs. 2020;28(1):49-60.
49. Darraj A, Hudays A, Hazazi A, Hobani A, Alghamdi A. The association between emergency department overcrowding and delay in treatment: a systematic review. Healthcare (Basel). 2023;11(3):385.
50. Khader Y, Al Nsour M, Abu Khudair S, Saad R, Tarawneh MR, Lami F. Strengthening primary healthcare in Jordan for achieving universal health coverage: a need for family health team approach. Healthcare (Basel). 2023;11(22):2993.
51. Pratap P, Dickson A, Love M, Zanoni J, Donato C, Flynn MA, et al. Public health impacts of underemployment and unemployment in the United States: exploring perceptions, gaps and opportunities. Int J Environ Res Public Health. 2021;18(19):10021.
52. Manzoor F, Wei L, Hussain A, Asif M, Shah SIA. Patient satisfaction with health care services; an application of physician's behavior as a moderator. Int J Environ Res Public Health. 2019;16(18):3318.
53. Freyer DO D.R,Wilder Smith A,Wolfson JA,Barr RD. Making ends meet: financial issues from the perspectives of patients and their health-care team. Cancer in adolescents and young adults. 2016:667-85.
54. Wray CM, Khare M, Keyhani S. Access to care, cost of care, and satisfaction with care among adults with private and public health insurance in the US. JAMA Netw Open. 202;4(6):e2110275.
55. EssaianH.R. Commitment of nurses to quality of care and patient satisfaction: The role of generational differences. University of PhoenixProQuest Dissertations & Theses, 2018;10748224.
56. FitzpatrickR. Satisfaction with health care, in The experience of illness. London, UK: Routledge; 2022:154-76.
57. Lee SB, Oh JH, Park JH, Choi SP, Wee JH. Differences in youngest-old, middle-old, and oldest-old patients who visit the emergency department. Clin Exp Emerg Med. 2018;5(4):249-55.
58. Hadi Al MansourHH, Ali Alyami SM, Saleh Alyami HA, Bin Turki Al Kulayb HH, Hadi Al Klulayb MA, Nasser Al Idris FA, et al. Health assistants and technology: navigating digital health tools for better patient engagement with nursing in emergency department. Journal of International Crisis & Risk Communication Research (JICRCR). 2024;7:773-87.
59. Samal L, Fu HN, Camara DS, Wang J, Bierman AS, Dorr DA. Health information technology to improve care for people with multiple chronic conditions. Health Serv Res. 2021;56:1006-36.
60. Ladds E, Khan M, Moore L, Kalin A, Greenhalgh T. The impact of remote care approaches on continuity in primary care: a mixed-studies systematic review. Br J Gen Pract. 2023;73(730):e374-e83.
61. Alhusban MA, Abualrub RF. Patient satisfaction with nursing care in Jordan. J Nurs Manag. 2009;17(6):749-58.
62. Gray TF, Nolan MT, Clayman ML, Wenzel JA. The decision partner in healthcare decision-making: a concept analysis. Int J Nurs Stud. 2019;92:79-89.
63. Ibrahim, M.S. Examining patients' satisfaction in Jordanian emergency departments through business process improvement implementation. Eastern Michigan University, Master's Theses and Doctoral Dissertations. 2019;962.
64. Smadi A, Abugabah A. The influence of sociodemographic characteristics and hospital type on patient satisfaction: an online survey . British Journal of Healthcare Management. 2025;31(1):1-11.
65. Abu-RummanA, Al-Mhasnah A. M Al-Zyout T. Direct and indirect effects of TQM on the patients' satisfaction and loyalty in the Jordanian health care sector. Management Science Letters. 2021;11(2):493-502.
66. Khader YS, Bawadi H, Khasawneh W, Alyahya MS, Shattnawi K, Al-Sheyab NA, et al. Sociocultural, political, and health system-related determinants of perinatal deaths in Jordan from the perspectives of health care providers: a qualitative study. J Matern Fetal Neonatal Med. 2022;35(14):2765-74. doi: 10.1080/14767058.2020
67. Jordan Ministry of Health (JMOH). Primary Health Care Services Report. Amman, Jordan: JMOH; 2022. Accessed

September 25, 2025..
68. Al Barmawi M, Al Hadid LA, Al Kharabshah M. Reasons for delay in seeking healthcare among women with acute coronary syndrome from rural and urban areas in Jordan. Health Care Women Int. 202243(1-3):293-308.
69. ebbeh RA ,Dardas L, Alnaee MM, Ghatasheh A,Ibdah R, Yaseen K. The potential of telemedicine in rural healthcare delivery in Jordan: a scoping review. Pal Med Pharm J. 2024.
70. Obeidat B, Alourd S. Healthcare equity in focus: bridging gaps through a spatial analysis of healthcare facilities in Irbid, Jordan. Int J Equity Health. 2024;23(1):52.
71. Greenwood-Ericksen MB, Kocher K. Trends in emergency department use by rural and urban populations in the United States. JAMA network open, 2019;2(4):e191919.
72. Farcas AM, Joiner AP, Rudman JS, Ramesh K, Torres G, Crowe RP. Disparities in emergency medical services care delivery in the United States: a scoping review. Prehosp Emerg Care. 2023;27(8):1058-71.
73. Wang ES. Perceptions as a barrier to emergency medical services utilization among Syrian refugees in Jordan [ISP project]. Washington, DC: SIT Study Abroad/George Washington University; Spring 2018. Accessed September 25, 2025.
74. Resnicow K, Catley D, Goggin K, Hawley S, Williams GC. Shared decision making in health care: theoretical perspectives for why it works and for whom. Med Decis Making. 2022;42(6):755-64.
75. AmporfroD.A, Boah M, Yingqi S, Cheteu Wabo TM, Zhao M, Ngo Nkondjock VR, et al. Patients satisfaction with healthcare delivery in Ghana. BMC Health Services Research. 2021;21:722.
76. Adhikari M, Paudel NR, Mishra SR, Shrestha A, Upadhyaya DP. Patient satisfaction and its socio-demographic correlates in a tertiary public hospital in Nepal: a cross-sectional study. BMC health services research. 2021;21:1-10.
77. Jansen T, Rademakers J, Waverijn G, Verheij R, Osborne R, Heijmans M. The role of health literacy in explaining the association between educational attainment and the use of out-of-hours primary care services in chronically ill people: a survey study. BMC health services research. 2018;18:1-13.
78. Ricci L, Villegente J, Loyal D, Ayav C, Kivits J, Rat AC. Tailored patient therapeutic educational interventions: a patient-centred communication model. Health Expectations. 2022;25(1):276-89.