ระยะเวลารอคอยที่คาดหมายและระยะเวลารอคอยจริงของผู้ป่วยวัยผู้ใหญ่ตอนต้นในห้องฉุกเฉิน โรงพยาบาลมหาวิทยาลัย

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บทคัดย่อ

บทนำ

ภาวะความแออัดในห้องฉุกเฉินเป็นปัญหาที่เพิ่มมากขึ้น โดยเฉพาะจากผู้ป่วยที่ไม่ได้อยู่ในภาวะฉุกเฉิน ความพึงพอใจของผู้ป่วยมักได้รับอิทธิพลจากความคาดหวังเกี่ยวกับระยะเวลาการรอคอย

วัตถุประสงค์

การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างระยะเวลารอคอยที่คาดหมายกับระยะเวลารอคอยจริงในห้องฉุกเฉินของโรงพยาบาลตติยภูมิในกลุ่มผู้ป่วยวัยผู้ใหญ่ตอนต้นที่มาด้วยภาวะไม่ฉุกเฉิน

วิธีการศึกษา

เป็นการศึกษาเชิงพรรณนาแบบภาคตัดขวาง ดำเนินการในห้องฉุกเฉิน โรงพยาบาลศรีนครินทร์ ประเทศไทย กลุ่มตัวอย่างคือผู้ใหญ่ตอนต้นอายุ 18–35 ปี ที่มารับบริการระหว่างเวลา 17.00–22.00 น. จำนวน 42 ราย โดยตอบแบบสอบถามเกี่ยวกับข้อมูลประชากร ประสบการณ์การมารับบริการในห้องฉุกเฉิน ระยะเวลารอคอยที่รับรู้ และระยะเวลารอคอยที่คาดหมาย ระยะเวลารอคอยจริงตั้งแต่ลงทะเบียนจนถึงพบแพทย์ถูกรวบรวมจากระบบของโรงพยาบาล วิเคราะห์ความสัมพันธ์ระหว่างระยะเวลารอคอยที่คาดหมายและระยะเวลารอคอยจริง โดยจำแนกตามอายุ ระดับการศึกษา และปัจจัยอื่น ๆ

ผลการศึกษา

ในผู้เข้าร่วม 42 ราย มีอายุกลาง 22 ปี และเพศหญิงร้อยละ 57.1 ผู้ป่วยส่วนใหญ่ถูกจัดระดับการคัดกรอง (triage level) เป็นระดับ 3 (ร้อยละ 31) หรือ 4 (ร้อยละ 64) ระยะเวลารอคอยที่คาดหมายมีค่ากลาง 30 นาที ขณะที่ระยะเวลารอคอยจริงมีค่ากลาง 23 นาที ($p = 0.069$) ในกลุ่มอายุ 21–25 ปี ระยะเวลารอคอยจริง (14.5 นาที) สั้นกว่าที่คาดหมายไว้อย่างมีนัยสำคัญ (30 นาที, $p = 0.001$) ผู้เข้าร่วมที่มีวุฒิปริญญาตรีพบความแตกต่างระหว่างระยะเวลาคาดหมายและจริงอย่างมีนัยสำคัญเช่นกัน ($p = 0.044$) โดยรวมพบว่าร้อยละ 38 คาดหวังระยะเวลารอคอยสั้นกว่าที่ประสบจริง และไม่พบความแตกต่างระหว่างเพศ

สรุป

ระยะเวลารอคอยที่คาดหมายของผู้ป่วยสอดคล้องกับระยะเวลารอคอยจริง อย่างไรก็ตาม กลุ่มผู้ใหญ่ตอนต้นและผู้ที่มีระดับการศึกษาสูงมักคาดการณ์ระยะเวลารอคอยเกินจริง การสื่อสารเชิงรุกที่มุ่งเฉพาะกลุ่มอาจช่วยปรับความคาดหวังและเพิ่มความพึงพอใจของผู้ป่วยได้

คำสำคัญ

ดัชนีความรุนแรงทางการแพทย์ฉุกเฉิน, ห้องฉุกเฉิน, ระยะเวลารอคอยที่คาดหมาย, ความพึงพอใจ, ระยะเวลารอคอยจริง

Emergency Department Expected and Actual Waiting Time at University Hospital Emergency Department Among Young Adult Patients

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Abstract

Introduction

Emergency department (ED) overcrowding is a growing challenge, especially due to non-emergency cases. Patient satisfaction is often shaped by their expectations regarding wait times.

Objectives

This study examined the relationship between expected and actual waiting times in a tertiary hospital ED among young adult patients with non-emergency conditions.

Method

A cross-sectional study was conducted at Srinagarind Hospital's ED in Thailand. Young adults aged 18–35 years who visited between 5:00 PM and 10:00 PM were enrolled. Forty-two participants completed paper-based questionnaires assessing

demographics, prior ED experience, perceived and expected waiting times. Actual waiting time—from registration to physician assessment—was obtained from hospital logs. Associations between expected and actual wait times were analyzed, stratified by age, education, and other factors.

Results

Of the 42 participants, the median age was 22 years; 57.1% were female. Most were triaged as level 3 (31%) or 4 (64%). The median expected wait time was 30 minutes, and the actual was 23 minutes ($p = 0.069$). In the 21–25 age group, the actual wait time (14.5 minutes) was significantly shorter than expected (30 minutes, $p = 0.001$). Participants with a bachelor's degree also showed a significant gap between expected and actual times ($p = 0.044$). Overall, 38% expected shorter wait times than they experienced; no gender differences were found.

Conclusion

Most expectations did not show a statistically significant difference from actual ED wait times. However, younger adults and those with higher education tended to overestimate. Targeted communication strategies may help align expectations and improve satisfaction.

Keywords

Emergency severity index, emergency department, expected waiting time, satisfaction, actual waiting time

Introduction

A significant number of patients utilize emergency department (ED) services.[1] In Thailand, it has been found that nearly 60% of patients who seek services at the ED are non-emergency cases.[2] Patients often visit the ED for non-emergency conditions because they may not fully understand what qualifies as a true emergency or which symptoms warrant immediate attention. Additionally, some individuals choose the ED for its convenience, lack of confidence in providing self-care, or due to the necessity of seeking treatment when regular office hours are unavailable, especially considering the ED's 24/7 accessibility.[3–5]

Patients visiting the ED naturally expect prompt and accurate care. However, due to high workloads, the actual waiting times often exceed these expectations. This can result in decreased satisfaction with the treatment received and may increase patients' frustration.[6] Studies conducted in other countries have examined the relationship between patients' expected and actual waiting times, finding that actual waiting times in the ED are often longer than expected.[7] These studies involved populations of varying age groups across different hospitals.

Srinagarind Hospital triages patients according to the guidelines for emergency patient triage and prioritization in the emergency room, as specified by the National Institute for Emergency Medicine (NIEM) in the 2013 regulations (Version 1). The criteria and methods for triage are based on the Emergency Severity Index (ESI), which classifies patients into 5 levels.[8,9] The process for triaging patients at the hospital involves several steps. All patients seeking services are triaged by a triage nurse, who conducts an assessment that includes taking a history of the main symptoms and evaluating vital signs. Patients are then categorized and directed to receive treatment based on the level of urgency. Critical patients classified as ESI 1 and ESI 2 are immediately brought to the resuscitation room, and the physician is notified to provide immediate care. Patients classified as ESI 3, ESI 4, and ESI 5 are triaged and instructed to wait in the examination or waiting areas within the ED. The physician then calls the patients for examination according to the level of urgency.

Although previous studies have examined patient expectations regarding emergency department waiting times, most of this research has been conducted in Western healthcare systems and across

broad age groups. Evidence from Southeast Asia, particularly Thailand, remains limited. In addition, young adults represent a distinct demographic group whose healthcare expectations may differ from those of older patients due to greater reliance on digital information sources and different patterns of healthcare utilization. Understanding waiting time expectations in this population may provide useful insights for emergency departments seeking to improve communication with patients. Therefore, this study aimed to examine the relationship between expected and actual waiting times among young adult patients presenting to a tertiary hospital emergency department in Thailand with non-emergency conditions.

Our study aims to explore the difference between patients' expected and actual waiting times. The research focuses on patients aged 18 to 35 who seek medical services in the ED of Srinagarind Hospital. This age group is at a developmental stage where emotional and intellectual maturity is growing, making them more receptive to learning and capable of retaining information over the long term.[10] These initiatives will enhance patients' understanding of emergencies, leading to improved decision-making in the future.

Methods

Study design, setting, and population

The study was conducted among individuals aged 18 to 35 who visited the ED of Srinagarind Hospital between 5 PM and 10 PM. This time period represents a high-volume operational period in the emergency department, when non-urgent patients are frequently present after regular clinic hours. Exclusion criteria included patients who were unable to respond to the questionnaire, those classified as level 1 or 2 emergencies according to the ESI triage, and those transferred from other hospitals.

The sample size was calculated based on the study by Parra et al., which found that 17.1% of patients waited longer than their expected waiting time.[5] With a 95% confidence level, the sample size was calculated using the one population proportion approach, resulting in 39 participants. This study was approved by the Human Research Ethics Committee of Khon Kaen University (HE661614).

Data collection and management

The survey was conducted from February to November 2024, between 5:00 PM and 10:00 PM, in the ED area of Srinagarind Hospital. The sample was chosen using a convenience sample.

The survey was designed for individual interviews. Data was collected using paper-based questionnaires (Supplemental material). Each set of documents was intended for either the patient or the patient's relative. The questionnaire was developed based on a literature review of studies examining patient perceptions of waiting time in emergency departments. To ensure content validity, the draft questionnaire was reviewed by three emergency physicians with experience in emergency care and research. A pilot test was conducted with 10 patients in the emergency department to assess clarity and comprehension. Minor wording modifications were made following the pilot test. The questionnaire consists of four parts: general information, waiting time assessment, related factors, and suggestions. Given that the questionnaire primarily consisted of descriptive items and single-item measures, internal consistency reliability (e.g., Cronbach's alpha) was not assessed.

Outcome variables

The survey was conducted after the patient triage during the time they were waiting for the physician. The survey included age, gender, Health insurance scheme, education, ESI level, and presenting illness. The actual waiting time was measured in minutes from registration until the physician first verbally contacted the patient and began the medical evaluation. The expected waiting time was measured in minutes based on the patient's response to an open-ended question in the questionnaire after triage, while they waited for the physician.

Data analysis

Continuous variables were tested for normality using histograms and the Shapiro-Wilk test. Baseline characteristics and clinical data were presented as medians for continuous variables and counts and percentages for categorical variables. Statistical methods were selected based on the data distribution. Shapiro-Wilk tests were conducted to assess the normality of both the expected and actual waiting times. The results indicated that both variables showed non-normal distributions ($p < 0.05$), which justified the use of non-parametric statistical methods. Consequently, the Wilcoxon matched-pairs signed-rank test was applied for continuous variables, while the Chi-squared (χ^2) test or Fisher's exact test was used for categorical data. The type I error for the study was set at 0.05.

The analysis was performed using R statistical software version 4.4.2 (www.R-project.org, R Foundation for Statistical Computing).

Results

A total of 42 completed questionnaires were collected from participants, resulting in a 100% response rate. Table 1 presents the general information about the 42 participants analyzed. Of these, 57.1% were female. In terms of triage levels, 31% were classified as level 3, 64% as level 4, and 4.8% as level 5. Among all participants, 39 (93%) held non-medical professions, 37 (88.1%) had a bachelor's degree or higher, and 23 (55%) never visited the ED. The most common healthcare entitlement among participants was the Universal Coverage Scheme, which covered 22 participants (52%), followed by government officials, who accounted for 9 participants (21%). The primary reason for visiting the Emergency Department (ED) was animal bites or scratches, reported by 8 participants (19%), followed by falls or accidents, which affected 7 participants (17%). Notably, 38% of participants expected a shorter waiting time than the actual waiting time, with no gender discrepancy.

In terms of social media usage, Facebook was the most popular platform (86%), followed by Instagram (36%), Twitter (29%), and TikTok (29%). LINE (messaging application) and YouTube were used by 26% of participants. No statistically significant differences in social media usage patterns were found between males and females.

For sources of medical information, the internet was the most frequently used source (86%), followed by television (26%) and advice from neighbors (9.5%). Newspaper use was minimal (4.8%) (Table 1).

Expected and actual waiting times

Overall, the median expected waiting time was 30 minutes, while the median actual waiting time was 23 minutes, showing no significant overall difference ($p = 0.069$). Table 2 compares the expected waiting time and actual waiting time among different patient characteristics. Patients classified as ESI level 3 had a median expected waiting time of 20 minutes, which was slightly shorter than the actual waiting time of 24 minutes, though this difference was not statistically significant ($p = 1.000$). In contrast, patients with ESI levels 4 and 5 had longer expected waiting times (median 30 and 35 minutes, respectively) compared to their actual waiting times (median 20 and 21.5 minutes, respectively), but these differences did not reach statistical significance ($p = 0.052$ and $p = 1.000$, respectively).

Table 1 Participants' characteristics

Participants characteristic	Overall N = 42 n (%)	Female N = 24 n (%)	Male N = 18 n (%)	p-value
Age group (years)				0.624
18-20	13 (31.0)	8 (33.0)	5 (28.0)	
21-25	14 (33.0)	6 (25.0)	8 (44.0)	
26-30	8 (19.0)	5 (21.0)	3 (17.0)	
31-35	7 (17.0)	5 (21.0)	2 (11.0)	
Health insurance scheme				0.138
Government	9 (21.0)	8 (33.0)	1 (5.6)	
Self-pay	8 (19.0)	4 (17.0)	4 (22.0)	
Social security	3 (7.1)	2 (8.3)	1 (5.6)	
Universal coverage	22 (52.0)	10 (42.0)	12 (67.0)	
Education				0.679
Master	1 (2.4)	0 (0.0)	1 (5.6)	
Bachelor	36 (86)	21 (88)	15 (83.0)	
Diploma	1 (2.4)	1 (4.2)	0 (0.0)	
High school	3 (7.1)	2 (8.3)	1 (5.6)	
Middle school	1 (2.4)	0 (0.0)	1 (5.6)	
Occupation				0.247
Healthcare	3 (7.1)	3 (13.0)	0 (0.0)	
Non-healthcare	39 (93.0)	21 (88.0)	18 (100.0)	
ED experience in the previous 365 days				0.097
None	23 (55.0)	10 (42.0)	13 (72.0)	
1-3 times	14 (33.0)	11 (46.0)	3 (17.0)	
More than 3	5 (12.0)	3 (13.0)	2 (11.0)	
Illness				0.461
Animal bite	8 (19.0)	5 (21.0)	3 (17.0)	
Fall	7 (17.0)	4 (17.0)	3 (17.0)	
Fever	3 (7.1)	2 (8.3)	1 (5.6)	
Foley change	1 (2.4)	1 (4.2)	0 (0.0)	
Gastrointestinal	4 (9.5)	3 (13.0)	1 (5.6)	
Genitourinary	3 (7.1)	2 (8.3)	1 (5.6)	
Neurology	3 (7.1)	3 (13)	0 (0.0)	
Otolaryn	1 (2.4)	1 (4.2)	0 (0.0)	
Respiratory	1 (2.4)	0 (0.0)	1 (5.6)	
Skin	3 (7.1)	2 (8.3)	1 (5.6)	
Sport injury	2 (4.8)	0 (0.0)	2 (11.0)	
STD prophylaxis	1 (2.4)	0 (0.0)	1 (5.6)	
Traffic trauma	5 (12.0)	1 (4.2)	4 (22.0)	

Table 1 Participants' characteristics (cont.)

Participants characteristic	Overall N = 42 n (%)	Female N = 24 n (%)	Male N = 18 n (%)	p-value
Triage level				0.165
ESI 3	13 (31.0)	10 (42.0)	3 (17.0)	
ESI 4	27 (64.0)	13 (54.0)	14 (78.0)	
ESI 5	2 (4.8)	1 (4.2)	1 (5.6)	
Social media used				
Facebook	36 (86.0)	20 (83.0)	16 (89.0)	0.685
Twitter	12 (29.0)	9 (38.0)	3 (17.0)	0.139
TikTok	12 (29.0)	8 (33.0)	4 (22.0)	0.430
Instagram	15 (36.0)	8 (33.0)	7 (39.0)	0.710
Line	11 (26.0)	6 (25.0)	5 (28.0)	1.000
YouTube	11 (26.0)	6 (25.0)	5 (28.0)	1.000
Source of medical information				
Internet	36 (86.0)	20 (83.0)	16 (89.0)	0.685
Neighbor	4 (9.5)	2 (8.3)	2 (11.0)	1.000
Television	11 (26)	5 (21)	6 (33.0)	0.483
Newspaper	2 (4.8)	1 (4.2)	1 (5.6)	1.000
Waiting time				0.233
Expected waiting time > actual waiting time	26 (62.0)	13 (54.0)	13 (72.0)	
Expected waiting time ≤ actual waiting time	16 (38.0)	11 (46.0)	5 (28.0)	

ESI: emergency severity index, ED: emergency department

Among age groups, the 21-25 years group showed a significant difference between expected and actual waiting times, with a median expected waiting time of 30 minutes versus an actual waiting time of 14.5 minutes (p = 0.001). No significant differences were observed in other age groups.

In terms of education level, patients with a bachelor's degree had a significantly longer expected waiting time (median 30 minutes) than their actual waiting time (median 20.5 minutes, p = 0.044). However, no statistically significant differences were found in other education levels.

For occupation, healthcare workers had a notably longer expected waiting time (median 60 minutes) than actual waiting time (median 24 minutes), but

this was not statistically significant (p = 0.181). Among non-healthcare workers, the expected waiting time was also longer (median 30 minutes) compared to the actual waiting time (median 21 minutes), though not statistically significant (p = 0.223).

Regarding ED experience, patients with no prior ED visits, 1–3 prior visits, and more than three prior visits all had no significant differences between expected and actual waiting times.

Participants' perception of ED crowding did not significantly influence the difference between expected and actual waiting times. Similarly, no statistically significant differences were observed when analyzing waiting times based on the number of patients during an 8-hour shift (Table 2).

Table 2 Compare the patients' expected waiting time and actual waiting time

	Expected Time	Waiting Time	p-value
Overall	30 (20, 40)	23 (14, 38)	0.069
ESI			
ESI 3	20 (20, 30)	24 (23, 38)	1.000
ESI 4	30 (30, 60)	20 (14, 43)	0.052
ESI 5	35 (33, 38)	22 (17, 26)	1.000
Age group (year)			
18-20	30 (20, 40)	28 (16, 52)	0.294
21-25	30 (30, 30)	14.5 (11, 21)	0.001
26-30	20 (15, 30)	32.5 (22 38)	0.447
31-35	60 (30, 60)	24 (22, 43)	0.151
Education			
Master	30 (30, 30)	50 (50, 50)	1.000
Bachelor	30 (20, 45)	20.5 (14, 38)	0.044
Diploma	20 (20, 20)	28 (28, 28)	1.000
High school	30 (30, 45)	31 (28, 48)	1.000
Middle school	30 (30, 30)	17 (17, 17)	1.000
Occupation			
Healthcare	60 (60, 60)	24 (24, 29)	0.181
Non-healthcare	30 (20, 30)	21 (14, 38)	0.223
ED experience in the previous 365 days	30 (20, 30)	21 (13, 32.5)	0.229
None	35 (30, 60)	26 (16, 54)	0.300
1-3 times	30 (15, 30)	20 (15, 38)	0.855
More than 3 times			

Table 2 Compare the patients' expected waiting time and actual waiting time (cont.)

	Expected Time	Waiting Time	p-value
Perception of the number of patients			
Low	30 (23, 30)	32.5 (12, 38)	0.959
Moderate	30 (20, 60)	23 (14, 28)	0.112
High	30 (30, 30)	20 (15, 38)	0.289
Number of patients during 8-hour shift (16.00 – 24.00)			
45-55	20 (20, 28)	24 (16, 24)	0.396
56-65	30 (30, 60)	20 (10, 31)	0.065
66-75	30 (30, 50)	47 (27, 61)	0.272
76-85	30 (28, 33)	23 (15, 33)	0.148

Values are presented as median (Q1, Q3)
ESI: emergency severity index, ED: emergency department

Patient perspectives

Table 3 summarizes the perspectives of patients regarding ED services. Most of the participants (69%) perceived their condition as an emergency, with no significant difference between male and female participants. Regarding ED crowding, 31% of participants believed the ED was highly crowded, 45% perceived moderate crowding, and 24% thought it was not crowded.

Participants' knowledge of the emergency medical service number (1669) was assessed, with 67% correctly identifying the number. However, 33% of participants were unaware of this service, with no significant gender difference. Only 17% of participants were aware that the Srinagarind Hospital ED had an official LINE account for patient inquiries, and this awareness was higher among female participants (25% vs. 5.6%), but the difference was not statistically significant (p = 0.208).

The study also explored participants' understanding of ED accessibility and service prioritization. Most participants (88%) were aware that the ED operates 24 hours a day, and 93% correctly understood that patient care is prioritized by condition severity rather than on a first-come, first-served basis. Notably, 7.1% of participants were unsure about the prioritization system, and males were more likely to be uncertain (17% vs. 0%, p = 0.071).

Regarding service charges, 43% of participants were uncertain about

Table 3 Patient perspectives on the emergency department

Factor	Overall (N = 42) n (%)	Female (N = 24) n (%)	Male (N = 18) n (%)	p-value
Perceived their condition as an emergency	29 (69.0)	17 (71.0)	12 (67.0)	0.773
Perception of the number of patients				0.212
Low	10 (24.0)	7 (29.0)	3 (17.0)	
Moderate	19 (45.0)	8 (33.0)	11 (61.0)	
High	13 (31.0)	9 (38.0)	4 (22.0)	
Knowledge of the EMS contact number (1669)	28 (67.0)	18 (75.0)	10 (56.0)	0.186
Awareness of Srinagarind Hospital ED LINE account for consultation	7 (17.0)	6 (25.0)	1 (5.6.0)	0.208
Believed ED is accessible 24 hours for all illnesses	37 (88.0)	21 (88.0)	16 (89.0)	1.000
Understanding of ED triage system (prioritization by severity, not arrival order)				0.071
Correct understanding	39 (93.0)	24 (100.0)	15 (83.0)	
Uncertain	3 (7.1)	0 (0.0)	3 (17.0)	
Perception of ED service charges				0.779
Believed ED services require payment	16 (38.0)	8 (33.0)	8 (44.0)	
Uncertain	18 (43.0)	11 (46.0)	7 (39.0)	
Believed all ED services are free	8 (19.0)	5 (21.0)	3 (17.0)	
Understanding of emergency symptoms (Fever, cough, cold, sore throat, migraine, stomach ache, diarrhea) is not always an emergency)				0.664
Correct understanding	19 (45.0)	12 (50.0)	7 (39.0)	
Uncertain	9 (21.0)	4 (17.0)	5 (28.0)	
Incorrect understanding	14 (33.0)	8 (33.0)	6 (33.0)	
Acceptance of the online consultation system requiring self-purchased medication				1.000
Satisfied	35 (83.0)	20 (83.0)	15 (83.0)	
Dissatisfied	4 (9.5)	2 (8.3)	2 (11.0)	
Inaccessible	3 (7.1)	2 (8.3)	1 (5.6)	

EMS: emergency medical service, ED: emergency department

Supplemental material: Questionnaire.pdf

whether ED services required payment, while 38% correctly indicated that fees may apply. Only 19% incorrectly believed that all ED services were free.

When asked about emergency symptoms, 45% of participants correctly identified that fever, cough, cold, sore throat, migraine headache, stomach ache, and diarrhea are not always emergencies, whereas 33% mistakenly considered these conditions as emergencies in all cases. Lastly, when asked about their willingness to use an online consultation system that requires patients to purchase medications themselves, 83% of participants expressed satisfaction with this option. Only 9.5% were dissatisfied, and 7.1% indicated they did not use internet-accessible mobile phones (Table 3).

Discussion

The study examined the relationship between patients' expected waiting times and the actual waiting times in the ED of Srinagarind Hospital. The findings emphasize several important aspects, including patient expectations, perceptions of emergency situations, and factors contributing to discrepancies in waiting times. The results indicate that while most participants had a general understanding of the ED triage system, a significant proportion (38%) still expected shorter waiting times than what was actually experienced. This aligns with previous studies that found a mismatch between patient expectations and actual ED processes, contributing to dissatisfaction and frustration.[10,11] Although the overall difference between expected and actual waiting times did not reach statistical significance ($p = 0.069$), this result should be interpreted with caution. The relatively small sample size may have limited the statistical power to detect a true difference. Notably, the p-value was close to the conventional threshold for statistical significance, suggesting a potential trend toward shorter actual waiting times compared with patient expectations.

Younger patients (aged 21–25 years) and those with a bachelor's degree showed a statistically significant difference between expected and actual waiting times. In the 21-25 age group, the actual waiting time was markedly shorter than expected (14.5 vs 30 minutes), suggesting a tendency to overestimate waiting times rather than expect faster service. Additionally, individuals with higher education may have greater health literacy but also higher expectations regarding healthcare efficiency. These findings suggest that education level and prior knowledge may influence patients' perceptions of how quickly they should be seen.[12]

A crucial aspect of this study was identifying the factors affecting patient expectations. The perception of ED crowding did not significantly impact expected waiting times, indicating that patients may not fully understand how patient volume affects ED operations. Similarly, the number of previous ED visits was not significantly associated with differences in waiting time perception, suggesting that prior experience does not necessarily lead to more realistic expectations. This contrasts with studies showing that frequent ED users tend to have higher satisfaction if they are attended to quickly.[12]

Interestingly, patients' perception of emergency department crowding was not significantly associated with their expected waiting time. Intuitively, one might expect that patients who perceive the emergency department as crowded would anticipate longer waiting times. However, our findings suggest that visual impressions of crowding may not translate directly into realistic expectations of waiting times. This may occur because patients are often unfamiliar with the operational workflow of emergency departments, including triage prioritization and resource allocation for higher-acuity cases. As a result, patients may rely on prior assumptions or general expectations rather than situational cues when estimating waiting times. This observation highlights the importance of providing clear information about triage processes and expected waiting times, rather than assuming that patients will accurately infer these factors from the surrounding environment.

One notable finding is that only 17% of participants were aware of the Srinagarind Hospital ED LINE account, which provides an alternative way to seek medical advice. Given the increasing reliance on digital communication, improving awareness of this service may help manage non-urgent cases outside the ED and reduce unnecessary visits.[11] Additionally, a large majority (83%) of participants expressed support for an online consultation system, which suggests that digital health initiatives could play a role in reducing unnecessary ED visits.[13,14] The misperception of emergency symptoms remains a critical issue. Nearly one-third of participants incorrectly believed that symptoms such as fever, cold, or mild gastrointestinal issues always required emergency care. This reinforces the need for public health education on emergency conditions to help patients make informed decisions about when to seek ED care versus alternative healthcare services.[15] Misinterpretations of emergency conditions can lead to increased ED overcrowding, longer wait times for critical patients, and

inefficient use of healthcare resources.

The findings also support the concept that communication strategies in EDs need improvement. Understanding patient expectations may help ED staff communicate more effectively and reduce frustration during waiting periods. Previous research has shown that providing clear information on waiting times and triage processes can reduce patient anxiety and aggression toward ED staff.[16–18] Furthermore, studies indicate that patients who perceive long wait times without explanation tend to experience higher dissatisfaction and stress, further straining hospital staff.[19,20]

Future strategies to better align patient expectations with actual waiting times may include improving triage communication, real-time ED triage display boards, providing educational materials that explain ED processes, and utilizing digital platforms such as the hospital's LINE account or social media to share information about waiting times and triage prioritization.[21]

Limitation

This study was conducted at a single tertiary care hospital and used convenience sampling, which may limit the generalizability of findings to other healthcare settings. In addition, data collection was restricted to a specific time period (5 PM – 10 PM), which may represent a distinct subgroup of patients, particularly those presenting after regular clinic hours with non-urgent conditions, and may not reflect patient characteristics during other time periods, such as daytime or overnight hours. The sample size was relatively small and was calculated using a one-sample proportion approach rather than a method based on paired data, despite the primary outcome involving within-subject comparisons between expected and actual waiting times. The study focused only on young adult patients aged 18–35 years, excluding perspectives from other age groups who may have different expectations regarding ED waiting times. Additionally, external factors such as time of day, staff availability, and seasonal variations in patient volume were not controlled for, which could influence actual waiting times. Some subgroup categories contained small numbers of participants, which limits statistical power and requires cautious interpretation. Future studies should explore interventions to improve patient education on triage processes, assess the impact of real-time wait time communication, and investigate how digital tools can be better integrated into emergency care pathways.

Conclusion

This study examined the relationship between expected and actual waiting times in the emergency department (ED) of Srinagarind Hospital among young adult patients with non-emergency conditions. Overall, no statistically significant difference was observed between expected and actual waiting times. However, exploratory subgroup analyses showed differences in the 21–25 year age group and among participants with a bachelor's degree. In addition, 38% of participants expected shorter waiting times than they experienced, suggesting variability in waiting time expectations within this population. These findings indicate that patient expectations regarding ED waiting times may vary across demographic groups. Future efforts focusing on communication about triage processes and expected waiting times may help align patient expectations with ED operations.

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Conflict of interest

The authors declare that they have no competing interests

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