International Journal of Emergency Medicine

RESEARCH Open Access

Prehospital emergency services: expectations of patients and companions

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Abstract

Background Prehospital emergency care is a vital pillar of the health system and serves as the first point of contact for patients. It plays an important role in providing timely care to emergency patients. The expectations of patients and their companions from these services, especially in critical situations, have the capacity to exert a significant influence on their experience and the quality of services. The aim of this study is to identify and investigate the needs and expectations of patients and their companions regarding prehospital emergency services.

Methods In this descriptive-cross-sectional study, 1100 patients and their companions were selected. The collection of data was facilitated by means of a questionnaire on expectations of pre-hospital emergency services, which was administered via telephone interviews following the determination of validity and reliability. The collected data were then analyzed using SPSS21 statistical software, and the results were interpreted through the use of descriptive and inferential statistics.

Results In this study, the average score of interviewees' expectations was high (80.01 ± 8.9) and the level of expectations was reported to be higher in women than in men. The results showed that the highest expectations of patients and their companions were related to the presence of a doctor in the ambulance, sufficient skills of medical personnel, respectful treatment combined with gaining trust and providing rapid emergency services. A significant relationship was observed between expectations and marital status, age, occupation and level of education ($P < 0.001$).

Conclusion The conclusion drawn from this study indicates that patients and their companions, particularly female members, hold elevated expectations of pre-hospital emergency services. The findings of this study indicate that patients and their companions, especially women, have elevated expectations of pre-hospital emergency services. These expectations encompass the presence of a medical professional in the ambulance, competent staff, respectful treatment, and expeditious service delivery. A notable correlation was identified between these expectations and socio-economic variables. These results underscore the importance of addressing patients' needs and expectations to enhance the quality of emergency services. Specifically, enhancing staff skills and improving service delivery processes have the potential to increase patient and companion satisfaction.

Keywords Emergency medical services, Expectations, Prehospital emergency, Patient

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Introduction

In contemporary society, the importance of health and medical services for community health is widely acknowledged [1, 2]. pre-hospital emergency medical services (EMS) represent the first point of contact for patients with the healthcare system and playing a pivotal role in maintaining public health [3]. The expectations of patients and their families in emergency situations vary depending on the patient's condition, the environment, and the culture of the community [1]. In such circumstances, the expectations of society from prehospital emergency services are twofold: first, to respond to incidents as quickly as possible; and second, to diagnose and manage sudden problems [4]. In caring for emergency patients, it is essential to prioritize the needs and expectations of the patient and their family, as meeting these expectations is a crucial indicator of the effectiveness of the health system [5].

The development of knowledge and the enhancement of public awareness have resulted in elevated expectations of healthcare systems, particularly with regard to the provision of emergency medical services (EMS) [6]. It is imperative to recognize the important of patient expectations in optimizing the quality of emergency services and ensuring patient-centered care [7]. This is particularly crucial in emergency situations, where effective responses are paramount [8]. Indeed, the assessment of patient and companion expectations has been demonstrated to have a strong impact on patient experiences and treatment outcomes. Fundamentally, the public's expectation a prompt response to emergency needs, and dissatisfaction is common when EMS waiting times are prolonged [9].

The expectations of health systems are influenced by a number of factors, including the type of illness, previous experience, and the culture of the patient [10]. High Workload or extended mission times may limit EMS personnel's ability to address these expectations. However, community members consistently expect professional and respectful interactions from EMS personnel. Alongside rapid medical interventions, empathy with patients and their families is a basic priority for those in need of emergency care [11]. Unrealistic or unmet expectations may lead to frustration and anger among patients, which can manifest in violence against emergency personnel [12].

The assessment of patients' needs and expectations has been demonstrated to result in enhanced relationships between staff and patients, reduced stress for patients' families, and facilitated patient recovery [4]. In order to provide patient-centered treatment that is tailored to patients' requests and needs, it is necessary to identify and understand patients' expectations of good EMS [13, 14]. A more profound comprehension of patient expectations does not imply that patients make unilateral decisions regarding their own treatment; rather, when healthcare professionals encounter unrealistic or divergent expectations, they comprehend the patient's expectations, become better equipped and prepared to engage in empathetic communication, and collaborate with patients to moderate, and rationalize these expectations [5]. Research has demonstrated that patients and their families seek expeditious, superior quality care, and respectful and empathetic treatment when medical problems arise, especially in critical situations [11, 15, 16].

However, an extensive review of the literature revealed no studies that examined the expectations of patients and their companions regarding EMS in Iran and, only a limited number of studies have addressed this issue worldwide. Based on this gap, the present study was guided by the following research question: "What are the expectations of patients and their companions from pre-hospital emergency services in Iran?" Consequently, the objective of this study is to identify and examine the needs and expectations of patients and their companions in the field of pre-hospital emergency services.

Methods

Study design

This descriptive cross-sectional study was conducted in 2020 at the Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences. To ensure transparent and comprehensive reporting, this study adhered to the STROBE statement.

Setting and sample

This study was conducted in East Azerbaijan Province, northwestern Iran, with an area of approximately 45,000 km² and a population of 3.9 million. Tabriz, the provincial capital, has a population of about 1.6 million [17] and serves as the main referral center for health services in the region [18]. Prehospital emergency care is provided by the Iranian EMS, under the Ministry of Health, fully government-funded and free of charge. Residents access EMS through the national emergency number 115, which operates via the Emergency Medical Dispatch (EMD) center. The EMD identifies emergencies and deploys the nearest available team [16]. At the time of the study, Tabriz EMS included one air emergency base, 31 urban, and 7 interurban ambulance stations, staffed by 223 personnel (157 EMTs, 31 anesthetic technicians, and 35 nurses). The system is modeled on American–British structures but adapted to local conditions, providing both on-scene care and safe patient transfer to hospitals [15, 19]. EMS personnel deliver interventions either by real-time consultation with physicians via radio/telephone or by following established offline protocols when immediate consultation is not feasible.

The study population consisted of patients and their companions who had used prehospital emergency services. The sample size was determined as 1,100 people based on a 95% confidence level, a 5% margin of error, a 30% attrition rate, and a design effect of 2. Participants were selected using a cluster sampling method. Inclusion criteria included individual's adults (≥ 18 years) residing in Tabriz who had at least one EMS contact and provided informed consent,

had their contact information recorded during the EMS call, and were available at the time of the research call. Exclusion criteria encompassed individuals with cognitive impairments (e.g., severe memory impairment, inability to comprehend text) or those unable to complete the interview for any reason.The EMD receives more than 500,000 calls annually, approximately 130,000 of which result in ambulance dispatch. Of these calls, 1,600 numbers were randomly selected. A total of 1,380 individuals completed an initial telephone screening, and 1,220 provided consent to participate in the study. Conducting telephone interviews with such a large sample during the COVID-19 pandemic posed significant challenges; 120 individuals declined to provide information or discontinued participation, primarily due to dissatisfaction with EMS, lack of trust, or unwillingness to continue the interview. Ultimately, 1,100 participants completed the questionnaire via telephone interview. Data collection was conducted during two time intervals (09:00–12:00 and 17:00–20:00) to increase accessibility.

Data collection instrument

The Expectations Questionnaire, designed to measure patients' and their companions' expectations of prehospital emergency services, was developed based on a literature review and adapted from previous studies by Carrasco MRes, James David, and Fidela SJ Blank [20–22]. The validity of the instrument was assessed using content and face validity. A pilot study was conducted with 35 participants, including 10 nursing faculty members, 10 emergency medical personnel, 8 dispatchers, 5 emergency physicians, and 2 sociologists. Experts reviewed the questionnaire for writing style, clarity of items, segmentation, wording, appearance, and comprehensibility of statements. Based on their feedback, a content validity index (CVI) of 0.91 and a content validity ratio (CVR) of 0.98 were obtained, indicating excellent content validity.

The questionnaire comprised two sections. The first section of the questionnaire collected socio-demographic information from participants and their history of telephone interactions with emergency personnel. This section inquired about the frequency of these interactions, the underlying purpose of each call, the services received from the communication center, and the operational guidance provided by the ambulance personnel.

The second section consisted of 20 questions divided into two domains: people's expectations of emergency personnel (13 questions), and expectations of response time and organizational facilities (7 questions). Each item was scored based on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). Total score ranged from 20 to 100, with higher scores indicating higher expectations. Scores were categorized as low (< 34), moderate (34–66), or high (> 66). The reliability of the instrument was assessed through a pilot study involving 50 callers to the EMD. The Cronbach's alpha coefficient was 0.82, indicating satisfactory internal consistency.

Statistical analysis

Data were analysed using SPSS version 21. Descriptive statistics (frequencies, percentages, mean and standard deviation) were used to summarize the participants' characteristics and expectation scores. Between-group differences in mean expectation scores were examined using independent-samples t tests (for comparing two groups) and one-way ANOVA with Hochberg's GT2 post-hoc test (for comparing with more than two groups). Linear regression analyses were performed to explore factors associated with expectation scores. Statistical significance was set at $p < 0.05$.

Results

The results demonstrated that, out of 1,100 telephone interviews conducted, 52.6% of the participants were male, with the majority falling within the 31–40 age range. In this study, the majority of interviewees (68.5%) were married and had a diploma level of education below (61.8%). The economic status of 49.8% of the interviewees was average, and 57.5% of them had a private car at home. Furthermore, it was observed that the majority of respondents (50%) had made a single used pre-hospital emergency services, primarily to request assistance for family members or relatives. The results of the study indicate that 79.8% of respondents reported that the message center dispatched an ambulance to the patient's location immediately after the call. Furthermore, 47.6% of individuals reported that ambulance personnel transferred the patient to the medical center after examining them at the scene (Table 1).

As the results in Table 1 show, the mean standardized score of patients' and companions' expectations of EMS was 79.99 ± 8.9, indicating a high level of expectation of prehospital emergency services. In this study, women's expectations (81.45 ± 8.53) were reported to be higher than men's (77.75 ± 9.21).

Table 1 Mean ± SD of participants' expectation scores based on socio-demographic characteristics and emergency contact history ($n = 1,100$)

Variable / Characteristic	Category	Total (*n*, %)	Female 81.45 ± 8.52 (*n*, %)(521)	Male 77.75 ± 9.21 (*n*, %)(579)	Mean ± SD of expectation scores 79.99 ± 80.90	*P*-value
Married***	Single	204 (19.5)	90 (17.9)	114 (21)	78.03 ± 10.56	> 0.001**
	Married	754 (72.1)	342 (68.4)	412(75.1)	80.98 ± 8.28	
	Divorced.Widow	88(8.4)	69(13.7)	19(3.9)	78.77 ± 10.21	
age (years)	18–30	288(26.3)	144(27.6)	144(24.8)	82.70 ± 7.73	> 0.001**
	31–40	358(32.5)	164(31.5)	194(33.5)	85.18 ± 6.75	
	41–50	220(20)	79(15.2)	141 (24.4)	84.80 ± 6.37	
	51–60	140(12.7)	73(14)	67(11.6)	85.17 ± 62.28	
	61–70	72(6.5)	49(9.4)	23(4)	82.38 ± 8.71	
	71–88	22(2)	12(2.3)	10(1.7)	77.77 ± 7.15	
job***	Employee	189(11.2)	58 (11.6)	131(24.2)	75.9 ± 13.82	> 0.001**
	Housewife.Retired	394(37.8)	362 (72.7)	32(5.9)	40.8 ± 54.80	
	Freelance	370(32.7)	35 (7.02)	336(62)	54.8 ± 39.79	
	Unemployed.Student	86(8.3)	43 (8.63)	43(7.9)	74.9 ± 90.77	
Level of education***	Undergraduate	346 (32)	188(37.22)	158(27.85)	68.9 ± 38.78	> 0.001**
	Diploma	414 (38.3)	187(37.02)	227(40.03)	51.7 ± 55.80	
	Bachelor's Degree	283 (26.1)	119(23.55)	164(28.9)	6.9 ± 20.81	
	Master's Degree and above	39 (3.6)	11(2.17)	18(3.1)	61 0.8 ± 52.83	
The amount of income***	Income less than expenses	382(36.4)	187(37.5)	195(35.45)	79.68 ± 9.03	0.069**
	Income equals expenses	548(52.2)	260(52)	288(52.36)	79.97 ± 8.84	
	Income more than expenses	120(11.4)	53(10.6)	67(12.2)	81.83 ± 9. 69	
Have a personal vehicle***	yes	633 (77.3)	273(71.84)	360(82)	80.33 ± 8.80	0.125*
	no	186 (22.7)	107(28.16)	79(18)	79.03 ± 10.43	
Emergency need at home	yes	350 (31.8)	195(37.4)	155(26.8)	80.13 ± 9.64	0.460*
	no	750 (68.2)	326(62.6)	424(73.2)	79.66 ± 10.09	
Number of emergency calls***	1	565(51.9)	255(48.9)	310(53.5)	79.30 ± 9.68	0.304**
	2	277(25.4)	133(25.3)	144(24.9)	80.26 ± 9.91	
	3	107(9.8)	42(8.1)	65(11.2)	79 0.43 ± 10.10	
	4and more	140(12.9)	84(17.7)	56(10.4)	80.59 ± 8.33	
Purpose of calling the emergency number***	For yourself	167(15.8)	67(14.95)	100(17.9)	80.39 ± 9.4	0.038**
	For relatives	576(54.7)	298(60)	278(50)	80.30 ± 8.68	
	For others	275(26.1)	97(19.55)	156(28)	80.70 ± 8.77	
	Medical advice	36(3.4)	27(5.5)	23(4.1)	77.46 ± 8.62	
Services received from the message centre***	Consultation with an expert	84(8.5)	42(8.4)	42(7.55)	79.7 ± 32.38	0.018**
	Consultation with a doctor Ambulance dispatch	75(7.6)	40(8)	35(6.3)	75 0.12 ± 10.26	
		898(91.14)	419 (83.6)	479(86.15)	80.8 ± 43.99	
Services received from ambulance personnel***	Transfer only	144(13.15)	71(13.7)	73(12.65)	79.11 ± 08.64	0.087**
	Transfer after examination	589(53.73)	249(48)	340(58.8)	80.9 ± 08.08	
	Home treatment	363(33.12)	198(38.3)	165(28.55)	79.9 ± 52.09	

*Two-group t-test.**Analysis of variance (ANOVA) test.*** In these cases, some participants did not respond

Table 2 Mean Raw and standardized scores of respondents' expectations of pre-hospital emergency medical services ($n = 1100$ people)

Domain	Number of items	Mean score (5-point Likert)	Standardized score (0–100)	Interpretation
Expectations of emergency personnel	13	3.99 ± 0.50	79.81 ± 9.95	High
Expectations of response time & organizational facilities	7	4.01 ± 0.45	80.16 ± 8.97	High
Overall expectations	20	4.00 ± 0.48	79.96 ± 9.51	High

Table 2 shows that patients and their companions had high expectations in both domains of pre-EMS, with slightly higher scores for response time and organizational facilities (80.16 ± 8.97) than for emergency personnel (79.81 ± 9.95).

Based on Table 3, patients and their companions reported higher than average expectations for all items in both domains of EMS (5-point Likert scale, mean > 2.5). In the domain of response time and organizational facilities, expectations were highest for the presence of a doctor in the ambulance (4.62 points) and sufficient equipment (4.37 points), and lowest for the presence of female personnel (3.89 points) and transfer of the patient to the requested hospital (3.97 points). For emergency

Table 3 Frequency distribution of respondents' expectations of pre-hospital emergency medical services ($n = 1100$)

Item	Domain / action	Strongly disagree (*N*, %)	Disagree (*N*, %)	No opinion (*N*, %)	Agree (*N*, %)	Strongly agree (*N*, %)	Average score
1	Transfer without passing time	22(2)	100(9.1)	226 (20.5)	543(49.4)	209(19)	3.74
2	Transfer after treatment	1(0.1)	10(0.9)	96(7.8)	506(46)	487(44.3)	4.33
3	Transfer to the desired hospital	19(1.7)	64 (5.8)	219(9.19)	399 (36.3)	399 (36.3)	4
4	Patient movement and transfer by personnel	13 (1.2)	38(3.5)	321(2.29)	467(42.5)	261(23.7)	3.84
5	Performing home treatments	33(3)	115 (10.5)	253(23)	331(30.1)	368 (33.5)	3.8
6	Up-to-date knowledge and comprehensive awareness.	2(0.2)	2(0.2)	95(8.6)	491 (44.6)	510(46.4)	4.37
7	Precise skills in providing services	0	2(0.2)	90(8.2)	491 (44.6)	517(47)	4.38
8	The establishment of trust, with good ethics and behavior, security	2(0.2)	1(0.1)	84(7.6)	499(45.4)	514 (46.7)	4.38
9	Confidential and protective of medical information	0	1(0.1)	101(9.2)	496(45.1)	502(45.6)	4.36
10	Well-groomed and familiar with civic culture	2(0.2)	3(0.3)	124(11.3)	494(44.9)	477(43.4)	4.31
11	Understanding and respecting the patient	1(0.1)	4 (0.4)	98(8.9)	516(46.9)	491(43.7)	4.34
12	Explanation of the actions taken	7 (0.6)	4 (0.4)	104(9.5)	512(46.5)	474(43.1)	4.31
13	Explanation of the complications of non-transfer	3 (0.3)	4 (0.4)	114 (10.4)	488(44.4)	491 (44.6)	4.33
14	Rapid arrival of the ambulance	5 (0.5)	7 (0.6)	67(6.1)	611(55.5)	410(37.3)	4.29
15	Having sufficient equipment in the ambulance	1(0.1)	1(0.1)	65 (5.9)	553(50.3)	480(43.6)	4.37
16	Secure transfer, not just fast transfer	1(0.1)	3(0.3)	109(9.9)	610 (55.5)	377 (34.3)	4.23
17	Carrying out emergency measures in the shortest possible time	1(0.1)	4(0.4)	94(5.8)	615(55.9)	386 (35.1)	4.25
18	Transfer the patient to the desired hospital	14(1.3)	52(4.7)	168 (15.3)	587(53.4)	279 (25.4)	3.97
19	The use of female personnel should be considered.	19 (1.7)	34(3.1)	351 (31.9)	347 (31.5)	349(31.7)	3.89
20	Using a doctor inside an ambulance	1(0.1)	3(0.3)	81 (7.4)	242(22)	773 (70.3)	4.62

personnel, expectations were highest for staff competence and professional ethics (mean = 4.38), and the lowest for rapid transfer (3.75 points) and the performance of medical/nursing procedures at home (3.8 points).

Table 4 shows that in simple regression analysis, multiple demographic and call-related factors were associated with expectation scores ($p < 0.05$). In multiple analysis, only gender, specific age (31–60 years), and type of service received from the EMD remained independent predictors, after controlling other variables. Specifically, women reported higher expectations than men, callers aged 31–60 years had higher expectations than other age groups, and individuals receiving immediate ambulance dispatch from the EMD had higher expectations compared to those receiving only consultation. These findings highlight that some associations observed in univariate analyses may not reflect independent effects when other factors are controlled for.

Discussion

The results showed that the expectation score of patients and their companions was 80 out of 100, which indicates the high expectations of callers to EMS. In this regard, the results of studies have shown that patients' expectations of the emergency services are steadily increasing [1]. In addition to various contributing factors, both high expectations [15] and, at times, inappropriate expectations [23] are among the main challenges in emergency care. This situation can lead to dissatisfaction and disappointment among stakeholders [12]. A review of the literature, the reasons for society's high expectations of prehospital emergency care are reported to be: the sudden and threatening nature of emergencies [4], increased public awareness [6], the diversity of medical conditions, and cultural influences [24]. Therefore, the concept of patient and caregiver expectations needs to be placed at the centre of the prehospital health and emergency care system so that we can reduce, rationalise or balance expectations through education and presentation of facts to society and stakeholders.

This study is one of the few studies conducted in the country on the expectations of patients and their companions of prehospital emergency services. The results showed that the expectations of women were significantly higher than those of men. These findings are consistent with the studies by M. Cvetkovic and Sanam Roder-DeWan [25], which also reported higher expectations among women. In this regard, Kimberly Lakin and colleagues showed that in the current situation, with increasing education, greater independence of women and under the influence of some social norms, high expectations of women have been formed in society [10].

In this study, there was a significant difference in the average level of expectations between age groups, marital status, educational level and income. In this regard, studies have shown that patients' expectations are influenced not only by factors related to the health system, but also by family and community conditions [26], and that

Table 4 Simple and multiple linear regression of participants' expectation scores based on socio-demographic characteristics and call history

		Simple		Multiple	
Variable	**category**	**β (95% CI)**	***P*-value**	**β (95% CI)**	***P*-value**
gender	Man	-2.31(-3.36,-1.25)	< 0.001	-4.22(-6. 16, -2.27)	< 0.001
	Female	Ref. Category			
marital status	single	-0.74(-2.97, 1.48)	0.512	-3.06(-6.51, 0.39)	0.831
	married	2.21(0.239, 4.17)	0.028	-0.66(-3.4, 2.12)	0.644
	Divorced.Widow	Ref. Category			
age	18–30	6.17(2.35,10)	0.002	4.22(-1.58, 10.02)	0.153
	31–40	9.27(5.47,13.6)	< 0.001	6.68(1.07, 12.28)	0.020
	41–50	8.79(4.9,12.65)	< 0.001	7.17(1.49, 12.85)	0.013
	51–60	9.26(5.30,13.28)	< 0.001	8.96(3.31, 14.54)	0.002
	61–70	5.78(1.56,9.98)	< 0.001	4.54(-0. 39, 16.47)	0.062
	71–88	Ref. Category			
Level of education	Diploma.Post-Diploma	-5.14(-8.07,-2.2)	< 0.001	-3.42(-7.8, 0.99)	0.128
	Bachelor's Degree	-2.98(-5.89, 0.06)	0.045	-0.54(-4.7, 3.6)	0.801
	Undergraduate Degree	-2.33(-5.29, 0.64)	0.125	0.12(-3.96, 4.19)	0.953
	Master's degree and above	Ref. Category			
job	Employee	4.24(1.6,98.49)	< 0.001	0.933(-2.34, 4.2)	0.576
	Housewife.Retired	2.64(0.4,58.7)	0.012	-1.46(-4.79, 1.87)	0.388
	Freelance	1.5(-0.57, 3.58)	0.155	0.149(-2.88, 3.18)	0.923
	Unemployed.Student	Ref. Category			
The amount of income	Income equals expenses	2.4(0.296, 0.4)	< 0.001000.060	-0.58(-3.12, 1.96)	0.653
	Income more than expenses	0.287(-0.89, 1.47)		-0.48(-1.1, 1.03)	0.534
	Income less than expenses	Ref. Category			
Have a personal vehicle	yes	1.29(-0.21,21.80)	0.092	0.17(-1.5,1.9)	0.831
	No	Ref. Category			
Number of emergency calls	1	-1.96(-4.12,0.12)	0.075	-1.71(-4.67,1.24)	0.255
	2	-0.94(-3.22,1.35)	0.423	-0.18(-3.19,2.83)	0.909
	3	-1.8(-7.48,0.83)	0.178	-1.3(-4.7,2.13)	0.455
	4 and more	Ref. Category			
Emergency need at home	yes	0.105(-1.03,1.24)	0.856	-0.76(-2.53,1.01)	0.214
	No.	Ref. Category			
Purpose of calling emergency services	For relatives	2.98(0.5,54.4)	0.017	2.98(0.5,54.4)	0.168
	For others	3.38(0.5,8.96)	0.010	3.38(0.5,8.96)	0.118
	Medical advice	0.141(-3.6,3.9)	0.941	0.141(-3.6,3.9)	0.285
	For yourself	Ref. Category			
Services received from the EMD	Consultation only	-3.1(-6.99,-0.80)	0.140	-4.7(-8.49,-0.91)	0.015
	Consultation with doctor	-6.18(-9.38,-2.97)	< 0.001	-8.37(-12.30,-4.44)	< 0.001
	Immediate dispatch of ambulance	Ref. Category			
Services received from ambulance personnel	Transfer only	-2.7(-5.07,-0.40)	0.022	-3.3(-6.27,-0.38)	0.026
	Transfer after	-0.87(-2.35,0.61)	0.248	-2 0.3(-4.0,36.28)	0.026
	examination Home treatment	Ref. Category			

individuals' expectations of interaction with the health system are shaped by their social status and past experiences [27]. In this regard, a study by W Huang showed that as socioeconomic conditions improve, more people seek timely diagnosis and treatment and demand the use of emergency services [1]. Therefore, by considering the relevant factors, it is necessary to try to develop reasonable policies that balance public needs and expectations, especially those of women, with the growing trend [28, 29].

The results of the study indicated that the safe transfer of patients to medical centres was one of the high expectations of patients and caregivers. In this context, safe care and provision of critical care until arrival at medical centres was considered essential [30]. Anu Venesoja highlighted in her study that medical, technical and driving skills significantly influence patients' perceptions of safety [31]. These findings suggest that patient expectations align with the nature and objectives of emergency care, underscoring the need for health policymakers to consider the societal needs and expectations when training, employing and empowering prehospital emergency care personnel [32, 33].

Another study highlighted the importance of respecting patients' values, expressed needs, beliefs and dignity [34, 35]. In the present study, other expectations included

a high level of staff knowledge, confidentiality and clear explanations of actions taken. In this context, Phillips emphasised the components of staff competence, including skills, knowledge, behaviour and attitude [36]. In other studies, respecting human dignity and providing accurate care and sufficient skills in a short time [37] and providing explanations of actions taken were reported as patient expectations [38], which are consistent with the results of this study. Therefore, it is necessary to pay attention to this important issue in the training and recruitment of emergency personnel, so that ethical and professional individuals are trained in the system.

The results of this study showed that the highest expectations of patients and caregivers were related to response time and organisational facilities. In this regard, time has been reported as a key element in the provision of EMS [28, 39], which is consistent with the results of the present study. Increasing the number of emergency bases and ambulances, along with implementing continuous training courses for personnel, can improve time-related indicators [40]. Therefore, it is essential for health policymakers to strive to achieve standard response times and meet community expectations.

Additionally, the presence of a physician next to the patient and adequate ambulance equipment were important expectations of patients and caregivers. In some countries, physicians are present at the patient's bedside to provide pre-hospital emergency services [41]. However, in Iran, pre-hospital providers consult the emergency physician remotely for guidance or medical advice in decision making [19]. The involvement of physicians in prehospital emergency services appears consistent with patient needs and expectations and may be beneficial in certain situations.

According to research from Iran, lack of equipment and facilities is one of the major challenges in prehospital emergency care [39], which is consistent with the findings of the present study. While some prehospital emergency care systems employ advanced medical equipment for diagnosis and treatment [42], Significant advances have been made in Iran's pre-hospital emergency system since its establishment, including improvements to its equipment and ambulances [19]. However, the high expectations of stakeholders for the existence of sufficient medical equipment are in line with the nature of prehospital emergency care services, and the development of necessary facilities and resources in prehospital emergency ambulances seems essential.

Limitations

This study was conducted in Tabriz and is not generalizable to other regions. Data were collected through telephone interviews due to the COVID-19 pandemic, which made it challenging to build trust and limited the possibility of obtaining information through face-to-face interactions. Additionally, conducting a qualitative or mixed-methods study was not feasible due to the pandemic. Some subgroups, such as individuals who had not previously contacted the EMD and those who were unavailable at the time of the interview, were not included in the study. Future research should expand to multiple cities and rural areas. It should use face-to-face interviews and qualitative research methods. It should also include different age groups and individuals who have not used emergency services. These changes will increase the richness and representativeness of the data.

Conclusion

This study revealed that patients and their companions have high expectations for accurate and timely prehospital emergency care. Participants identified staff competence, ethical behavior, and clear communication as essential elements of care. They also highlighted the importance of using appropriate medical equipment and, in some cases, having a physician present in the ambulance. These findings underscore the importance of placing patient expectations at the center of EMS planning and strengthening human resources, facilities, and service delivery strategies to better align emergency services with community needs.

Acknowledgements

The authors express their sincere gratitude to the research officials of Tabriz University of Medical Sciences, the Faculty of Nursing and Midwifery and the Medical Emergency and Incident Management Centre of East Azerbaijan Province. We also thank our colleagues for their assistance in data collection and to the citizens who generously participated in telephone interviews and answered our questions.

Author contributions

A: Jafar khani B: Neda gilani C: Azad rahmani D: Faranak jabbarzadeh tabrizy E: Abbass dadash zadeh A: data collection, data analysis and designed the study B: Guidance and supervision of data analysis C: wrote the manuscript D: designed the study E: Data analysis, wrote the manuscript All authors discussed the results, reviewed a the manuscript, and approved its final version.

Funding

This study was extracted from a master's thesis which was funded by Faculty of Nursing and Midwifery of Tabriz University of Medical science (Fund number: 65125). The funding body played no role in the design of the study and collection, analysis, interpretation of data, and in writing the manuscript.

Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

The study was conducted subsequent to the approval of the research plan by the Research Council and the Ethics Committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1399.330), in coordination with the Emergency Center of East Azerbaijan Province. All ethical standards were rigorously observed. Due to the COVID-19 pandemic, data were collected through telephone interviews with 1,100 participants to ensure safety and minimize risk. All participants were fully informed about the purpose, procedures, and

confidentiality of their responses. Informed verbal consent was obtained prior to the interviews, and participants were assured of their right to withdraw from the study at any time without consequence. Interviews were conducted by trained researchers and followed strict ethical guidelines, and all procedures were in accordance with the principles outlined in the Declaration of Helsinki.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Received: 5 July 2025 / Accepted: 31 December 2025
Published online: 05 January 2026

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