

Study of the Relationship Between People's Expectations from and Their Satisfaction with Emergency Prehospital Services in Sanandaj City, Iran

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Abstract

Medical emergency centers all over the world are one of the most important elements of therapeutic services, and the most important objective of this system is to provide satisfactory services in the shortest time based on scientific updates in the world. Also given that customers increase their knowledge day in and day out, and can boost or weaken organizations, their thoughts and feelings must be at the top of any organization's programs. The present research is a survey description and determines the relationship between variables using correlation approach. The statistical population consists of 384 people who use prehospital emergency services, chosen based on nonprobability (convenience). Results show that the relationship between people's expectations and their satisfaction with emergency services is significant, and expectations increase with increased satisfaction with services. In this study, it was shown that people's satisfaction with prehospital emergency services increased the level of expectations, and generally, people's satisfaction has a significant relationship with satisfaction parameters (ambulance, technicians' behavior, technicians' skill, and efficiency of emergency 115). The relationship between technicians' performance and people's expectations was not significant. Health care and treatment managers are recommended to use research findings to identify weaknesses and shortcomings for better service efficacy and patients' satisfaction as a result.

Keywords: Expectations; Satisfaction; Prehospital emergency; Sanandaj City; Iran

Introduction

The rate of success of a product or service in meeting customers' expectations indicates the quality of that product or service [1]. Problems with service quality often occur in organizations that do not concentrate on their customers' needs and demands. A service organization must put itself in the place of customers and lay its policies based on their vision [2]. By introducing new implications of management into the world of medicine, today's emergency wards pay attention to patients' satisfaction and rights more than ever. This is when the emergency ward, compared to other hospital sections, is facing challenges that can lead to reduced patients' satisfaction [3]. Today, in organizations belonging to the treatment sector, patients' satisfaction has been identified as a key criterion in the organization's efficacy [1]. The best and the most important criterion to measure quality and quantity of provided services is customers' satisfaction [4]. Service quality is recognized as the main determinant of an organization's success in today's competitive environment, and any reduction in customers' (patients) satisfaction due to poor service quality is a concern. England's national health care system, National Health Service (NHS), defines quality as providing proper service to the right people at the right time, with the right scientific method at the average limit of the population in a humane manner. Service quality evaluation is considered important among the essential steps in setting quality improvement programs [5].

Patients' satisfaction is considered to be an important factor in the quality improvement in health treatment organizations, because in today's competitive world, the customer has become very important for health-service providers. In such a situation, certainly focus will be turned toward behaviors, tastes, and sensitivities of customers based on which service providers can adjust their orientation. Customer service strategy

is a key subject. The most critical element in environmental evaluation is the organization's information on its domestic and foreign customers as well as prioritization of their needs which should be determined through special research groups and frontline contact with customers. Lack of patients' satisfaction and inattention to their opinions will affect the optimal result of patients' improvement and treatment [6]. Among different services, health-treatment service has a particular position, since this sector communicates with a vast majority of the society, and more importantly, because the critical mission to provide quality health care to the society lies with this sector [7]. Since an efficient health care system can do its mission, i.e., providing health care for the society's members by providing optimal services, it seems urgent to evaluate expectations of health treatment service providers and receivers [8]. Prehospital services are among the units with the most important roles in providing health care services. Prehospital emergency is a health management system with a society-based approach coordinated with all health care systems. Medical emergency centers in all countries are the most important bases for providing health care services. The most important objective of this system is to provide satisfactory services in the shortest time based on the world's updated scientific standards. In health-care systems generally, the first encounter with critical patients is made via prehospital emergency. Patients' satisfaction with this system can affect their satisfaction with other sectors as well [9]. Patient's satisfaction, quality, and care are universal topics affecting all small and big, profit and nonprofit, universal and local organizations. Most organizations evaluate their service quality with satisfaction and their own survival as objectives. Thus they consider the customer as a key criterion in this evaluation. Perceptions of service quality are multidimensional. But there isn't any general agreement on the nature of these dimensions yet, thus making its assessment very complicated [10].

Today in most countries, the study of patients' satisfaction is considered an important criterion for health care quality; thus, it is

urgent to prepare programs to create, maintain, and improve this sense of satisfaction [11]. Customers or service receivers evaluate services by comparing their expectations with the received services. Getting feedback from customers is an essential step in providing and improving quality. Feedback from customers helps identify and prioritize regions where there is a continuous need for improvement. But often there is no proportion between managers' knowledge of customers' perceptions and expectations and customers' real perceptions and expectations; this has led to reduced service quality [10]. Measurement and improvement of patients' satisfaction in health care systems are considered as management's urgent component in such systems. Patients' satisfaction with services and the performance of prehospital emergency—mostly considered as the forefront of the country's health care system—can remarkably affect their satisfaction with all services received.

Therefore, this study aims at examining patients' expectations as receivers of emergency care and medical care on one hand and their satisfaction rate with these services provided by the staff of emergency center 115 on the other hand to answer this main question: Is there a significant relationship between people's expectations and their satisfaction with prehospital emergency service in Sanandaj City?

Methods

This is an applied research in its objective because the aim of this study is to expand knowledge in the area of service. In methodology and implementation, this research is an analytic description with an emphasis on correlation, and it is a survey to collect data. The objective of the survey's research is to explain the current situation of a process or a phenomenon. The measurement tool in this study is a double part questionnaire with 34 five-option questions of the Likert spectrum. The questionnaire includes questions about demographic features of the region surveyed, and people's satisfaction with services and their expectations of prehospital emergency services. The "satisfaction with emergency services" questionnaire is designed for quick and brief evaluation of five major factors (satisfaction with appearance of ambulance, satisfaction with emergency technicians' behavior, satisfaction with the skill of emergency technicians, satisfaction with the performance of emergency technicians, and satisfaction with emergency efficiency. The ambulance's appearance as to cleanliness, comfort, and equipment are considered. Technicians' regard for his sense of responsibility and his good behavior are considered. The skill of technicians, their theoretical and practical knowledge, and their self-confidence are considered. Technicians' performance with respect to their interaction with patients and the efficiency of emergency 115 with regard to the time of ambulance reaching the patient and arriving at hospital will be considered. In this study, Cronbach's alpha

coefficient is used to obtain reliability of the questionnaire. Before final implementation, 30 people were randomly chosen from the research sample and given questionnaires. When questionnaires were collected, Cronbach's alpha was calculated using the SPSS software. As a result, the coefficients 0.854 and 0.792 were obtained for "satisfaction with emergency services" and "people expectations" questionnaires, respectively, indicating internal stability and homogeneity.

Results and Discussion

Patients' demographic features and criteria related to each feature, number of patients, and the percentage of participants in questionnaires are presented in Table 1.

Based on Table 2, mean and standard deviation for variables were as follows: expectations (4.37 and 0.71), satisfaction with ambulance (3.83 and 0.92), satisfaction with emergency technicians' behavior (4.41 and 0.73), satisfaction with emergency technicians' skill (4.2 and 0.86), satisfaction with emergency technicians' performance (4.31 and 0.78), satisfaction with emergency-services' efficiency (4.14 and 0.96), and satisfaction with emergency services (4.1 and 0.69).

To study the relationship between people's expectations from and their satisfaction with pre-hospital emergency services of Sanandaj City, Pearson's correlation coefficient was used (Table 3).

As Table 3 shows, there is a significant relationship between satisfaction with services and its dimensions (except emergency technicians' performance) at 5% error level and 95% probability indicating a significant relationship between satisfaction with services and people's expectations.

Regression was used to examine the impact of people's satisfaction and its parameters with emergency services (X) on expectations (Y). The results are presented in Table 4.

Providing health care services for all members of the society at a macro level is up to Ministry of Health and Therapy and up to medical science universities at a provincial level. In line with this, pre-hospital services in many emergency cases, such as traffic accidents, cardiac arrests, poisoning, etc., are the responsibility of medical emergencies (115) in different universities. The quality of health care services must be based on standards; however, in the past decade, patients' perception of health-care services' quality has been considered as an important criterion for measuring the quality of services which can help eliminate defects and improve quality. Achieving the factors affecting people's expectations of emergency services and presenting constructive solutions to improve the services require identification, classification, and analysis of all needs, expectations, and their perceptions. Finally, the study of the research hypotheses led to the following results.

Staff's demographic features	Features' criteria							
	Female 209 (58.1%)				Male 151 (41.9%)			
Gender								
Marital status	Single 19 (24%)		Married 59 (75%)		Divorced 28 (7.8%)			
Age	Under 20 5 (1.4%)	21-30 64 (17.8%)	31-40 106 (29.4%)	41-50 112 (31.1%)	Above 50 73 (20.3%)			
Education	Illiterate 45 (12.5%)	Elementary 78 (21.7%)	High school 37 (10.3%)	Diploma 92 (25.6%)	Graduates 108 (30%)			
Cases to contact 115	Accidents 46 (12.8%)	Injury and trauma 39 (10.8%)	Delivery 10 (2.8%)	Poisoning 65 (18.1%)	Cardiac 88 (24.4%)	Internal 80 (22.2)	Others 32 (8.9%)	

Table 1: Demographic features of patients and number and percentage of respondents

Research variables	Mean	Standard deviation
People's expectations	4.37	0.71
Satisfaction with ambulance	3.8	0.92
Satisfaction with emergency technicians' behavior	4.41	0.73
Satisfaction with emergency technicians' skill	4.26	0.86
Satisfaction with emergency technicians' performance	4.31	0.78
Satisfaction with emergency-services' efficiency	4.14	0.96
Satisfaction with emergency services	4.19	0.69

Table 2: Research variables and parameters: mean and standard deviation

Based on Tables 3 and 4, the coefficient for people's satisfaction with emergency services was positive and significant at 95% level; thus, there was a direct and positive relationship. Based on results, the coefficient for expectations' dependent variable was 0.019 indicating that 1.9% of changes in expectations are accounted by people's satisfaction with emergency services. Given that Durbin Watson statistic (2.035) is at a standard distance of 1.5-2.5, the independence of residuals can be concluded. With respect to Table 2, the calculated significance level for statistic *F* (7.998) is 0.005 indication significance of regression ($R^2 = 0.022$) at 95% level. Given the above mentioned criteria, this model is qualified. Also, the impact rate of people's satisfaction with emergency services given by beta coefficient is 0.148 (adjusting $R^2 = 0.019$) (p -value = 0.000).

Results from this research indicate that there is a significant relationship between people's expectations from and their satisfaction with prehospital emergency services so that with increased satisfaction with services, expectations will increase too. Results showed that people's satisfaction with prehospital emergency services has increased the level of expectations, and generally, people's expectations have a significant relationship with satisfaction parameters (ambulance, technicians' behavior, technicians' skill, and emergency-services' efficiency), while there was no significant relationship between technicians' performance and people's expectations. Among satisfaction parameters, technicians' behavior had the highest relationship with the correlation coefficient (0.253) with people's expectations. In other words, technicians' sympathy and good behavior rooted in Iranian culture and the Iranian culture of treating people with kindness are very important and satisfactory aspects among patients.

Sub findings of this research based on demographic attributes showed that women had the highest expectations followed by divorced,

Explanatory variable	Expectations		
	Coefficient	T-statistics	(p value)
Fixed rate People satisfaction with emergency services	3.73 0.151	16.445 2.828	0.000 0.005
Fixed rate Satisfaction with emergency ambulance in Sanandaj City	4.043 0.086	25.304 2.118	0.000 0.035
Fixed rate Satisfaction with emergency technicians' behavior in Sanandaj City	3.286 0.246	14.784 4.953	0.000 0.000
Fixed rate Satisfaction with emergency technicians' skill	3.521 0.119	19.035 4.694	0.000 0.000
Fixed rate Satisfaction with emergency 115 efficiency in Sanandaj City	4.723 -0.085	28.374 -2.168	0.000 0.031

Table 4: Model estimation results for research hypotheses

married, and single people. Also, the expectation level in people with higher education was higher than other levels.

In this study, we have tried to obtain people's true expectations of prehospital emergency; thus, by means of interviews with users of the emergency service 115, people's expectations were first listed and then turned into the "expectations" questionnaire. As mentioned before, its validity and reliability were supported, but two questions in the expectations questionnaire were out of standard: the question on the dispatch of the ambulance immediately on calling 115 without any further question and the question on a patient's transfer to the hospital. But nurses on dispatch duty are responsible for answering critical calls concerning ambulance and medical aides for patients. The main difference between telephone operators and nurses on dispatch duty is their role in answering emergency calls and requests for help and medical consultation as well as mental support and judgment under stressed conditions for patients awaiting paramedics' arrival [12].

Therefore it is their duty to ask for information from callers. On the other hand, with the consulting doctor in the medical emergency center and with guidance from the doctor and nurses on dispatch duty, serious consequences can be prevented before the ambulance reaches the patient. Also, directing the caller to save the patient in conditions, including cardiac/respiratory problems and teaching massage techniques and cardiopulmonary resuscitation (CPR) through telephone are among practices to be done. And by getting a good description of the patient's

Hypotheses	Independent hypothesis	Dependent hypothesis	Significance level	Correlation coefficient	Test results
Main hypothesis	People's expectations	People's satisfaction	0.005	0.148	Rejected H0
Hypothesis 1	People's expectations	Satisfaction with ambulance	0.035	0.111	Rejected H0
Hypothesis 2	People's expectations	Satisfaction with emergency technicians' behavior	0.000	0.253	Rejected H0
Hypothesis 3	People's expectations	Satisfaction with emergency technicians' skill	0.000	0.241	Rejected H0
Hypothesis 4	People's expectations	Satisfaction with emergency technicians' performance	0.051	0.103	Supported H0
Hypothesis 5	People's expectations	Satisfaction with emergency-services' efficiency	0.031	-0.114	Rejected H0

Table 3: Statistical results for main and particular hypotheses

state, technicians will have a more precise image of the condition of the patient waiting for help. And they will have a better mental readiness for making decisions about the patient before arriving at the location. This helps reduce the number of false and non-emergency missions and improve service quality.

In their study titled "Study of People's Awareness and Satisfaction in Shiraz with Emergency Center 115," Tawfiqi *et al.* showed that there is a significant relationship between the level of people's awareness of and their satisfaction with prehospital emergency services. Thus it can be presumed that the more people are aware of the performance of emergency services, the more their satisfaction. Finally, people's awareness about the types of services can reduce inopportune demands for ambulance in the emergency center. Teaching people, especially those in deprived parts of the city with low education levels, on this matter will help. But when deciding to choose a treatment center for transferring the patient, it can be said that besides a hospital's emergency sections, many medical emergencies have specialist centers dedicated to particular types of professional cares (trauma, burn, poisoning, and mental disorder) or to a particular group of patients (children). Specialist centers need specialist residents, and other centers should call for the surgical team, surgeons, or other specialists of the hospital. Only a few hospitals are usually defined as the centers of specialty in a region. The transfer time to a specialty center may take longer than the transfer time to emergency sections, but a patient will receive quicker, final treatment in the specialty center. Thus technicians should know based on prescribed guidelines when to transfer the patient to a specialty center. Based on what was said, decision making on choosing a treatment center to transfer the patient is up to technicians. Leaving this decision to patients and their insurance companies based on what was obtained for people's expectations in this research is a wrong approach, and it seems that educating the public and improving their knowledge of duties and authorities of prehospital emergency services are urgent concerns, which in turn will lead to increased satisfaction with services in line with expectations.

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