

Quality requirements based on physicians' and nurses' point of view and quality dimensions based on patients' point of view in some Iranian hospitals in 2014-2015

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Abstract

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Background: Determining quality requirements and quality dimensions is one of the most reliable ways of providing high quality services. The objective of the present study was to investigate the association between quality requirements and quality dimensions according to the points of view of physicians, nurses, and patients.

Materials and Methods: This descriptive study was carried out in hospitals under supervision of Medical Sciences Universities, in 4 provinces of Tehran, Fars, Lorestan, and Yazd (Iran). A group of 432 physicians and nurses answered the Quality Requirements Questionnaire which includes the 4 components of competitive, ethical, professional, and accountability requirements. Furthermore, 500 patients answered the Quality Dimensions Questionnaire, including the 11 dimensions of security (safety), professionalism, empathy (friendship), politeness, reliability, accountability, working speed, competency, accessibility, flexibility, and tangibles. The Pearson correlation coefficient and multiple regression method were used to analyze the data in SPSS software.

Results: The mean quality requirements and quality dimensions scores in the studied hospitals were, respectively, 3.75 and 3.61, both of which were at a higher than medium level. Moreover, the results of Pearson correlation coefficient suggested that the competitive, professional, and ethical components of quality requirement had a significant and direct association with quality dimensions. However, there was no significant association between the accountability component and quality dimensions variables. Furthermore, based on the results of multiple regression and the determination coefficient, it is possible to claim that approximately 13% of variance in quality dimensions depend upon the mean of components of quality requirements.

Conclusions: It can be concluded that work commitment, attention to work, respect for ethical principles, and fair competition at the work place between physicians and nurses lead to the provision of safe and high quality services in hospitals.

Keywords: Service, Quality, Requirements, Dimensions, Physicians, Nurses.

Introduction

Quality is an intricate notion that includes various dimensions and is hard to define because of its implicit Criticisms. Among the different viewpoints toward the notion of quality, customer-centric products and services are the most useful (1). Quality of services is a key factor of organizational growth, achievement, and consistency (2). Thus, successful organizations are those which meet environmental demands (3) and surpass competitors in providing services to clients,

especially in medical healthcare sectors, in which client satisfaction is recognized as a Basic factor of organizational performance (4, 5). Patients' satisfaction is important as it is the cause of their contribution to healthcare processes (6). The necessary tools to achieve this advantage are considered to be complete commitment to customers and adequate

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knowledge of quality requirements (7). The 4 quality requirements (competitive, accountability, professional, and ethical requirement) are considered as inspirations and incentives that challenge any organization that seeks to actively comply with quality standards. To concentrate on customers' needs, which forms the core concept of quality, is one of the most effective tools of competition and constancy (competitive requirement) (8). Moreover, accountability requirement refers to employees' responsibility or accountability towards the services they deliver (9). The component of professional requirement refers to the commitment to meet customers' demands through applying the most suitable operation. Finally, the ethical requirement highlights the fact that customers and clients deserve services with the highest quality (8).

To provide high quality services in order to achieve customers' satisfaction, it is necessary to recognize quality dimensions of services, importance of every single dimension for customers, and evaluate customers' expectations regarding each dimension (10). Service quality is recognized as a fundamental factor for organizational development and achievement and it is considered as an effective, strategic, and pervasive issue in organizations' management agenda (11).

Service quality dimensions in the present study include:

- Safety: High safety and security of product and services
- Politeness: Employees' good behavior in dealing with customers (12)
- Reliability: Bailment, faith, and accuracy in providing services (9)
- Accountability: Employees' tendency to help customers and provide fast services (10)
- Speed: Providing suitable and correct services as fast as possible (9)
- Competency: Level of skills, expertise, and professionalism in providing services (13)
- Access: Easy access to employees plus customers' easy and fast access to services (12)
- Flexibility: Capacity of an organization in terms of adaptation to internal changes and requirements
- Tangibles and appearances: Equipment, physical facilities, employees, and well-ordered documents (14)
- Empathy: Organization's and individuals' attention to customers (10)
- Professionalism: Staffs' high abilities and skills in performing tasks in the best possible way (12)

The main goal of service providers is to deliver satisfactory, affordable, and scientifically standardized services by means of appropriate methods and in the shortest possible time (15). A variety of studies on measuring the quality of services in hospitals as well as patients' satisfaction with hospital care services have reported the existence of many challenges and defects in this area (16).

Since the main function of hospitals is to present high quality care and services to patients and meet their needs and expectations, the concept of quality needs to be internalized in the hospital framework (17). Despite the high value of healthcare services, services delivered by this sector have led to public dissatisfaction in many cases (16, 18). It seems possible to improve the services provision process and highly increase customers' satisfaction, as a pivotal factor of competition in this area, through determining Effectiveness of quality in the healthcare sector and ensuring of the quality of services through assessing their effectiveness level (19). The necessity of this research for the role and the critical importance of hospitals, community health and health development in the country.

Therefore, evaluation of hospitals' performance in order to enrich service quality in addition to preventing disease outbreaks is inevitable. Moreover, conducting more detailed and scientific investigations in the healthcare sectors are essential to improving the quality of medical services in the country

and meeting the publics’ expectations. The main goal of medical healthcare providers is to present affordable high quality services with scientific standards and in the shortest possible time.

Moreover, the concept of quality is of grave importance in healthcare systems due to the destructive consequences of providing poor quality services such as increasing diseases, disabilities, and costs and decreasing customers’ trust. Thus, the objective of the present study was to investigate the association between quality requirements and quality dimensions according to the points of view of physicians, nurses, and patients.

Material and Methods

This descriptive study started in the first half of 2014 and finished in the first half of 2015 and was carried out in hospitals under supervision of Medical Sciences Universities of 4 provinces of Iran. Table 1 presents details

of the subjects selected from each province. The study also used Edward’s model (1990) to design the quality requirements variable plus a combination of the 3 models of Grenroos (1988), Johnstone (1995), and Parasuraman (1988) to design the quality dimensions variable. The multistage cluster sampling method was applied for selecting provinces and hospitals and random simple sampling method was used for selecting hospital staff and customers. The subjects were chosen from hospitals of the 4 provinces of Tehran, Fars, Lorestan, and Yazd (Iran). The subjects were divided into 2 groups of staff and clients. The number of subjects in the first group was determined as 432 personnel of hospitals using Cochran formula. The number of subjects in the second group was considered as infinite number of clients of hospitals, but in order to establish congruence between the two groups, the number of subjects in the second group was determined as 500 clients (Table 1).

Table 1: Statistical population and number of samples in the hospitals under supervision of Medical Sciences Universities

No	Province name	Number of hospitals	Number of staff	Subjects
1	Tehran	95	9344	271
2	Fars	41	3452	101
3	Lorestan	14	1160	34
4	Yazd	12	811	26
Total	4	162	14767	432

The reliability and validity of each questionnaire was confirmed. The Quality Requirements Questionnaire consists of the 4 components of competitive, accountability, professional, and ethical requirements. It is composed of 20 multiple-choice questions scored based on a 4-point Likert scale ranging from completely agree to completely disagree. The Quality Dimensions Questionnaire

includes the 11 dimensions of safety, professionalism, empathy (friendship), politeness, reliability, accountability, working speed, competency, accessibility, flexibility, and tangibles or appearances. The questionnaire is composed of 52 multiple-choices questions scored based on a 4-point Likert scale ranging from completely agree to completely disagree (Table 2).

Table 2: Components of quality dimension and quality requirements and their indexes

Variable	Dimensions	Indexes (questionnaire contains)
Quality requirements	Competitive requirement	- Meeting customers’ need in order to appear as a premier employee
		- Providing better services in order to obtain higher ranks
		- Treating customers appropriately in order to obtain higher evaluation score
		- having a sense of competition at work
		- Trying the best in order to not lose the sense of competition
		- Trying the best in order to improve the organization’s rank

Quality dimensions	Accountability requirement	<ul style="list-style-type: none">- Answering customers questions- Respecting and honoring customers- Performing tasks based on specified standards- Feeling responsible toward providing services- Having a good relationship with customers due to high motivation
	Professional requirement	<ul style="list-style-type: none">- Employees' respecting each other- Employees' paying special attention to customers- Increasing employees' scientific knowledge- Educating employees to provide better services- Increasing employees' knowledge and skills
	Ethical requirement	<ul style="list-style-type: none">- Respecting customers as a moral obligation- Observing organization's code of ethics- Serving customers due to the belief of being superior among all creatures- Considering morals when presenting service to customers
	Tangibles	<ul style="list-style-type: none">- Having an appropriate and ideal work environment- Having modern facilities and equipment- Employees' fine appearance matching the work environment- Arranging furniture and tools suitable for an office
	Reliability	<ul style="list-style-type: none">- Giving correct answers to customers- Presenting appropriate information to customers- Presenting on time services- Updating of services by managers- Employees acting as trustees
	Accessibility	<ul style="list-style-type: none">- Installing sufficient information boards and other signs for presenting services- Easy and fast accessibility to services- Providing the requested services on customer's first referral
	Competency	<ul style="list-style-type: none">- Employees' sufficient skills for performing tasks- Employees' expertise in the field of work- Employees' ability to perform tasks with high accuracy and Accuracy- Matching tasks with employees skills- Employees' concentration on main tasks and responsibilities- Employees' capability of proposing solutions for problems (Troubleshooting ability)
	Accountability	<ul style="list-style-type: none">- Customer's easy access to updated information related to services- Answering customers in the shortest time possible- Employee's eagerness to answer customers- Employees' feeling responsible toward customers' feedback
	Work speed	<ul style="list-style-type: none">- Employees' performance of tasks in the shortest time possible- Paying enough attention to accuracy of tasks- Applying new technologies- Avoiding Repeating Tasks
	Flexibility	<ul style="list-style-type: none">- Employees' non-resistance to organizational changes- Employee's capability of performing various tasks- Synchronous checking of management's requests- Employees' patience toward and acceptance of changes- Employee's various skills to encompass the changing needs of the organization
	Security	<ul style="list-style-type: none">- Employees' sufficient knowledge for answering customers- Employees' capability to work and use new technologies- Customer's trust in employees for receiving services- Customers' gradual trust in the organization due to appropriate behavior of employees
	Empathy	<ul style="list-style-type: none">- Paying attention to individual needs and requests- Caring for customers equally- Defining working time suitable for customers- Employees' personal attention to customers
	Professionalism	<ul style="list-style-type: none">- Distinguishing essential from non-essential tasks- Using scientific criterions in decision-making- Being aware of necessary performances- Being skilled and capable of performing tasks- Applying new methods in performing tasks- Using all individual skills and capabilities- Performing tasks with the highest rate of accuracy and lowest rate of mistakes
	Politeness	<ul style="list-style-type: none">- Being polite when performing tasks- Behaving in a friendly manner toward customers- Trying to solve customer's problems- Trying to shorten customers' waiting time- Listening to customers carefully

Table 3: Demographic information of physicians and nurses, and customers

Demographic information		Physicians and nurses		Customers	
		N	Percent	N	Percent
Gender	Man	292	67.9	300	60.7
	Woman	136	31.6	199	39.3
	Unanswered	4	0.5	1	0
Marital status	Married	307	71.4	270	53.5
	Single	117	27.2	229	46.4
	Unanswered	8	0.6	1	0.2
Age	20-30 years old	18	4.2	72	14.2
	31-40 years old	215	50.0	146	28.8
	41-50 years old	121	28.1	150	30.0
	51 years old and higher	74	17.2	130	26.8
	Unanswered	4	0.5	2	0.2

Content validity was used to determine the validity of the questionnaires (Quality Dimensions Questionnaire = 0.88, and Quality Requirements Questionnaire = 0.91). To determine the reliability coefficient, Cronbach’s alpha was used and an alpha of 85.1 and 77.5 was obtained for the Quality Dimensions Questionnaire and Quality Requirements Questionnaire, respectively.

The first sample group (physicians and nurses) was composed of 292 men and 136 women (4 people unknown), and 307 married and 117 single individuals (8 unknown). Moreover, 18 subjects in this group were 20-30 years old, 215 were 31-40 years old, 121 were 41-50 years old, and 74 were 51 years and older (4 unknown). The second sample group (customers and clients) was composed of 300 men and 199 women (1 unknown), and 270 married and 229 single individuals (1 unknown). In terms of age range, 72, 146, 150, and 130 participants in this group were 20-30,

31-40, 41-50, and 51 years and older, respectively (2 unknown) (Table 3).

In the present study, data were analyzed through descriptive and inferential statistics. Descriptive data were described using mean, frequency, and percentage of frequency. For inferential data, the Pearson correlation coefficient was used to determine the association between components of quality requirements and quality dimensions. The SPSS software (version 21, SPSS Inc., Chicago, IL, USA) was applied for analyzing data. Additionally, the significant level was considered as 0.05.

Results

Based on the results obtained from the 5-Degree Likert scale, the quality requirements variable with mean of 3.75 and quality dimensions variable with mean of 3.61 were at a higher than medium level (table 4).

Table 4: Explanation of measurements of quality requirement, quality dimensions, and quality requirements components

Variable/Component	Mean ± SD	Median	Min-Max
Quality requirement	3.751 ± 0.418	3.750	2.20-4.90
Quality dimensions	3.613 ± 0.403	3.745	2.48-4.67
Competitive requirement	3.427 ± 0.674	3.500	1.17-5.00
Accountability requirement	3.849 ± 0.469	3.800	2.00-5.00
Professional requirement	3.945 ± 0.596	3.800	1.40-5.00
Ethical requirement	3.931 ± 0.672	3.750	2.00-5.00

The association between variables was investigated using the Pearson correlational coefficient. Based on P-value ($P < 0.05$), we can claim that there is a significant and direct association between quality requirements and quality dimensions. Among the components of quality requirements, competitive requirement, professional requirement, and ethical requirement had direct and significant

association with quality dimensions variable. Nevertheless, no significant association was found between the component of accountability requirement and quality dimensions variable (with correlational coefficient of 0.008). Among the components of quality requirements, professional requirement had the strongest association with quality dimensions (Table 5).

Table 5: Association between the quality dimension variable and components of quality requirement

Variable	Quality dimensions	Quality requirements	Competitive requirement	Accountability requirement	Professional requirement	Ethical requirement
Quality dimensions	1					
Quality requirement	0.145**	1				
Competitive requirement	0.107*	0.627**	1			
Accountability requirement	0.008	0.604**	0.224**	1		
Professional requirement	0.131**	0.723**	0.116*	0.355**	1	
Ethical requirement	0.110*	0.638**	0.076	0.288**	0.470**	1

*significant level = 0.05; **significant level = 0.01

Moreover, the results achieved from regression analysis and determination coefficient showed that approximately 13% of variation in quality dimensions are distinguishable from quality requirement components ($F(4, 418) = 3.631$) ($P < 0.05$). The component of competitive requirement ($Beta = 0.121$) ($P < 0.05$) is a

predictor of and has a significant association with quality dimensions. Based on the partial correlation coefficient, among quality requirement components, competitive requirement has the strongest association with quality dimensions (Table 6).

Table 6: Regression of quality requirements components and quality dimensions

Variable	B	S.E	Beta	T	P	R ²	Partial correlation	F	P
Fixed	3.177	0.199	-	15.964	< 0.001**	-			
Competitive requirement	0.074	0.031	0.121	2.432	0.015*	0.118			
Accountability requirement	-0.075	0.047	-0.085	-1.592	0.112	0.134	-0.078	3.631	0.006**
Professional requirement	0.070	0.041	0.096	1.639	0.091	0.083			
Ethical requirement	0.049	0.034	0.080	1.449	0.148	0.071			

*significant level = 0.05; **significant level = 0.01

Discussion

Professional requirement refers to have commitment toward customers needs through using the most appropriate deployment (8). A better definition for professional requirement is a mechanism through which a person's constant and stable behavior emerges (20). Professional relationships in the medical environment Contains, relationships between physician and patient , patients' satisfaction, preserving their privacy, telling them the truth (honesty), as well as relationship between physicians and coworkers (21). Professional requirement is a human feature which can be defined as employees' heartfelt satisfaction and sense of responsibility toward specified tasks, such that, in the lack of supervision, individuals oblige themselves to perform tasks in the best possible way (22).

In recent years, the emphasis on physicians' and nurses' professionalism has been intensively increased, which means the healthcare system requires physicians and nurses who can have a successful relationship with their colleagues, and patients and their families (23). Therefore, one of the most challenging concerns of competent managers in different levels is how to prepare an appropriate context for the workforce engaged in all departments to inspire responsibility, ethics, and commitment to work among them (24). Moreover, ethical requirement includes respecting the organization's code of ethics, adhering to moral principles, and considering the customers that can lead to patients' satisfaction with the delivered services. These results are in agreement with those of the study by Salajegheh and Sistani (25).

Physicians' and patients' rights and responsibilities are the main notions of the field of healthcare. Patient's place in physician's system of thought and values is of great importance and is very effective in adherence to ethical and moral principles. Occupational conscience and responsibility, the necessary scientific and practical competency, and lack of patient abuse, both

physically and spiritually, are substantial issues which highlight the importance of medical mistakes and physicians' shortcomings (26). Medical mistakes are one of the basics of medical ethics which has increasingly obtained attention (27). Training ethics-bound medical experts is considered as a goal and requirement of medical education in the present era and implement in universities and scientific centers of the world. there are many arguments around teaching methods of medical ethics as well as training experts in the area (28) that highlight the necessity of focusing on ethics and moral values (29).

Experts believe that ethics is at the heart of suitable medical services and physicians, nurses, and all other medical personnel must adhere to ethical and basic professional principles that will be inherently prominent in a therapeutic relationship (30). Ethical requirement is one of the main components of providing high quality services to patients. To achieve this goal, employees in different service delivery levels must establish and arrange their activities and tasks based on common value principles through which will reveal their commitment and devotion to their job and society (31).

Experts call an environment ethical if its quality of work is appropriate. Such an environment can only be developed when managers trust their employees (32).

Competitive requirement includes providing better services in order to achieve higher working positions, have a sense of competition in tasks performance, and to obtain higher grades in work assessments or evaluations. Medical personnel's competition in performing assigned tasks can trigger an increase in quality of services. In addition, managers also need to play a stronger role in preparing an appropriate working environment both physically and mentally. Managers' knowledge of and control on management principals, creating true and suitable relationships and developing a feeling of trust between staff, commitment and attachment to the organization, and providing organizational

support and assistance are considered as useful tools for creating a favorable working environment which is prepared to embrace innovation, creativity, and changes (33).

Knowing how to motivate service employees in order to increase their performance, and consequently, guarantee the provision of high quality services for customers can enable the organization not only to maintain current customers, but also to attract new customers. Thus, through focusing on quality requirements, quality dimensions are not difficult to achieve (34).

In this study, the researchers dealt with some limitations in conducting the research, such as difficulty in distributing and collecting questionnaires because of the high number of subjects. Furthermore, convincing the subjects and ensuring them of the confidentiality of their information and their views about the organization was another problem.

As public hospitals have a large number of clients, it is suggested that managers of hospitals and healthcare centers pay special attention to the quality dimensions of services. Thus, it is essential for managers to have consideration for their customers and patients and meet their needs in the shortest time possible through cooperation with their colleagues when delivering services, have sympathy toward them, educate and reinforce their personnel's skills, and paying attention to patients' expectations.

Conclusion

The results showed that physicians and nurses must respect their job and their customers and increase their knowledge in the performance of their tasks. They should be trained to provide suitable services, and through respecting ethical principles and organizational code of ethics, they must be able to deliver a high quality service as quality is both a scientific and ethical issue. Fair competition between staff to obtain working opportunities and gain higher positions in the organization have a pivotal role in providing high quality services.

Achieving this goal requires sufficient knowledge and competency which results in the provision of a safe service in the sense of patients' trust in employees' skills and expertise.

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