

Analyzing perceived healthcare service quality on patient related outcomes

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Abstract

Purpose – Through the lens of a total quality management approach, this paper aims to examine the effects of health-care service quality on patient satisfaction, repatronage intention (RI) and positive word-of-mouth (PWOM) at a public hospital specialized in women and children's diseases. The contribution is to measure and compare patient expectations and perceptions related to the public health service quality.

Design/methodology/approach – A structured questionnaire was distributed to in-patients who stayed at a public training and research hospital for at least three days. To analyze the relationship between variables, multiple regression analysis was used. To test the difference between expected and perceived service quality, the paired-sample *t*-test was used.

Findings – The findings provided empirical evidence that perceived service quality significantly influenced patient satisfaction, RI and PWOM. The “responsiveness and reliability” factor was found to be the most influential on patient RI and PWOM. The “tangibility” dimension had the strongest influence on patient satisfaction.

Practical implications – The results reveal that a reliable and responsive service, empathic personnel behaviors and appropriate tangibles are the outstanding factors for high levels of patient satisfaction, RI and PWOM.

Originality/value – Although the concepts of perceived service quality, patient satisfaction, RI and PWOM are explored frequently in service literature, there are few researches that focus on specialized health services for women and children's diseases. By evaluating the service quality, it is hoped to provide an insight to health-care managers about the service quality dimensions and their relationship with patient satisfaction, RI and PWOM, specifically based on women patients.

Keywords Health service quality, Patient satisfaction, Quality management, Positive word-of-mouth, Public hospital, Repatronate intention

Paper type Research paper

Introduction

Implementation of total quality management (TQM) has been regarded as a significant tool for an efficient and effective health-care service. According to the TQM approach, patients are the most important factor to investigate because health-care service quality

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is mostly perceived, appreciated and transformed through patients and their needs (Lee *et al.*, 2013; Pakdil and Harwood, 2005). Furthermore, total quality practices in public health-care delivery systems are directly linked to patient satisfaction, rendering TQM a significant factor for sustainability and productivity.

The health-care sector has been criticized as being a late follower of total quality practices compared to other industries in Turkey. Especially, the companies operating in the Turkish private sector became the initiators of the TQM system. On the other hand, the health-care sector, acknowledged as a public service, embraced TQM only after recognizing the successful practice of private companies, especially within the manufacturing industry. Also, the complex structure of health-care services and the monopoly of public health-care delivery were counted as the main reasons behind the late TQM adoption.

The Turkish health-care sector started to be privatized in the 1980s, and TQM tools were put into practice by the new private health-care institutions in the 1990s. Working for the good of public health, this transformation also makes TQM a must for public hospitals to keep a standard, planned, responsive service with minimum costs and deficiencies. Over the past decade, Turkish public hospitals have been led by Ministry of Health programs and policies to achieve the required standardization and TQM practices.

In Turkey, the total quality programs are conducted according to Healthcare Ministry regulations, and health care is considered a public service in spite of the notable increase in the number of private hospitals established. Moreover, compared with their private competitors; the bureaucratic structure, together with heavy workloads induces public hospitals to fall behind their private competitors in service quality performance. As a result of these developments, recent quality programs have been conducted, and the efficiency of these efforts has become one of the main issues under debate in the Turkish health-care system.

To reveal the presence and outcomes of TQM practices in the Turkish health-care system, we have focused on a public hospital specializing in women and children's diseases (HWCD). Apart from the gender of patients, literature differentiates HWCD from the other public hospitals (Goktas *et al.*, 2005; Yagci and Duman, 2011). This type of hospital is differentiated from other hospitals by having women patients. Women's needs in receiving a service differ from men's in terms of their biological differences, lifestyle differences, attitude toward risk and institutional arrangements (De Jager and Grundling, 2007; Cafferata and Wilensky, 1983). Additionally, women's expectations and perceptions related to service differ from men's, as they have different biological and socio-psychological features (Sun and Qu, 2011).

Gender difference can be an influential factor when evaluating the dimensions of service quality. Although these concepts have been explored many times in service literature, it is seen that there are few studies that focus on women's perception of health-care services. Following the previous research implications, we have aimed to integrate theory and practice by presenting a theoretical background on health-care service quality and conducting an empirical research at a public HWCD in Turkey. Present research also sheds light on the relationship between service quality and patient-related outcomes in terms of the perceived service quality, repatronage intention (RI) and positive word-of-mouth (PWOM), focusing on women patients.

Theoretical background

There are many interpretations and definitions of TQM. According to the International Organization for Standardization (ISO 8402, 1994), TQM is the process whereby the:

[...]management approach of an organization centers on quality, based on the participation of all its members aiming at long run success through customer satisfaction and benefits to all members of the organization and the society.

TQM is a fundamental management philosophy that comprises eight crucial components: customer focus, quality management of suppliers, employee involvement, training, quality leadership, quality measurement, quality policies and process improvement (Calabrese and Scoglio, 2012). On the other hand, the concept of TQM has been related with different terms in recent years such as business excellence, six sigma, lean production, etc. (Dahlgaard-Park, 2011; Dahlgaard and Dahlgaard-Park, 2006). Even if the concept has been designated with different terms, two components of TQM, employee involvement and customer focus, emerge as important and timeless elements in any quality movement (Kim *et al.*, 2011). These are also vital for service firms characterized by a gradual interrelationship between customers and employees (Calabrese and Scoglio, 2012).

Following the customer focus standpoint, organizations face some difficulties in implementing adequate employee involvement for improving quality. In spite of the fact that TQM applauds the participation of employees (Tari, 2005), managers are not always successful in gaining the benefit of employee competence for enhancing quality (Beatson *et al.*, 2008; Zhongjun *et al.*, 2010). In fact, employees have specific knowledge that could be advantageous for organizations to attain the perception of technical and perceptual quality from customers in terms of their service experience. Thereby, to achieve continuous improvement, employee competencies and knowledge should be evaluated effectively (Zink, 2011) in accordance with the customer focus perception (Calabrese and Scoglio, 2012). At that point, service quality is a critical concept to illuminate the two most important components of TQM by involving employees in the quality process on the basis of customer demands. Along with this line of thinking, an emerging stream of work on TQM indicates that service quality brings some benefits to a service organization, such as raising productivity, cutting costs, maintaining customer loyalty, rising market share, etc. (Kandampully, 1998; Yang, 2006; Zeithaml *et al.*, 1988).

Service quality can be defined as the difference between what is expected and what is perceived when the service is used (Bolton and Drew, 1991a; Camilleri and O'Callaghan, 1998; Oliver, 1980). Perceived service quality is set in the mind as soon as the service is received (Wong and Sohal, 2002). Therefore, it can be stated that perceived service quality is an attitude or a general long-term assessment in perception. It is related to the value assigned through the difference between what is received and what has to be given in exchange (Golicic and Donna, 2003).

Parasuraman *et al.* (1985) support the notion that service quality is an overall evaluation similar to an attitude, a manner whereby people have positive or negative thoughts toward individuals, objects or events. The main point here is that objective quality is the same according to all, whereas perceived quality differs from person to person.

Perceived quality is different from objective quality; it is a form of attitude, related but not equivalent to satisfaction, and results from comparison of expectations with perception of performance. (Parasuraman *et al.*, 1985, p. 15) As a form of attitude, service quality is related to satisfaction that emerges as the difference between expectation and performance (Bolton and Drew, 1991b). From that perspective, it becomes difficult to draw a line between perceived service quality and satisfaction. Parasuraman *et al.* (1985, p. 15) explains the difference: “perceived service quality is a form of attitude, a long-run overall evaluation, whereas satisfaction is a transaction-specific measure”.

After Parasuraman *et al.* (1985) clarified the relationship between perceived service quality and satisfaction, they defined theoretically and indicated empirically the concept of perceived service quality on the basis of five dimensions: tangibility, assurance, responsiveness, reliability and empathy. These dimensions are defined as follows:

- (1) *tangibility*: the appearance of the physical environment, equipment, employees, etc.;
- (2) *assurance*: the employee expertise and knowledge for assuring trust for customers;
- (3) *responsiveness*: the ability to respond to customer demands accurately and timely;
- (4) *reliability*: the accuracy and consistency of service and ability to perform that service; and
- (5) *empathy*: the ability to understand other people’s feelings and problems.

There are plenty of studies defining and measuring perceived service quality through the five dimensions conducted in different fields in the service quality literature (Chen *et al.*, 2012; Kumar *et al.*, 2009; Ramseook-Munhurrun *et al.*, 2009; Theodorakis *et al.*, 2013). In the case of the health-care industry, the applicability of the dimensions, together with their relation to patient-related outcomes (patient satisfaction, patient safety, repurchase intention and word-of mouth [WOM]), health staff-related outcomes (work satisfaction and employee commitment) and management outcomes (hospital efficiency with reduced operating costs, hospital performance) are examined in various studies. Contributing to the previous studies, we aim to examine Parasuraman *et al.*'s (1985) service quality dimensions on patient satisfaction, PWOM and RI in a public health-care environment.

Patient satisfaction, repatronage intention and positive word-of-mouth

Satisfaction

The satisfaction taken from the specific service refers to “the post choice evaluative judgement” based on the “cumulative experience” of previously taken services (Yu *et al.*, 2005, p. 710). As in many sectors, satisfaction is an important indicator and measure of service quality in health-care institutions. Furthermore, patient satisfaction is thought of as a major tool when taking critical decisions about health-care services (Gilbert *et al.*, 1992). The basis of many service quality studies is the measurement of patient satisfaction or patients’ judgment about service quality (Babakus and Mangold, 1992; Carman, 1990; Reidenbach and Sandifer-Smallwood, 1990; Zeithaml *et al.*, 1993). It can also be stated that satisfaction is an attitude affected strongly by the perceived service quality (Cheng *et al.*, 2003).

Lin and Clousing (1995), in their analysis of TQM applications in Northern Louisiana hospitals, supported empirically that there is a link between TQM implementation levels and patient satisfaction. Questioning the accuracy of the European Quality Assurance model in identifying quality progress and business performance of hospitals, Kunst and Lemmink (2000) found that TQM improves patients' perception of service quality. Another study conducted by Raja *et al.* (2007) to outline health-care process quality status compared quality awards given to health-care institutions. The study findings showed that physicians, nurses, technicians and patients evaluated hospital service sub-factors differently, and that award dimensions had influences on service quality development, with the implication of an improvement in satisfying patients' needs and wants. Plus, customer satisfaction with service quality is empirically supported by the study. In line with the previous studies, Duggirala *et al.* (2008, p. 562), by examining the dimensions of patient-perceived total quality service and patients' satisfaction, argued that patient satisfaction is "an outcome of care in itself", linked to better patient compliance and better clinical outcomes.

Similarly, Kitapci *et al.* (2014) examined the effect of service quality dimensions on satisfaction together with the effect of satisfaction on WOM communication and RI. Their findings proved that satisfaction has a significant effect on WOM and RI, which are found to be strongly related in the study.

Following this study, we propose that:

H1. Perceived health-care service quality of the hospital is positively related to patient satisfaction.

Repatronage intention

The terms repurchase or RI, customer retention and loyalty are generally considered identical terms, but they are distinct constructs with different meanings. For example, Day (2000) states the difference between repeated behavior and loyalty in that the repeated behavior comes by sales, whereas the loyalty has to be earned by the service provider.

Service quality is an important indicator of the subsequent intentions and preferences of service takers (Bolton, 1998). Researchers often use the terms "repeat purchase intention", "repurchase intention", "purchase willingness" (Richardson *et al.*, 1994) and "service patronage" (York, 1993), as well as "repeat patronage", to mean customer retention (Ennew and Binks, 1996). Therefore, because of methodological reasons, we use the term RI instead of repurchase intention as our research is related to public medical service delivery.

Generally, RI is measured by asking customers if they would consider using the same health-care service again (Sherman, 1980). However, Rust *et al.*'s (1995) study indicates that repurchase intention does not always result in repurchase behavior. Rust and others advise researchers to take a statistical approach by looking at the previous recorded data.

According to Barber *et al.* (2011, p. 329), "consumer satisfaction can predict repeat patronage leading to brand loyalty and new consumers". As in Barber *et al.* (2011) research, there is an emerging stream of work explaining customers' RI at the root of perceived service quality (Grewal *et al.*, 2003; Lee *et al.*, 2009; Leong and Kim, 2002; Patterson *et al.*, 2013; Qin and Prybutok, 2009).

Among the studies exploring the relationship between service quality and repurchase intention, Zeithaml *et al.* (1996) found that service quality positively influenced repurchase intention. Taking into account the previous studies, we propose the following hypothesis:

- H2. Perceived health-care service quality of the hospital is positively related to patient repatronage intention.

Positive word-of-mouth

PWOM and negative word-of-mouth are mainly studied by management and marketing scholars in the service industry literature. This multi-disciplinary interest in the concept results in many different variables related to WOM, such as purchase probability (Casielles *et al.*, 2013), commitment (Ranaweera and Menon, 2013), satisfaction (Hong and Yang, 2009; Maxham, 2001) and service quality (Chaniotakis and Lympelopoulou, 2009; Kuo *et al.*, 2013; Ng *et al.*, 2011).

Narayandas and Bowman (2001, p. 296) define WOM as “whether customers tell anyone about their experience and how many people are told if a customer engages in word-of-mouth behavior”. PWOM means that the customer recommends the service to others by her/his positive evaluation of the service. PWOM is also described as a social behavior (Anderson and Mittal, 2000) affecting potential customer behavior. The previous studies also note that not every satisfied customer will have the orientation to recommend the satisfying service; conversely, the tendency to transfer bad experiences is observed more frequently (Wang, 2011). Especially in the health-care sector, patients may not have enough experience to assess the services and rely on others’ recommendations. Hence, former patients’ ideas about service experiences are noted as a significant sign (Narayandas and Bowman, 2001) for the health-care service preference.

Parasuraman *et al.* (1991, 1988) prove empirically that there exists a positive significant relationship between customers’ perception of service quality and their willingness to recommend the service. In their empirical study, De Matos and Rossi (2008) take WOM as a central construct and study the antecedents and moderators of WOM. Service quality is determined as one of the antecedents of WOM, and test results showed that the higher (lower) the perceived quality, the higher (lower) the WOM activity of the customers.

Evaluating the concept of service management and the perceived service quality framework, we propose the following hypothesis:

- H3. Perceived health-care service quality of the hospital is positively related to patient PWOM.

Methodology

The aim of the study

The problem statement of the study is to analyze how health-care service quality at a public training and research (HWCD) is perceived by patients and how this perception affects patients’ satisfaction, PWOM and RI in relation to the health-care services taken. In line with the inquiry, it is hoped to ascertain if the service quality provided by the hospital can meet patients’ service quality expectations. Moreover, the service quality

sub-dimensions that most affect patient satisfaction and attitudes are examined in the study.

Sample

Our research focuses on an HWCD to illustrate the patients' perceived service quality, satisfaction, RI and PWOM. Our sample is unique in two ways. The first specialty of our sample is that by focusing on a public training and research HWCD, we hope to elucidate how women patients evaluate the health-care services. The second attribute is that there are only two hospitals for gynecological and pediatric diseases in Istanbul, Turkey. So, investigating one of them makes it possible to generalize our research findings about the service quality and its related outcomes to HWCD in Istanbul, Turkey.

The in-patients who stayed at the public training and research HWCD for at least three days were taken as the sample of the study. The data for the study were collected through a questionnaire. A total of 173 questionnaires were distributed, and 126 patients participated in the study, a response rate of 73 per cent.

The measurement instruments

The independent variables of the study take their origins from [Parasuraman et al.'s \(1988\)](#) study, and the sub-dimensions related to service quality are tangibles, reliability, responsiveness, assurance and empathy. The patient satisfaction, RI and PWOM constitute the dependent variables of our study.

The expected and the perceived service quality were measured through [Carman \(1990\)](#) and [Cronin and Taylor's \(1994\)](#) adaptation of Parasuraman's SERVQUAL scale (1988) to health-care services. As in [Schoenfelder et al.'s \(2011\)](#) research, RI, PWOM and patient satisfaction were measured through single-item questions.

The data collected were analyzed through SPSS 16 program. In the analysis process, first, the frequencies of the demographic dimensions are examined. Later, factor and reliability analyses are conducted to find out which dimensions are most chosen by the participants in the research. Finally, multiple regression analysis is used to examine the relationship between variables, and a paired-sample *t*-test is used for comparing the expected and perceived service quality.

Findings

According to demographic data, of the 126 respondents, 84 per cent were females, 53.6 per cent were between the ages of 26 and 35, 64.6 per cent were primary school graduates, 68.5 per cent were housewives and 61 per cent were child in-patients ([Table I](#)).

In total, 42 participants (35.3 per cent) evaluated health services taken at the Woman and Child Diseases Research and Educational Hospital as "very good", whereas only four and eight patients evaluated the services as "bad" and "very bad", respectively. Thus, the general satisfaction level of the patients was found to be very close to "very good".

Furthermore, 82 patients (67.8 per cent) stated that they would consider using health services from the hospital again, whereas only one patient claimed that she had no intention of taking the services. Also, 9.1 per cent of the participants stated that it did not matter whether they took services.

Of all the patients, 60.8 per cent responded that they would recommend the services provided at that hospital. On the other hand, it is worth noting that none of the participants agreed with the statement "I strongly do not recommend", and only one

Variable	No. of patients (%)	Perceived healthcare service quality	
<i>Gender</i>			
Male	20 (16)	485	
Female	105 (84)		
<i>Age (years)</i>			
Up to 25	33 (26)		
26-35	67 (53.6)		
36-45	16 (13)		
46-55	54		
Above 55	4 (3)		
<i>Education</i>			
Primary education	77 (64.6)		
High school	30 (24.8)		
Associate degree	12 (9.9)		
University	2 (1.7)		
<i>Occupation</i>			
Housewives	63 (68.5)		
Other	29 (31.5)		
<i>Income</i>			
Under 1000 TL	67 (67.3)		
1000-2000 TL	28 (27.7)		
Above 2000 TL	5 (5)		
<i>Department</i>			
Pediatrics	63 (61)	Table I. Demographics of the sample	
Gynecology	24 (23)		

patient chose the option of not recommending the hospital's services. In other words, the majority of the patient participants (76 people) replied that they would recommend the services of that hospital.

Comparing expected and perceived service quality through paired sample *t*-test

Before taking the treatment, each patient has an expectation about the health-care delivery. With that expectation in mind, the patient undergoes the treatment, and, after that, the patient's perception of that service is formed. If the patient finds the service performance closer to what (s)he expected, the service quality perception would be high. To take it one step further, the perceived service quality level is accepted as an important indicator of satisfaction (Parasuraman *et al.*, 1988).

In line with this theoretical background, patients' expectations and their service quality perceptions were compared using a paired sample *t*-test of the SERVQUAL scale.

The items in Table II are listed from the lowest to the highest value. The patients' expectations of the tangibles such as food served, room cleanliness and room quietness were found to be most poorly met when compared to other service quality variables. On the other hand, "in the process of discharge, expectation of prompt service from hospital

Table II.
The comparison of
the health-care
services' features
(comparing patient
expectations and
perceptions)

Item no.	Features of hospital services	Expectation Av. (E)	Perception vs (P)	Difference (P-E)	<i>t</i>	Significance (two-tailed)
I5	Taste of the food	5.0849	3.3113	-1.7735	-3.644	0.000
I9	Availability of visitor parking	4.5140	2.7477	-1.7663	-12.42	0.000
I4	Cleanliness of the toilets	4.8108	3.7117	-1.0991	-9.005	0.000
I8	Quietness of the rooms	4.6607	3.6518	-1.0089	-9.829	0.000
I6	Temperature of the food	4.5926	3.6852	-0.9074	-7.833	0.000
I3	Cleanliness of the patient rooms	4.7807	3.9123	-0.8684	-8.074	0.000
I2	Physical appearance of the facilities	4.5221	3.7876	-0.7345	-7.033	0.000
I1	Up to date equipment and technology	4.5893	3.8929	-0.6964	-6.184	0.000
I14	Telling patients exactly when services will be performed	4.6239	3.9541	-0.6697	-6.630	0.000
I25	Trusting the billing process	4.6667	4.0088	-0.6578	-8.366	0.000
I3	Accuracy of the charges	4.6909	4.0909	-0.6000	-7.721	0.000
I24	Believing to be recovered well before discharged	4.6429	4.0446	-0.5982	-6.775	0.000
I29	Politeness of the employees during housekeeping process	4.5752	4.0177	-0.5575	-5.827	0.000
I28	Politeness of the employees during admissions procedure	4.6636	4.1091	-0.5545	-6.430	0.000
I11	Performance of the services promised by a certain time by the staff	4.6667	4.1204	-0.5463	-6.981	0.000
I12	Accuracy of patients' records	4.7069	4.1724	-0.5344	-7.333	0.000
I32	Well-treatment to patient visitors	4.5000	3.9732	-0.5267	-4.829	0.000
I21	Clarity of the treatment explanation	4.7759	4.2759	-0.5000	-6.497	0.000
I26	Feeling safe in their transactions with the staff	4.6404	4.1404	-0.5000	-7.066	0.000
I22	When discharged. disclosure of the patient's condition	4.7179	4.2308	-0.4871	-6.632	0.000
I19	Staff's addressment to customers' questions appropriately about the discharging process	4.6724	4.1897	-0.4827	-6.918	0.000
I31	Cheerfulness of the nurses	4.6757	4.1982	-0.4774	-5.451	0.000
I18	Responsiveness of the staff to patient needs	4.6525	4.1780	-0.4745	-6.598	0.000
I7	Nurses' respect to patient privacy	4.7297	4.3153	-0.4144	-5.437	0.000
I23	Trusting hospital nurses	4.7304	4.3304	-0.4000	-5.490	0.000
I30	Politeness of the nurses	4.5982	4.2054	-0.3928	-4.454	0.000
I27	Feeling safe that nurses are knowledgeable	4.6404	4.2544	-0.3859	-5.351	0.000
I20	Addressing patients' questions appropriately about any procedure	4.5780	4.1927	-0.3853	-5.317	0.000
I10	Timing of the meals	4.6036	4.2523	-0.3513	-5.530	0.000
I34	Expecting nurses to give their personal attention to patients	4.6239	4.3486	-0.2752	-3.263	0.001
I16	Expecting prompt services from nurses when the patient needs them	4.5676	4.3423	-0.2252	-2.759	0.007
I17	Expecting prompt service from employees of the hospital for the admission operation	4.4696	4.2696	-0.2000	-2.309	0.023
I33	Expecting employees to know what patients need from them	4.5446	4.5268	-0.0178	-0.39	0.969
I15	When discharged. expectation of the prompt service from employees of the hospital for the discharging operations	4.4414	4.5315	0.0901	0.245	0.000

staff for the discharging operations" (Item 15) is the only variable that has a higher value than expected. All other variables have values lower than expected.

When examining *t*-test results, it is evident that most of the expected and perceived items have close values and the participants mainly chose the option "mostly agree". According to the significance levels, except Item 33, there is a

meaningful difference between what was expected and what was perceived as hospital service quality (Q33; $p = 0,969$). All p -values, except that of Item 33, are lower than the significance level ($p < 0.05$).

Results

The Kaiser–Meyer–Olkin (KMO) value of the service quality scale is 0.902, and Bartlett’s test of sphericity is 0.000 ($0.000 < 0.05$), meaning that there are patterns of correlations among the variables and factor analysis can be conducted for the variables.

Through factor analysis, items with the lowest factor loadings, factors listed under more than one factor and single items are eliminated. After factor and reliability analyses, four factors with the KMO value 0.902 explain 63.3 per cent of the perceived service quality.

Factor loadings of the items to the related factor, percentage variance for each factor and reliability coefficients of the items loaded on each factor are presented in Table III.

The factor structure has three main factors, namely, reliability and responsiveness; empathy; and tangibility. The first factor, reliability and responsiveness, was formed as a synthesis of responsiveness and reliability, underlining the fact that patients require a timely, responsive and trustful service. The items are related to keeping promises, answering questions concerning immediate care and ability to rely on the personnel. The second factor, empathy, connotes the behavioral attitudes of personnel and how they approach the patients’ feelings; and tangibility, the third factor, is related to room facilities, equipment and technology.

The multiple regression analysis showed that $H1$ is accepted, and the perceived service quality explains 26 per cent (Adj. $R^2 = 0.258$) variation in the overall patient satisfaction. Regressing the three dimensions together, it is demonstrated that “tangibles” is the only dimension influencing patient satisfaction ($p = 0.036$). The other two factors are not statistically significant (reliability and responsiveness = 0.816; empathy = 0.135). When analyzing the dimensions singly through simple regression, once again, “tangibles” is the dimension having the most significant impact on patient satisfaction (adjusted $R^2 = 22.2$ per cent; $p = 0.000$). “Empathy” is the second most influential factor (adjusted $R^2 = 19.7$ per cent; $p = 0.000$), followed by “responsiveness and reliability” (adjusted $R^2 = 16.8$ per cent; $p = 0.000$).

$H2$ is accepted, as the service quality dimensions collectively explain a total of 43 per cent of RI (adjusted $R^2 = 43.0$ per cent; $p = 0.00$). The most influential dimension on patient satisfaction is “reliability and responsiveness” (adjusted $R^2 = 44.9$ per cent; $p = 0.000$), followed by “empathy” (adjusted $R^2 = 40.6$ per cent; $p = 0.000$) and “tangibles” (adjusted $R^2 = 30.2$ per cent; $p = 0.000$). When regressed together, it is found out that the strong influence of “reliability and responsiveness” surpasses other two dimensions by being the single dimension affecting RI (adjusted $R^2 = 44.6$ per cent; $p = 0.001$).

The service quality explains 17.8 per cent variance of PWOM (adjusted $R^2 = 0.178$; $p = 0.000$); hence, $H3$ is also accepted. All three dimensions significantly influenced the dependent variable, and the most influential dimension is “reliability and responsiveness” (adjusted $R^2 = 22.3$ per cent; $p = 0.00$). “Empathy” (adjusted $R^2 = 8.6$ per cent; $p = 0.000$) and “tangibles” (adjusted $R^2 = 6.3$ per cent; $p = 0.000$) are found to affect PWOM. All the results of the regression analyses conducted are indicated in Table IV.

Factors and abbreviated items (no. of items and mean)	Factor loadings	Variance explained (in %)	Cronbach alpha (α)
<i>Factor 1: reliability and responsiveness (12)</i> (Mean = 4.17)			
I21 Clear information about the treatment	0.797	29.629	0.959
I17 Expecting prompt service from employees of the hospital for the admission operation	0.796		
I18 Personnel's responsiveness to patient needs	0.794		
I19 Personnel's addressment to customers' questions appropriately about the discharging process	0.791		
I20 Addressing patients' questions appropriately	0.742		
I11 Performance of the services promised by a certain time by the staff	0.716		
I14 Telling patients exactly when the services will be performed	0.711		
I22 When discharged. disclosure of the patient's condition	0.694		
I23 Trust in nurses	0.689		
I26 Feeling safe in their transactions with the staff	0.655		
I27 Feeling safe that nurses are knowledgeable	0.649		
I12 Accuracy of patients' records	0.614		
<i>Factor 2: empathy (6)</i> (Mean = 4.14)			
I30 Politeness of the nurses	0.787	17.487	0.930
I31 Cheerfulness of the nurses	0.779		
I32 Well-treatment to patients' visitors	0.737		
I34 Expecting nurses to give patients their personal attention	0.655		
<i>Factor 3: tangibles (6)</i> (Mean = 3.9)			
I1 Up-to-date equipment and technology	0.859	16.176	0.883
I2 Physical appearance of the facilities	0.799		
I3 Cleanliness of the patient rooms	0.677		
I4 Cleanliness of the toilets	0.615		
I7 Nurses' respect to patient privacy	0.606		
I8 Quietness of the rooms	0.560		
<i>KMO = 0.902</i>		63.342	
<i>χ^2 Bartlett's Test</i>			
<i>p = 0.000</i>			

Table III.
Factor analysis and
reliability tests

Table IV.

Results of the
regression analyses

Dependent variable	Independent variables	Standardized beta (<i>t</i> -value)	<i>R</i> ² (adjusted <i>R</i> ²)	Significance (two-tailed)
Satisfaction	Service Quality	5.557	0.258	0.000***
Satisfaction	Reliability and Responsiveness	4.582	0.168	0.000***
Satisfaction	Empathy	5.048	0.197	0.000***
Satisfaction	Tangibles	5.569	0.222	0.000***
RI	Service Quality	8.139	0.430	0.000***
	Reliability and Responsiveness	9.076	0.449	0.000***
	Empathy	8.411	0.406	0.000***
RI	Tangibles	6.846	0.302	0.000***
PWOM	Service Quality	3.736	0.178	0.000***
	Reliability and Responsiveness	2.969	0.223	0.000***
	Empathy	2.709	0.086	0.009**
PWOM	Tangibles	2.441	0.063	0.017*

Notes: Significance levels (two-tailed): * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; $n = 126$

Discussion

Enforced by the competitive forces in the industry, health-care institutions adopted TQM practices for satisfied service users, “providing the best care at the lowest costs” (Brashier *et al.*, 1996, p. 32). The health institutions acknowledge their differences from the other service sector organizations through implementing TQM practices and tools in their industry-unique manner (Komashie *et al.*, 2007). TQM implementation in the health-care context covers professional knowledge, competence, application of appropriate technology and the patients’ perception of the type and level of care they received.

In our study, the factor analysis results show a variation from the five-factor model of the original SERVQUAL (Ladhari, 2009). This results echoed Yesilada and Direktor’s (2010) study findings, as their factor analysis revealed a three-factored structure; reliability-confidence, empathy and tangibles. We argue that variation from the original model is related to our sample and our research setting HWCD, and these three factors can be used in similar health-care service quality studies in the future.

In our findings, patients evaluated the health services they received very positively when asked about overall satisfaction, RI and PWOM. The acceptance of *HI* of the study confirms the contention of Parasuraman *et al.* (1985, 1988) that the higher the perceived service quality, the higher the customer satisfaction. Similarly, Gooding (1999), in his study on the correlation between medical service quality and its value with 260 test medical service consumers, explains that a medical service consumer assesses the value through service quality. Sivakumar and Srinivasan’s (2010) concept of “encounter satisfaction”, which is satisfaction that consumers experience with a particular service incident, and overall satisfaction with the service provider are dependent on the number of service encounters with different parts of the organization or different employees within the organization over multiple service experiences. Furthermore, Mooradian and Oliver (1997) underlined that satisfied customers can

increase profitability by providing new referrals through PWOM, acting as unpaid ambassadors for the service provider's business.

When health care is taken into consideration, the most important expectation is that service is given accurately and reliably. Our research showed that the "reliability and responsiveness" dimension was of primary importance, and "tangibles" was the third most important factor for patient repatronage and PWOM. A noteworthy finding was that patients evaluated "tangibles" as the most important indicator of satisfaction. According to *t*-test results, among the tangible items, the equipment and the room facilities had the greatest impact on satisfaction. The importance of tangibles on satisfaction has also been confirmed by [Gulmez and Kitapci's \(2008\)](#) study, revealing that "tangibles" is the main factor to explain in-patient satisfaction. It becomes clear that the feature of medical instruments and the appearance of the rooms are appreciated as significant signs of health-care service quality in our case of a public HWCD. In the study, expectations related to the physical attributes of health care can also be related to the demographic qualities of the participants. The participants are mostly from the low-income segment that cannot afford to take private health-care services and instead pursue public services. Therefore, we can assume that the socio-economic conditions of the participants may influence their evaluation of service quality.

The participants in our study identified "empathy" as the second indicator for satisfaction and RI. The relationship between health-care personnel and patients is very intimate and secluded. Therefore, when health care is taken into consideration, the personnel should give special importance to patients' fragile conditions and behave in an empathic manner. Also, [Sivakumar and Srinivasan's \(2010\)](#) results confirm our findings, as "quality dimensions assurance, reliability, responsiveness, and empathy are strong determinants of hospital consumers' satisfaction with hospital services". Moreover, the *t*-tests make it clear that the participants' expectations related to the behaviors of health-care personnel were not properly met. The reason behind this finding could be that the public hospital personnel, compared to those in private health-care institutions, offer less care and concern to the patients because of the heavy work load.

In this study, we measured patients' satisfaction in two distinct ways. One was to evaluate the difference between the expected and perceived service quality, and the other was to ask respondents about their general satisfaction concerning the services they received. When generally asked, patients reflect satisfaction; however, the comparison between the expected and perceived service did not support their reassurance with the services. The service quality was evaluated lower than the average expected, as the "tangible" items' values of paired *t*-tests turned out to be far from meeting patient needs. On the other hand, in the regression analyses, "tangibles" was the most important factor for satisfaction.

The finding of "tangibles" as the most influential factor not only marks the importance of the physical environment of the healthcare organization for the service users but also supports many empirical studies providing evidence of the influence of physical attributes on patient satisfaction. [Bitner \(1990, 1992\)](#) is one such researcher, arguing that the physical atmosphere of a work environment affects both employees and customers of the workplace in question. Her introduction of the term "servicescape" (1992) to the literature underlines the physical environment's influence in reflecting the service quality to the audience. In

terms of health-care settings, [Dagger and Sweeney \(2007\)](#) discuss that tangibles are mostly evaluated at the beginning of the health-care service experience and are significantly more important to new customers. Similarly, [Karassavidou *et al.* \(2009\)](#) explain the effect of tangibles on satisfaction levels with the argument that lacking the ability to evaluate the expertise of the physicians, patients are more inclined to assess the tangible elements of the health-care service. In line with the previous studies and our study findings, we can suggest that positively assessed tangible service elements such as cleanliness and quiet rooms can also lead to positive evaluations of health-care service quality.

Conclusion and implications

The never-ending search for health-care service quality has long been on the agenda of health-care managers and administrators. Our study findings demonstrate significant criteria for service quality evaluation and its related outcomes for public health services. First of all, public health-care administrators should pay special attention to offering accurate, reliable and responsive services to their patients. Responsiveness has always been a weak part and a factor criticized negatively in public health-care delivery organizations when compared to their private counterparts. It becomes obvious that public health-care service users give more importance to an accurate and reliable service than other factors when receiving a health-care service. It is important for patients to feel secure and confident as they hand their health to professionals assuming that they would not be deceived mentally, morally or financially.

Another implication is that the health-care service providers should give special care to tangibility when they are offering their services. Tangibility in public health care is also proved to be an important indicator for patient satisfaction; hence, service quality of food served, parking facilities, room cleanliness and equipment used needs permanent enhancement and control. The finding of tangibility as an important factor can also be related to the specifics of our sample and the service they use. That is to say, women patients evaluated tangibility as an important factor when they were taking gynecological and pediatric health services.

Our findings are in line with many studies that have found out a strong association between perceived service quality and patient satisfaction, PWOM and repatronage. In addition, the findings of this study offer reasonable support to the model of behavioral consequences of service quality developed by [Zeithaml *et al.* \(1996\)](#), as five service quality dimensions predicted, to a modest extent, the hospital consumers' satisfaction, RI and PWOM communication.

Turkish public health care has always been criticized as being administered by physicians not experienced or educated in public service management. Therefore, a final implication is that to deliver and improve the public health-care service, public policy legislators should envision TQM as a continuous process and take encouraging action to provide accurate, reliable and responsive services. Moreover, to increase the patient satisfaction, RI and PWOM, continuous education plans and programs should be introduced for improved hospital management.

Examining a public research and training HWCD for our study renders it difficult to make generalizations about the service quality offered by the Turkish public health-care system. The number of public hospitals examined can be increased, and

dimensions related to physicians, their medical knowledge and expertise can also be studied as service quality dimensions in the further studies. Furthermore, researchers in the further studies can examine other types of hospitals – private, university or educational research hospitals – and make comparisons to study the service quality dimensions and their effects on patient satisfaction and intentions.

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