

قياس جودة الخدمة في المستشفيات:

دراسة إحصائية في مستشفى جامعة حلب

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الملخص:

الهدف الأساسي من هذا البحث هو التعرف على المكونات الأساسية لجودة الخدمة في المستشفيات العامة الحكومية في الجمهورية العربية السورية و بالتالي اختبار الفجوة بين الخدمة المتوقعة والخدمة الفعلية لكل أوجه الخدمات المقدمة من قبل هذه المستشفيات. للوصول إلى هذا الهدف تم استخدام مقياس servqual المطور من قبل pareasuman et al 1988 والمؤلف من خمسة عناصر. تتألف العينة المدروسة من 40 مريضاً قاموا بالإجابة على الأسئلة المطروحة عليهم تبعاً للعمر والجنس وعدد مرات الزيارة للمستشفى. تفيد نتائج هذا البحث بأن هناك فجوات سالبة للأبعاد الخمسة لجودة الخدمة في المستشفيات العامة في مدينة حلب. هذه النتيجة تبين بما لا يدع مجالاً للشك الحاجة لتعزيز جودة الخدمات في هذه المستشفيات من أجل تحقيق رضا العملاء. كما بينت هذه الدراسة أن البعد الأكثر سلبية بين الأبعاد الخمسة هو بعد الضمان.

كلمات مفتاحية: جودة الخدمة، المستشفيات، فجوة الخدمات.

1. Introduction :

Ensuring the safety of patients and personnel and improving quality have become important objectives for public and private hospitals in developed and developing countries alike, in response to research highlighting poor quality. There is a general belief, that there are effective methods to improve quality.

Hospitals today are increasingly expected by governments, funders and patients to improve quality. There are many approaches to improve quality and diverse strategies to encourage hospitals to do so. However, the first step to do so is to measure the present service quality. Health care services provided by hospitals have a distinct position among other services due to the highly involving and risky nature of services and the general lack of expertise possessed by consumers (patients). Research has shown that delivering quality service has significant relationship with customer satisfaction (Johns et al; 2004 Kara et al., 2005). Customer satisfaction is the optimal goal for service provider, therefore, it is vital for companies to build a long life relationship with customer by working hard on service performance to meet or exceed customer expectation.

2. The importance (objectives) of this research

The importance of this research derive from the health care service importance to people as it reflects the health level of a country which in turn shows the developed standard has been achieved in this country. The goals of the study were as follows:

- 1- Identify customers point of view of service quality at public hospitals
- 2- Determine the extent to which patient satisfaction can be met by hospital management.
- 3- Determine which is the most important factors of service quality dimensions.
- 4- Recommend tools and procedures that can improve the service quality at the Syrian hospitals.

3. Research problem

The health care system in Syria faces many problems including, improving quality, increase access, reducing cost and competition. Therefore, keeping a high level of quality can be considered as an important factor in determining patient satisfaction. Spending a large sum of money on buying new machines and instruments,

increase the patient care and keeping the trust and assurance would have a major influence on customer satisfaction.

4. Previous studies

(Direketor, Yesilada, 2010) [1]

The study aimed to test the dimensionality of the SERVQUAL instrument in Northern Cyprus health care to assess the service quality provided in public and private hospital in Northern Cyprus and to identify the service quality dimensions that play important role on patient satisfaction, the study showed there are three dimensions of quality (Tangibles, Reliability, Empathy) and the Gap analysis showed that private hospitals have smaller gaps than public hospitals in all service quality three dimensions.

(Aziz, Norzalita, 2008) [2]

The study aimed to explore the dimensions of service quality for hospital services in Malaysia and subsequently examine the gap between the expectation and perception on the various aspects of the services, the study showed there are four dimensions of quality tangible, empathy, reliability and responsiveness, and the gap analysis between service expectations and perceptions showed that all scores for expectations were lower than their perception scores, indicating that there are a lot of service improvement efforts need to be carried out to enhance the quality of services rendered by hospitals in Malaysia.

(Arasli, et al, 2008) [3]

The study aimed to develop and compare some determinants of service quality in both the public and private hospitals of Northern Cyprus where there is considerable lack of quality in both the public and private hospitals of Northern Cyprus, the study finding six factors regarding the service quality as perceived in both public and private Northern Cyprus hospitals. These are: empathy, giving priority to the inpatients needs, relationships between staff and patients, professionalism of staff, food and the physical environment and the various expectations of inpatients have not been met in either the public or the private hospitals.

(Hani, et al, 2008) [4]

The study aimed to identify the service quality factors that are important to patients, and examined their links to patient satisfaction in the context of Bangladesh, evaluations were obtained from patients on several dimensions of perceived service quality including

responsiveness, assurance, communication, discipline, and baksheesh. Using gap analysis (expectation and perception) and one sample t-test, significant outputs were found between the five dimensions and patient satisfaction.

(Wazzan,Dania, 2007)[5]

In her study Wazzan has examined the relationship between satisfaction and patient loyalty in Lebanon and found that factors that increase patient satisfaction differ from those that influence a patient's intention to return, which in turn differ from those that influence patient's decision to come back or to defect to another hospitals.

The difference between this research and previous research is that the focus of this study would be on identifying the gap between management perception of service quality and customers perception of the same issue. In addition to assess the most important factor that affect customer perception of service quality.

5. Research methodology

The sample data were collected through a survey. The survey was conducted through an anonymous self-completed structured questionnaire. The questionnaire consists of 22 items representing the five dimensions of service quality(SERVQUAL)scale.

The questionnaire was administrated to a sample of 40 patients at Aleppo University Hospital. To test the hypothesis, paired sample test was used in order to examine the importance and significant of the service gap. The statements of service quality scale were measured on LIKERT SCALE form 1-7. SPSS has been used as a statistical tool in identifying the results. Expectations measures what is anticipated in an ideal service (on a 7-point scale). Perceptions then measures those aspects of the service as actually delivered or experienced.

The Gap Score for each dimension is calculated by subtracting the Expectation score from the Perception score. A negative Gap score indicates that the actual service (the Perceived score) was less than what was expected (the Expectation score).

6. Service quality dimensions

Service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either. There are a number of different "definitions" as to what is meant by service quality. One that is commonly used defines service quality as the extent to which a service meets customers' needs or

expectations. Service quality can thus be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs.

SERVQUAL examines five dimensions of service quality: these are as follows:

- *Tangibles* Physical facilities, equipment and appearance of personnel.
- *Reliability*. Ability to perform the promised service dependably and accurately.
- *Responsiveness* Willingness to help customers and provide prompt service.
- *Assurance* (including competence, courtesy, credibility and security). Knowledge and courtesy of employees and their ability to inspire trust and confidence.
- *Empathy* (including access, communication, understanding the customer).
Caring and individualized attention that the firm provides to its customers.

Dimension	Element
Reliability	Seen according to expectations Solved the problem Given/received the required treatment
Responsiveness	Hospital staff gives prompt attention Hospital staff do not keep one waiting Hospital staff help according to the need
Assurance	Hospital is trustworthy Doctor is qualified Hospital staff are courteous
Empathy	Hospital staff are caring Given /get individual attention Doctor calls person by name
Tangibles	Doctor's office is clean Hospital staff use standard instruments Doctor's prescription is easy to understand.

For each dimension of service quality above, SERVQUAL measures both the expectation and perception of the service on a scale of 1 to 7, Dimensions:

Statements 1-4 Tangibles
Statements 5-9 Reliability
Statements 10-13 Responsiveness
Statements 14-17 Assurance
Statements 18-22 Empathy

7. Hypothesis of the study:

The Main Hypothesis:

H1: there isn't a significant difference between the expected quality of service and the precept quality of service in the public hospitals.

This main hypothesis can be divided to 5 sub-hypothesis:

H1-1: there isn't a significant difference between the expected quality of service *tangibility* and the precept quality of service *tangibility* in the public hospitals.

H1-2: there isn't a significant difference between the expected quality of service *reliability* and the precept quality of service *reliability* in the public hospitals.

H1-3: there isn't a significant difference between the expected quality of service *responsiveness* and the precept quality of service *responsiveness* in the public hospitals.

H1-4: there isn't a significant difference between the expected quality of service *assurance* and the precept quality of service *assurance* in the public hospitals.

H1-5: there isn't a significant difference between the expected quality of service *empathy* and the precept quality of service *empathy* in the public hospitals.

Descriptive analysis table (1)

Items	Frequency	Percentage
Gender:		
Male	23	57.5
Female	17	42.5
Age:		
LT 15	3	7.5
15-30	22	55.0
31-45	7	17.5
46-60	2	5.0
MT60	3	7.5

Level of Education:		
Less than High School	10	25.0
High School	5	12.5
Technical Institute	1	2.5
University	16	40.0
above University	8	20.0
social status		
Married	14	35.0
Single	26	65.0
number of times the patient visited the hospital		
1.0	3	7.5
2.0	6	15.0
3.0	5	12.5
4.0	4	10.0
5.0	3	7.5
7.0	1	2.5
8.0	1	2.5
10.0	2	5.0
15.0	1	2.5
Missing System	14	35.0

Analyses on the demography of patients showed that proportion of males to females was almost equal, and 55 % of our sample lays in the most frequent age group 15 to 30 years. The next frequent age group is 31 to 45 which formulates around 17.5% of our sample. The remaining 27.5% of our sample lays in the remaining age groups, The frequencies of education levels in the sample realized that 40 % of the patients in the sample has reached university which is the most frequent educational level. The following most frequent educational level is less than high school which covers 25% of our sample. Next we have 20 % of the patients in the sample are above university (i.e. 8 patients). Then we have 12.5% of the patients in the sample reached high school. Finally, the least frequent education level is the technical institute which formulated 2.5% on the sample and only 1 patient was in this educational level. In the sample we studied 35% of the patients

were married where as 65% of the patients were single, and in our sample we realized that 22.5% of it visited the public hospital 2 times or less. The most frequent visit number is 2 times.

8. Factor analysis for service quality Dimensions.

Table(2) factors analysis

Items	Factors loading	Variance Explained	Cumulative Variance Explained
FACTOR 1 : Tangible 1- Excellent hospitals /clinics will have modern looking equipment. 2- the physical facilities at excellent hospitals will be visually appealing. 3- personnel at excellent hospital clinics will be neat in appearance. 4- Materials associated with service (such as pamphlets or statement) will be visually appealing in an excellent hospital.	0.774 0.670 0.650 0.773	40.15	40.15
FACTOR 2: Reliability 1. when excellent hospitals/clinics promise to do something by certain time they will do so. 2. when a patient has problem excellent hospitals/clinics will show sincere interest in solving it. 3. excellent hospitals/clinics gets things right the first time. 4. the hospital /clinics provides it services at the time it promises to do so. 5. the hospital /clinics insists on error-free records.	0.774 0.670 0.609 0.748 0.748	8.35	48.5
FACTOR 3: Responsiveness 1. the personnel in the hospital/clinics tell you exactly when services will be performed. 2. the personnel in the hospital/clinics give you prompt service. 3. the personnel in the hospital/clinics are always willing to help you. 4. personnel in the hospital/clinics are never be too busy to respond to your request.	0.770 0.621 0.888 0.868	6.88	55.38

<p>FACTOR 4: Assurance</p> <p>1. the behavior of personnel in hospital/clinics in still confidence in you.</p> <p>2. you feel safe in your dealings with the hospital/clinics.</p> <p>3. 16- personnel in the hospital/clinics are consistently courteous with you.</p> <p>4. personnel in the hospital/clinics have the Knowledge to answer your questions.</p>	0.670		
	0.751	4.58	60.96
	0.765		
	0.810		
<p>FACTOR 5: Empathy</p> <p>1. the hospital/clinic gives you individuals attention,</p> <p>2. the hospital/clinic has operating hours convenient to all its patients.</p> <p>3. the hospital/clinic has personnel who give you personnel attention.</p> <p>4. the hospital/clinic has your best interest at heart.</p> <p>5. the personnel of the hospital/clinic understand your specific needs.</p>	0.614		
	0.772	5.43	66.39
	0.709		
	0.648		
	0.848		

As can be seen from the table above, factor analysis performed on the 22 items and produced five factors with 66.39 percent of total variance explained. All items in the scale managed to score factor loading of at least 0.60. the first factor named tangible consist of four items and explained 40.15 percent of the total variance. The second factor is called reliability and makes up to five items and explain 8.35 percent of the total variance. The third factor labeled as responsiveness and consist of four items contribute to 6.88 percent of the total variance. The fourth factor called assurance and makes up to four items manage to explain 4.58 percent of the total variance. finally, the fifth factor labeled as responsiveness consist of five items and explain 5.43 percent of the total variance.

9. Reliability Tests.

Reliability tests were also done to assess the degree of consistency between multiple measurements of a variable. A measure is reliable to a degree that it gives consistent results. Cronbach's Coefficient Alpha was used to test the internal reliability of the component variables of each factor. Hair et al. (1992) and Grandzol and Gershon (1998) suggested that alpha of 0.7 and above are considered acceptable. The results of reliability tests revealed that all the five factors fulfilled

the requirements, Table 3 summarizes the results of the reliability tests described above.

Table 3: Reliability Test

Dimensions	No of Items	Cronbach Alpha
FACTOR 1 : Tangible	4	.78
FACTOR 2: Empathy	5	.81
FACTOR 3: Reliability	5	.89
FACTOR 4: Responsiveness	4	.75
FACTOR 5: Assurance	4	.79

10. Hypothesis testing

- Hypothesis 1-1: *Tangibility*

Service Tangibility Gap

	N	Minimum	Maximum	Mean	Std. Deviation
Expected Tangibility	40	3.00	7.00	5.5500	1.12404
Percept Tangibility	40	1.00	7.00	3.88813	1.45005

Tangibility Gap Score = Percept tangibility – Expectation tangibility

There is a negative gap (-1.6687) between the expected service tangibility and the precept service tangibility

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Expected Tangibility Percept Tangibility	1.66875	1.82696	.28887	1.08446	2.25304	5.777	39	.000

Since the significance is less than 0.1 we refuse the null hypothesis which says “there isn’t a significant difference between the expected quality of service tangibility in excellent and the precept quality of service tangibility in the public hospitals” and accept the alternative hypothesis.

- Hypothesis 1-2: Reliability

Service reliability Gap

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Expected reliability	5.7500	40	0.8114	0.12825
Percept reliability	3.9675	40	1.39238	0.22015

Reliability Gap Score = Percept reliability – Expectation reliability

There is a negative gap (-1.7825) between the expected service reliability and the precept service reliability.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Expected reliability Percept reliability	1.7825	1.58388	.25043	1.27595	2.28905	7.118	39	.000

Since the significance is less than 0.1 we refuse the null hypothesis which says "There isn't a significant difference between the expected quality of service reliability in excellent hospitals and the precept quality of service reliability in the public hospitals" and accept the alternative hypothesis.

- Hypothesis 1-3: Responsiveness

Service Responsiveness Gap

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Expected Responsiveness	5.3438	40	1.094440	0.17304
Percept Responsiveness	3.6688	40	1.45818	0.23056

Responsiveness Gap Score = Percept responsiveness – Expectation responsiveness

There is a negative gap (-1.675) between the expected service responsiveness and the precept service responsiveness.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Expected Responsiveness Percept Responsiveness	1.67500	1.72575	0.27286	1.12308	2.22692	6.139	39	.000

Since the significance is less than 0.1 we refuse the null hypothesis which says *"There isn't a significant difference between the expected quality of service responsiveness in excellent hospitals and the precept quality of service responsiveness in the public hospitals"* and accept the alternative hypothesis.

- Hypothesis 1-4: Assurance

Service Assurance Gap

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Expected Assurance	5.6875	40	0.93841	.14838
Percept Assurance	3.7375	40	1.39131	2.1999

Assurance Gap Score = Percept Assurance – Expectation Assurance

There is a negative gap (-1.95) between the expected service assurance and the precept service assurance .

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Expected Assurance Percept Assurance	1.9500	1.52248	2.4073	1.46309	2.43691	8.101	39	.000

Since the significance is less than 0.1 we refuse the null hypothesis which says *"there isn't a significant difference between the expected quality of service assurance in excellent and the precept quality of service assurance in the public hospitals"* and accept the alternative hypothesis.

- Hypothesis 1-5: Empathy

Service Empathy Gap

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Expected Empathy	5.6375	40	1.06757	0.16880
Percept Empathy	3.9575	40	1.44344	0.22823

Empathy Gap Score = Percept empathy – Expectation empathy

There is a negative gap (-1.68) between the expected service empathy and the precept service empathy.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Expected Empathy Percept Empathy	1.68000	1.71149	2.7061	1.13264	2.22736	8.101	39	.000

Since the significance is less than 0.05 we refuse the null hypothesis which says "there isn't a significant difference between the expected quality of service empathy in excellent and the precept quality of service empathy in the public hospitals" and accept the alternative hypothesis.

Analyzing Gap Score

	Tangibilities	Reliability	Responsiveness	Assurance	Empathy
Expected core	5.55	5.75	5.3438	5.6875	5.6375
Percept core	3.8813	3.9675	3.6688	3.7375	3.9575
Gap Score	-1.6687	-1.7825	-1.675	-1.95	-1.68

Average gap score -1.7512

From the above table, the biggest negative gap was found in the *assurance* dimension which means that quality of this dimension is the least one. We can also conclude from the above table that the precept quality dimension was lowest in service responsiveness.

Comparing our results with UK hospital outpatient survey.

	weight	percept	Expected	Gap
Tangibilities	0.13	5.21	5.24	- 0.03
Reliability	.026	5.52	6.31	- 0.79
Responsiveness	0.21	5.88	6.17	- 0.29
Assurance	0.20	5.98	6.39	- 0.41
Empathy	0.20	5.66	6.16	- 0.50

Source: Ariffin Ahmad, Aziz Norzalita, 2008.

It is clear the gap score in the UK hospital is much narrower than the gap score in our sample. However, in both cases there was a negative gap.

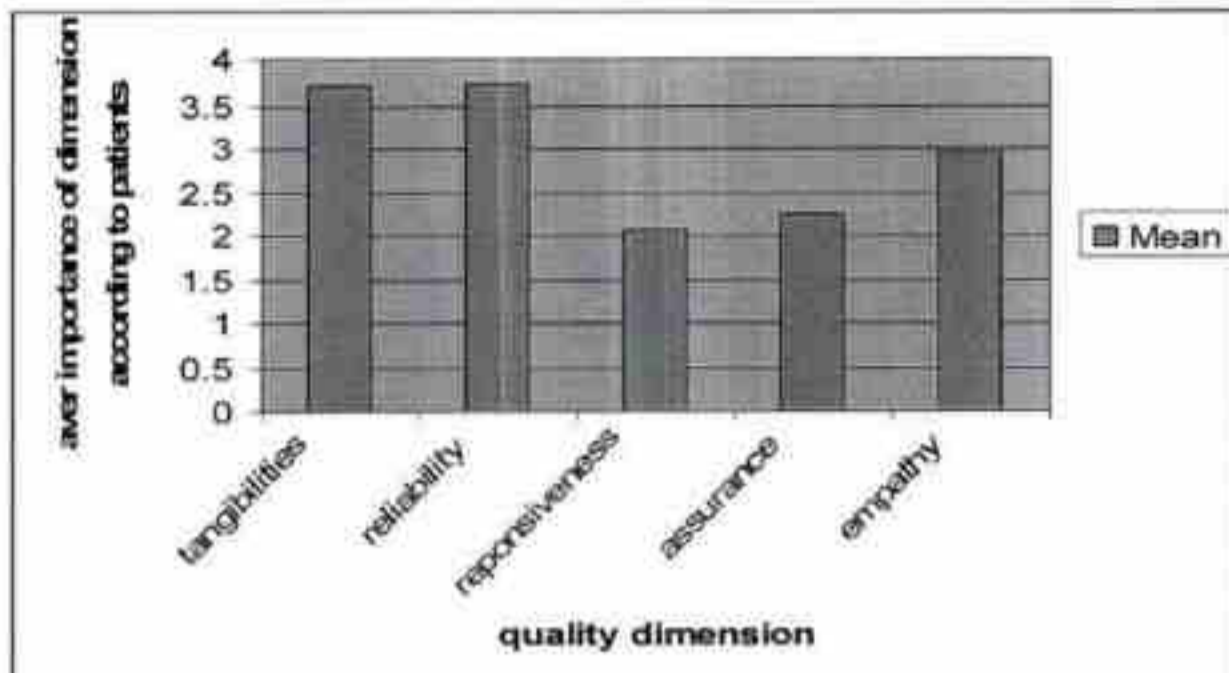
● **The relative importance of each dimension of service quality**

In order to know importance for each of the 5 dimensions we asked the patients in the questionnaire to rate the (tangibility, reliability, responsiveness, assurance, empathy) from 1 to 5 according to their importance.

The result was as in the following table:

Dimensions	weight	Minimum	Maximum	Mean	Std. Deviation
Tangibility	31	1.00	5.00	3.7097	1.50982
Reliability	30	1.00	5.00	3.7333	1.14269
Responsiveness	30	1.00	5.00	2.0667	1.14269
Assurance	33	1.00	5.00	2.2424	1.09059
Empathy	31	1.00	5.00	2.9677	1.42557
Valid N(list wise)	30				

From the below bar graph it is clear that the tangibility and reliability are the most important dimensions in service quality. Following them comes empathy where it's relative importance is moderate. Finally we realize that the least important dimensions in the hospital service quality are assurance and empathy.



However, it must be noted that only 27 patients answered this question in the questionnaire.

11. Conclusions:

- There is a negative gap between the expected service quality and the precept service quality.
- The dimensions of the service quality (tangibility's, reliability, responsiveness, assurance and empathy) are not satisfied and this is considered as a weak point in the public hospitals which needs to be solved as soon as possible.
- The most important dimension of service quality in the patients point of view is reliability
- The biggest negative gap score was in assurance. Which means hospitals should stress on narrowing this gap.
- There aren't any significant differences for service quality due to personal factors of the patients (sex, age, educational level, social status and the number of times the patient visited the hospital.)

12. Recommendations:

Public hospitals should work on closing the gap between the expected quality and the precept quality by focusing on each on the quality dimension:

- First of all the hospital management should work on closing the assurance gap because it is the largest gap. And this can be achieved by giving the patient personal attention and care, understanding what is his/her needs precisely, and considering that the patient satisfaction and benefit is the first priority so that the patient trusts the hospital and feels safe.
- Focusing on the reliability in every way especially since it is the relatively the most important dimension. The best way to do so is to prompt quality culture in the hospital.
- Improving the tangible side of the hospital such as renovating the building, renewing the equipment and facilities, disturbing brochures and providing all what can make the patient relaxed in terms of lighting and air refreshing.
- Increasing the responsiveness by minimizing the time the patient has to wait until he/she is served, serving the patients quickly and accurately form the first time, having a corporative staff that is always ready to respond to complaints and suggestions.
- Encouraging patients to give suggestions to increase the service quality in the public hospitals and practicing their suggestions seriously.
- Training the management and the hospital staff in courses related with how to deal with patients in order to maintain their satisfaction.

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**Measuring service quality in hospital
(Statistical study at Aleppo's University hospital)**

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Abstract

The aim of this research is to identify the dimensions of service quality in public hospitals in the Syrian Arab Republic and subsequently examines the gap between the expectation and perception on the various aspects of the services. To achieve the research aims, SERVQUAL model as developed by Parasuraman et al.1988, has been deployed in this study that is consisting of five dimensions. A sample of 40 patients were asked to fill the questionnaire according to their age and number of time visiting the hospital. The results indicated that there is a negative gap between all the dimensions of service quality at Aleppo public hospitals, showing that there are a lot of service improvement efforts need to be carried out to enhance the quality of services at the Syrian public hospital. The study also showed that the biggest negative gap was found in the *assurance* dimension which means that quality of this dimension is the least one.

Key words: service quality, hospitals, service gap.