EFFECT OF FUNCTIONAL QUALITY ON PATIENT SATISFACTION THROUGH THE MENTAL IMAGE OF HOSPITAL

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ABSTRACT
This study was prepared in order to reveal the effect of the functional quality of the health services provided at the Surgical Specialties Hospital in the Medical City in Baghdad on improving the mental image of the hospital. A random sample of (100) patients was selected by adopting the questionnaire tool as a measure of the study variables. The questionnaire tool was distributed among the inpatients of the hospitals included in the study. SPSS, v.25, was used to analyze the study data, and the results showed that there is a strong positive correlation between the variables (functional quality, mental image, and patient satisfaction). In addition to that, there is an effect of the mediating variable (mental image) on Improving the relationship of the effect of functional quality on patient satisfaction, which is a partial effect as this is evidenced by the direct and indirect effect values on the variable of the study.

Keyword: Functional Quality, Patient Satisfaction, Hospital Image, Health Services.

1. INTRODUCTION
Health organizations, whether in the private or public sector in developed countries, do not differ from other organizations in terms of the functions they exercise and their marketing systems, but rather in the goal that is community service and improving the level of health that is related to human life directly. With the increase in the demand for health services of all kinds, attention and advancement must be made to provide a service with high functional quality in an attempt to take care of the patient and gain his satisfaction. The patient satisfaction comes through his awareness of the service provided, and the higher levels of the quality of the functional service may lead to the formation of a positive mental image of the organization and its workers. Perhaps, the patient’s acquisition of a mental image of the health services provided to him will be through accomplishing the tasks of service providers in knowing how to measure the quality of job service, realizing the specific specifications of its quality and working to meet the needs and expectations of patients and solve their problems, seeking to gain their satisfaction and then form the desired image that the organization seeks to achieve. Perceived service quality is related to perception, which is a mental process that creates a directive response that plays an important role in decision-making related to the patient’s dealings with this hospital according to what his needs and desires dictate to him. So we find that he builds his perceptions (perceived mental image) depending on the expected quality of functional service. Nasrula (2020) conducted a study of the effect of functional quality (how to provide the service) towards the mental image of Bahiramas Hospital and the effect of the functional quality of health services on
patient satisfaction. The results of the study indicated that functional quality had a positive and important effect on the mental image of the hospital and patient satisfaction.

2. LITERATURE REVIEW

2.1 Quality of service

Quality currently occupies great importance to all organizations as it is the basis for business success. Concern for quality has become a global phenomenon as it is the first function of service organizations. Quality is known as the distinction and brilliance of products that enables hospitals to please their patients, keep them and gain their satisfaction (Muhammad & Syed Ali, 2015). Juran defined it as the suitability of the product for use and the ability to provide the best performance, the most accurate specifications, and conformity to the standards (Pheng & Rui, 2016).

As for the service, trying to define it is difficult, because its concept depends on the description of the activity. It describes the original meaning of the service, i.e. the type of work and activity that the service provider will perform for the patient (Lima et al., 2016). Service, according to Kotler, is a beneficial activity or performance that one party can provide to another and does not result in any ownership of anything (Johann, 2015). It cannot be seen, tasted, felt, heard or smelled before buying it, meaning that it is a performance and not an object. This means that the services are like a process, it is a performance more than a physical thing (Felix, 2017).

Thus, the concept of service quality can be defined as a manifestation of perfection in service provision, i.e. the degree to which the actual service performance matches the patient's expectations for this service (Kowalik & Klimecka-Tatar, 2018). The quality of service is an important element in differentiation in service provision for hospitals and is essential to patient satisfaction (Johann, 2015). The quality of service depends on the expected service (i.e. what the customer expects) or the realized (perceived) that (he realizes in practice). In order to satisfy the patient, there must be an understanding of what the quality of service is and what it means for the patient, as the hospital needs to measure and evaluate the quality of its services (Madelelne, 2015).

2.2 The functional quality of health services

Functional quality has captured the interest of many researchers in various fields. Researchers have gathered attention to the quality of the service provider in organizations and giving him the necessary care that he needs in order to achieve their highest goals, since, definitly, all organizations strive to carry out their work efficiently and effectively in order to achieve the previously planned goals at the lowest possible cost. The difference between a good and a bad organization is the manner in which the service provider in the organization deals with the customer, the service provision is a combination of workers and technology to reach a better way to provide high-quality services (Lucas, 2015).

The first to define functional quality is Gronroos (1998), who expresses it by (how), that is, how is the process of providing service. Functional quality is one that focuses on the 'how' and looks at issues such as the behavior of workers who communicate with patients and the speed of their service, that is, the way service is provided to the patient (Gi-Kang, 2006). The quality of the interaction between the service provider and the recipient of the service in the place where the service is provided depends mainly on aspects such as (time, absence of errors and safety in the service (Kowalik & Klimecka-Tatar, 2018). Interaction is a positive incentive for the patient
because it allows integration and dialogue between the patient and the service provider (Aguayo & Ramírez, 2020). It answers the question of how to perform the work that the patient gets on the service, that is, it is related to the performance of the service and is viewed largely in a subjective manner (Kazemi, 2015).

The communication of service providers with the patient is based on mutual understanding, empathy, participation, adaptation, responsiveness, and the desire to help patients and meet their requirements (Hussain et al., 2015). It has been called personal quality as it relates to how services are provided to patients and the relationships that are established between service providers and the patient who receive service (AL-Mahwey & Sayah, 2021). The hospital administration should strive to enhance the quality of its services by defining the strategic goal of service quality and following up on patients’ needs and expectations (Al-Bahi, 2016).

2.3 Dimensions of the functional quality of health services

Most of the researchers agreed that (credibility, responsiveness, empathy and promptness) represent the dimensions of functional quality (Ioanna & Loukas, 2018; Nasrul, 2020; Akan 1995; Akhtar, 2011; Khanfousi, 2018). Accordingly, the current study will deal with the dimensions of functional quality as follows:

a. Credibility: how creditable is the service provider? Is he reliable? (Al-Taie & Al-Alaq, 2009). Credibility is considered the honesty and reputation of the hospital and the reliability of the information obtained (Khanfousi, 2018).

b. Responsiveness: the ability and immediacy of response of the service provider when providing the service (An & Noh, 2009). It reflects the willingness to help the patient and provide quick service, as it is the real help in providing service to the patient (Mahmoud Wasaad, 2014) and it means humane treatment such as the service provider’s package (Al-Zubaidi & Al-Shujairi: 2018).

c. Empathy: how the hospital and its personnel care about patients in order to make its patients feel valued and privileged (Norazah, 2013). This affects the perceptions, attitudes and assessments of patients towards building perceptions about the quality of services provided to them (Suki, 2014).

d. Promptness: the easy access to the service on site and at the right time (Sultan, 2012). Whether the service is available as the patient wants (Al-Ta’i and Al-Allaq, 2009), and whether the patient’s waiting is not more than what is required (Khanfousi, 2018).

2.4. Patient Satisfaction

Devoting attention to the patient is an important and essential aspect of service organizations in the current century because of its great influence in determining the success of the organizations’ strategy and thus enhancing their competitive advantage in the environment in which they operate.

Before dealing with the concept of patient satisfaction, it is necessary to refer to both the concept of patient and satisfaction. Satisfaction is termed in the English as (satisfaction) and in Latin it came from dividing it into two parts: (satis), meaning correctly, and (facere), meaning doing (Hussein, 2019). Satisfaction is a positive thing for a set of situations and feelings for a subjective experience in which an emotional response elicits perceived value (Polackova, 2018).
The results of satisfaction come from comparing past experiences and promises or information obtained with the case that was perceived or reached (Hussein, 2019).

Satisfaction is defined as an emotional response of the customer towards the experience of a specific product/service (Pokorna, 2015). As for the patient, it is the main goal in any organization to whom it directs all its activities and seeks to fulfill their needs (Namupala, 2019). The loss of these persons is an early warning of potential competitive threats to the hospital (Bordoloi et al., 2019) as it is the main force behind the ultimate success of any organization (Heyduk, 2010). It mainly assesses the level of quality of the hospital's services (Pohankova, 2007).

Therefore, patient satisfaction was defined as an evaluation process between what was expected and what was received from the services provided by the hospital (Chong et al., 2015). It is also known as the result that the patient gets when the service provided exceeds his expectations (Dawi et al., 2018).

2.5. Mental image of hospital

The mental image of a hospital is an important concept and a common term that many hospitals are interested in, yet it is still difficult to define as it represents the perceptions of the patient or groups that have an interest in the hospital (Obioma, 2019).

Mental image is linguistically defined as the form of the distinct thing in the mind of the individual, the plural of image is by fracturing the SAD (Baqer, 2014). As for the medieval dictionary, it was defined as' the figure and the anthropomorphic statue. The image is like the imagination in the mind or the mind. It is a reflection of the individual's expectations towards the surrounding environment and all its components (Al-Khatib, 2011). Where the mental image is the actual presence that leads the hospital to differentiate from competing hospitals and build a sustainable competitive advantage (Yee, 2015). It is a difficult treasure to obtain, but it can be lost quickly and easily (Chin & Chin, 2014).

2.6. Dimensions of the mental image of the hospital

Most of the researchers agreed that (physical appearance, impression, advertising and communication) represent the components of the mental image (Obioma, 2019; Nasrul, 2020; Tran et al., 2015; Abdel Fattah, 2015, Al-Bardaqani and Hamawi, 2017. Accordingly, the current study will address the mental image of the hospital as follows:

a. The physical appearance: includes the physical facilities associated with the service, such as the physical planning of the buildings and the decorations (Al-Bardaqani & Hamawi, 2017)

b. Impression: It is the creation of new desirable perceptions in others about his direction or the expression of those ideas taken from him for a specific goal for a personal motive (Al-Ahmur, 2020). It is an event in which a person first meets another person, and then forms a mental image of that person (Mackie, 2007).

c. Advertisement: is a means of public communication used by an organization to convey its message through this means with the aim of informing and convincing customers of services (Swaidan: 2010).

d. Communications: It is the administrative process based on interactive dialogue with the target audience through the organization, development and evaluation of a series of messages directed
towards the different groups of them with the aim of creating a place for the hospital in their minds. (Albakry, 2011).

2.7. Relationship between the study variables

The essence of this relationship is to satisfy patients with the outstanding required work. All service providers must take into account their functions, and patients ’reactions to the service provided to them must be verified (AL Saffar&Obeidat, 2020: 79). Functional quality affects the overall assessment of the patient’s mental hospital image. The service providers have a significant positive influence on the hospital’s image by patients (Nguyen & Leblanc, 2002). This means that patients see better functional quality and that the hospital’s image will be improved in the patients ’eyes. Previous studies have proven that the functional quality has an effect on improving the hospital's image in patients' eyes (Nasrul, 2020).

2.8. Hypotheses and research model

In order to achieve the goal of the study in knowing the effect of the functional quality of the health service on the patient’s satisfaction through the mental image of the Surgical Specialties Hospital in the Medical City Department, and what kind of relationships they have. The following hypotheses were formulated:

(H1): There is a significant effect of the functional quality variable on patient satisfaction in hospitals included in the study, from the patients' point of view.

(H2): There is a significant effect of the organization image variable on patient satisfaction in hospitals included in the study, from the patients' point of view.

(H3): There is a significant effect of the functional quality variable on the patient’s satisfaction through the image of included in the study, from the patients' point of view.

Figure (1) shows the study model that represent these relationships between the variables.
2.9. Population and Sample

The current study is an explanatory research to examine the hypotheses between the variables and focus on the interpretation of the effects between one variable and other variables. The study was conducted in the Surgical Specialties Hospital affiliated to the Medical City Hospitals in Baghdad, Iraq, which becomes a reference for clinics and doctors' practices and is visited by various communities, especially those who are from other provinces. In this study, random samples were taken to represent the community in a realistic manner. All the hospitalized patients at Medical City Hospital were selected of private wings. The questionnaire was distributed to (100) patients. Table (1) and Table (2) illustrate the study population and the sample and how it is calculated in the hospitals studied.

Table (1) Total hospitalized patients in the Surgical Specialties Hospital in the first and second months of 2021

<table>
<thead>
<tr>
<th>Month</th>
<th>Surgical Specialties</th>
</tr>
</thead>
<tbody>
<tr>
<td>First month</td>
<td>328</td>
</tr>
<tr>
<td>Second month</td>
<td>355</td>
</tr>
<tr>
<td>Total</td>
<td>683</td>
</tr>
<tr>
<td>Average</td>
<td>341.5</td>
</tr>
</tbody>
</table>

Table 2: Distribution of sample to the studied hospitable

<table>
<thead>
<tr>
<th>Hospitals</th>
<th>Ratio of total number</th>
<th>Sample size (patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Specialties</td>
<td>341.5</td>
<td>100</td>
</tr>
</tbody>
</table>

3. Analysis and Discussion of Findings

3.1 Scale reliability testing

To measure the functional quality variable for health services, a questionnaire consisting of four dimensions was used: (credibility, responsiveness, empathy and promptness), and consisted of (20) indicators (Ahmed et al., 2017, Saadallah, 2017). As for the patient satisfaction scale, (15) indicators were adopted to measure it as a single variable (Christine et al., 2019; Padma et al., 2015). The hospital mental image scale consists of four dimensions: physical appearance, impression, advertisement and communication). It consists of (20) indicators. (Rhaimi& Ahmad, 2015; Onyeaghala, 2019; Al-Bardaqani&Hamwi, 2017). The questionnaire was designed according to Likert's five-point scale (1 very poor to 5 very good). The values of the Cronbach alpha coefficient ranged between (0.908-0.922) for the variables and dimensions. It showed greater than (70%), and this indicates that the variables and dimensions have an appropriate internal consistency. The coefficient of the internal consistency of the scale was
(0.918) as a whole, which is a high rating. These results indicate that the study scale has a high level of stability.

The data distribution test was also performed to determine the type of data distribution, whether normal or abnormal. (Kolmogorov-Smirnov) for the functional quality variable was (0.091), and for the patient satisfaction variable, it was (0.109), and the hospital mental picture variable was (0.098). It is obvious from the value of the significance level of the Kolmogorov-Smirnov test for all the research variables that it was smaller than the significance level at (0.05) and this indicates that the variables do not follow the normal distribution. Based on this result, the variables that do not follow the normal distribution will be treated by relying on the standard formula through what is known as the standardization method, after dividing the difference between the values of the variables from their arithmetic mean by their standard deviations (Chatterjee & Hadi, 2006: 139-140).

Table (3) shows the results of the normal distribution test for the study data.

<table>
<thead>
<tr>
<th>Test parameter</th>
<th>Kolmogorov-Smirnov</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Test statistic</td>
</tr>
<tr>
<td>Functional quality</td>
<td>0.091</td>
</tr>
<tr>
<td>Mental image of the hospital</td>
<td>0.098</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>0.109</td>
</tr>
</tbody>
</table>

3.2. Measuring the degree of occurrence of the variables

c. Degree of occurrence of the functional quality variable

The data collected was processed using (SPSS V.23) in Table (4). The results indicate that the functional quality variable has an arithmetic mean of (3.24) and a deviation of (0.597, 0.597) for the two dimensions of reliability and responsiveness, while it happened after the promptness with a standard deviation of (0.616).

Table 4: Ranking of importance for the dimensions of functional quality variable

<table>
<thead>
<tr>
<th>Dimensions of the functional quality variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Variable availability Ratio</th>
<th>Gap size</th>
<th>Gap size to total</th>
<th>Ranking of dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Credibility</td>
<td>3.55</td>
<td>0.597</td>
<td>71</td>
<td>29</td>
<td>20.6</td>
<td>1st</td>
</tr>
<tr>
<td>2 Responsiveness</td>
<td>3.55</td>
<td>0.597</td>
<td>71</td>
<td>29</td>
<td>20.6</td>
<td>2nd</td>
</tr>
<tr>
<td>3 Empathy</td>
<td>2.95</td>
<td>0.711</td>
<td>59</td>
<td>41</td>
<td>29.1</td>
<td>2nd</td>
</tr>
<tr>
<td>4 Promptness</td>
<td>2.90</td>
<td>0.616</td>
<td>58</td>
<td>42</td>
<td>29.7</td>
<td>3rd</td>
</tr>
</tbody>
</table>
The data collected was processed using (SPSS V.25) in Table (5). Where the results indicate that the mental image variable has an arithmetic mean of (11.78) and a standard deviation of the physical appearance dimension (0.547), while it got the lowest percentage after communication, which amounted to 0.733.

e. Degree of occurrence of a patient satisfaction variable

The results in Table (6) indicate that the patient satisfaction variable has an arithmetic mean of (3.26) and a standard deviation of (4.06) for the indicator (specialized medical staff are available in the hospital that matches the patients' condition, which creates an appropriate atmosphere for interaction), which is the greater relative importance. The index (the hospital has all the amenities that the patient needs from the corridors and their equipment) got the lowest percentage, with a standard deviation of 2.85.

Table (6) Shows the arithmetic mean and standard deviation of the study sample responses to the patient satisfaction variable

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Mean relative weight</th>
<th>Relative importance</th>
<th>Response trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Feel comfortable and reassured when dealing with the medical and nursing staff.</td>
<td>3.5</td>
<td>0.804</td>
<td>70</td>
<td>3</td>
<td>good</td>
</tr>
<tr>
<td>2 Provide timely treatment.</td>
<td>3.49</td>
<td>0.719</td>
<td>69.8</td>
<td>4</td>
<td>good</td>
</tr>
<tr>
<td>3 Meals are provided to incoming patients on time</td>
<td>2.95</td>
<td>0.91</td>
<td>59</td>
<td>14</td>
<td>middle</td>
</tr>
</tbody>
</table>

Table 5: Ranking of importance of the dimensions of the organization's mental image variable

<table>
<thead>
<tr>
<th>Dimensions of mental image variable of the hospital</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Variable Availability Ratio</th>
<th>Gap size</th>
<th>Gap size to total</th>
<th>Ranking of dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Physical appearance</td>
<td>3.21</td>
<td>0.547</td>
<td>64.2</td>
<td>35.8</td>
<td>21.8</td>
<td>1st</td>
</tr>
<tr>
<td>2 Impression</td>
<td>2.95</td>
<td>0.637</td>
<td>59</td>
<td>41</td>
<td>24.9</td>
<td>3rd</td>
</tr>
<tr>
<td>3 Advertisement</td>
<td>2.97</td>
<td>0.953</td>
<td>59.4</td>
<td>40.6</td>
<td>24.7</td>
<td>1st</td>
</tr>
<tr>
<td>4 Communications</td>
<td>2.65</td>
<td>0.733</td>
<td>53</td>
<td>47</td>
<td>28.6</td>
<td>4th</td>
</tr>
</tbody>
</table>
Patients feel a high level of medical and nursing care provided to him during his stay in the hospital.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Score</th>
<th>Standard Deviation</th>
<th>Size</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The patient can get the information he needs about his condition from the hospital.</td>
<td>3.07</td>
<td>0.724</td>
<td>61.4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>The hospital has all the amenities that the patient needs from the corridors and their equipment.</td>
<td>3.42</td>
<td>0.753</td>
<td>68.4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>The patient feels the great care given by the nurse and their immediate response.</td>
<td>3.01</td>
<td>0.696</td>
<td>60.2</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>The hospital medical staff seeks to reduce the patient’s health concerns.</td>
<td>3.17</td>
<td>0.812</td>
<td>63.4</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>The hospital has specialized medical staff to suit the patients’ condition, which creates an appropriate atmosphere for interaction.</td>
<td>4.06</td>
<td>0.85</td>
<td>81.2</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>The medical staff encourage the patient in the hospital to improve his health.</td>
<td>3.2</td>
<td>0.869</td>
<td>64</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>The behavior of the hospital staff is characterized by kindness and respect for the patient, starting from entering the hospital until leaving it.</td>
<td>3.06</td>
<td>0.887</td>
<td>61.2</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>The hospital administration provides the required medical supplies.</td>
<td>3.15</td>
<td>0.807</td>
<td>63</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>The cost of health services provided to patients is proportional to their financial situation.</td>
<td>3.12</td>
<td>0.814</td>
<td>62.4</td>
<td>9</td>
</tr>
<tr>
<td>13</td>
<td>Other services are available for the patient lying in the hospital, including cooling, heating, electricity and water in all corridors.</td>
<td>2.95</td>
<td>0.874</td>
<td>59</td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>The existence of interactive relationships between doctors with appropriate specialties in terms of providing the necessary health services to the patient</td>
<td>3.88</td>
<td>0.745</td>
<td>77.6</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total average</strong></td>
<td><strong>3.26</strong></td>
<td><strong>0.526</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**e. Relative importance of the study variables**

To shed light on the study variable more, we relied on the arithmetic mean, standard deviation, dimension availability, gap size, gap size to total, and the Ranking of variables as shown in Table (7) where it becomes obvious that the smallest gap size was at the variable (patient satisfaction). It came in the first rank in terms of the study variables. As for the largest gap size, it was at the mental image variable, as this variable came in the third rank in terms of the research ranking of variables.

**Table 6: Variable importance ranking**
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<table>
<thead>
<tr>
<th>Search variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Variable availability ratio</th>
<th>Size gap</th>
<th>Size gap to total</th>
<th>Variables ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Functional quality</td>
<td>3.24</td>
<td>0.483</td>
<td>64.8</td>
<td>35.2</td>
<td>24.7</td>
<td>2nd</td>
</tr>
<tr>
<td>2 Mental image of the hospital</td>
<td>2.94</td>
<td>0.495</td>
<td>58.8</td>
<td>41.2</td>
<td>28.9</td>
<td>3rd</td>
</tr>
<tr>
<td>3 Patient satisfaction</td>
<td>3.26</td>
<td>0.526</td>
<td>65.2</td>
<td>34.8</td>
<td>24.4</td>
<td>1st</td>
</tr>
</tbody>
</table>

3.2. Hypotheses testing
a. Test of the first hypothesis (H1) which states that there is a significant effect of the functional quality variable on patient satisfaction in hospitals included in the study, from the patients' point of view.

The analysis will be done according to the simple linear regression model, as follows:

\[ Y = 0.965 + 0.709 \times X_1 \]

The symbol \(Y\) represents the patient satisfaction (the dependent variable).
- The symbol \(X_1\) represents functional quality (the independent variable).

The results of Table (8) for the analysis of the relationship of the effect of functional quality on patient satisfaction showed the following:

The \(F\) value calculated for functional quality scored at patient satisfaction (181.802). It is greater than the tabular value \(F\) of (3.89) at the level of significance (0.05). Therefore, the first hypothesis \(H1\) (there is a significant effect of the functional quality variable on the patient's satisfaction in the hospital included in the study from the patients’ point of view) is accepted.

It appears through the value of the coefficient of determination \(R^2\) of (0.424) that the functional quality explains (42%) of the variables that occur to the patient's satisfaction, while the remaining percentage (58%) is due to other variables that are not included in the study model. The value \(t\) calculated for the marginal slope coefficient of the functional quality variable is (13.483). It is greater than the tabular value \(t\) of (1.660) at the level of significance (0.05). This indicates that the significance of the marginal slope coefficient for the functional quality variable is proven. It is obvious through the value of the marginal slope coefficient \((\beta)\) of (0.709) that increasing the functional quality by one unit will lead to an increase in patient satisfaction by (70%), and the value of the constant \((\alpha)\) in equation was (0.965), meaning when the functional quality is equal to zero, the patient satisfaction will not be less than this value.
This result is consistent with the findings of the study (Felix et al., 2017).

b. Test of the second hypothesis (H2) which states that there is a significant effect of the organization image variable on patient satisfaction in hospitals included in the study, from the patients' point of view.

The analysis will be done according to the simple linear regression model, as follows:

\[ Y = 1.270 + 0.676 \times M \]

- The symbol (Y) represents the patient satisfaction (dependent variable).
- The symbol (m) represents the mental image of the hospital (independent variable).

The results of Table (9) for analyzing the relationship of the effect of the mental image of the hospital on patient satisfaction showed the following:

The value (F) calculated for the mental image of the hospital was (168.167) at patient satisfaction. It is greater than the tabular value (F) of (3.89) at the level of significance (0.05), therefore, we accept the second hypothesis (H2), which states (There is a significant effect of the organization image variable on patient satisfaction in hospitals included in the study, from the patients' point of view).

The value of (0.405) (0.405) is also shown that the mental image is explained (40%) of the variables that have been satisfied with the satisfaction of the patient, either the remaining and expensive percentage. The value of (T) was calculated for the tendency factor for the mental image variable (12,968). It is greater than the value (1.660) at a significant level (0.05) and this refers to a moral structure of mental tendency factor, as evidenced by the value of militaries (0.676) to increase the mental image one unit will increase patient satisfaction by 67%. The fixed value (α) was recorded in the equation (1.270), meaning when the mental image is equal to zero, the patient satisfaction will not be less than this value. This result is consistent with its findings of study (Nasrul, 2020).

### Table 8: Analysis of the effect of functional quality on patient satisfaction

<table>
<thead>
<tr>
<th>Significance</th>
<th>Sig</th>
<th>Computed (t) value</th>
<th>Computed (F) value</th>
<th>The coefficient of determination (R2)</th>
<th>The value of marginal slope coefficient (β)</th>
<th>Fixed Limit Value (α)</th>
<th>Dependent variable</th>
<th>Independent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>0.000</td>
<td>13.483</td>
<td>181.802</td>
<td>(R2)</td>
<td>0.709</td>
<td>0.965</td>
<td>Patient satisfaction</td>
<td>Functional quality</td>
</tr>
</tbody>
</table>

The results of Table (9) for analyzing the relationship of the effect of the mental image of the hospital on patient satisfaction showed the following:

The value (F) calculated for the mental image of the hospital was (168.167) at patient satisfaction. It is greater than the tabular value (F) of (3.89) at the level of significance (0.05), therefore, we accept the second hypothesis (H2), which states (There is a significant effect of the organization image variable on patient satisfaction in hospitals included in the study, from the patients' point of view).

The value of the (0.405) (0.405) is also shown that the mental image is explained (40%) of the variables that have been satisfied with the satisfaction of the patient, either the remaining and expensive percentage. The value of (T) was calculated for the tendency factor for the mental image variable (12,968). It is greater than the value (1.660) at a significant level (0.05) and this refers to a moral structure of mental tendency factor, as evidenced by the value of militaries (0.676) to increase the mental image one unit will increase patient satisfaction by 67%. The fixed value (α) was recorded in the equation (1.270), meaning when the mental image is equal to zero, the patient satisfaction will not be less than this value. This result is consistent with its findings of study (Nasrul, 2020).
Table 9: Analysis of the effect of the mental image of the hospital on customer satisfaction

<table>
<thead>
<tr>
<th>Significance</th>
<th>Sig</th>
<th>Computed (t) value</th>
<th>Computed (F) value</th>
<th>Coefficient of determination (R²)</th>
<th>Value of marginal slope coefficient (β)</th>
<th>constant term value (α)</th>
<th>Dependent variable</th>
<th>Intermediate variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>0.000</td>
<td>12.968</td>
<td>168.167</td>
<td>0.405</td>
<td>0.676</td>
<td>1.270</td>
<td>Patient satisfaction</td>
<td>Mental image</td>
</tr>
</tbody>
</table>

Tabular (F) value = 3.89  
Tabular (t) value = 1.660  
Sample size = 100  

The test of the third hypothesis (H3) which states that there is a significant effect of the functional quality variable on the patient’s satisfaction through the image of included in the study, from the patients’ point of view.

To test this hypothesis, the analysis will be adopted according to the multiple linear regression model, as follows:

\[ Y = a + 1 \times (X1) + \beta2 \times (M) \]

Where the symbol \(Y\) represents the patient's satisfaction (the dependent variable).
- The symbol \(X1\) represents the functional quality (the independent variable).
- The symbol \(M\) represents the mental image of the hospital (the intermediate variable).

The results of the hypothesis test were shown in Table (10) as follows:

- The value of \(F\) calculated for the model is (90.602). It is greater than the tabular value \(F\) of (2.65) at the level of significance (0.05), therefore, the third hypothesis (H3) is accepted: (There is a significant effect of the functional quality variable on patient satisfaction through the mental image of the hospital from the patients’ point of view). This result is consistent with the findings of the study (Nasrul, 2020).
- Through the value of the coefficient of determination \(R^2\) of (0.526) It becomes obvious that the functional quality and the mental image together are able to explain (52%) of the changes that occur to (patient satisfaction), while the remaining percentage (48%) is dependent on other variables other than Included in the study model.
- It is obvious through the value of the marginal slope coefficient of the functional quality variable of (0.255) that increasing the functional quality by one unit will lead to an increase in (patient satisfaction) by (25%).
- It is obvious from the value of the marginal slope coefficient of the mental image variable of (0.343) that increasing the mental image by one unit will lead to an increase in (patient satisfaction) by (34%), as is obvious in Table (10) and Fig. (2).
Table 10: Effect between functional quality and mental image on patient satisfaction

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Approach</th>
<th>Independent and intermediate variables</th>
<th>(β) The marginal slope</th>
<th>t test</th>
<th>Sig</th>
<th>F test</th>
<th>sig</th>
<th>Correlation coefficient (R)</th>
<th>Coefficient of determination (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient satisfaction</td>
<td>---</td>
<td>Functional quality</td>
<td>0.255</td>
<td>3.544</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>---</td>
<td>Mental image</td>
<td>0.343</td>
<td>5.819</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Effect of functional quality and mental image on patient satisfaction

Now that the effect relationship and correlation between the study variables we move to the second phase, which is testing the direct and indirect effect relationship between variables. Table (11) shows the following:

- The results showed that the critical value (CR) of the two variables, mental image and patient satisfaction, reached (8.485), which is greater than the standard critical value of (1.96), and thus there is a significant effect between functional quality and mental image.
- The results showed that the critical value (CR) of the two variables, mental image and patient satisfaction, reached (5.855), which is greater than the standard critical value of (1.96). This indicates that there is a significant effect between mental image and patient satisfaction.
- Through the results, it is obvious that there is an effect of the variable (mental image) in improving the relationship between functional quality and patient satisfaction, this is evident through the values of the direct and indirect effect. The results showed that the value of
the indirect effect between functional quality and patient satisfaction) which is (0.199) is less than the value of the direct effect between them which is (0.255). This means that the effect of the variable (mental image) between the two variables, functional quality and patient satisfaction is a partial effect, due to the fact that the critical value (CR) between functional quality and patient satisfaction reached (3.566), which is greater than the critical standard value of (1.96), that is, the effect of the independent variable (functional quality) still exists. Therefore, the variable (mental image) affected this relationship partially and not completely, as shown in Table (11) and Figure (3).

It should be noted here that sometimes there is a very slight difference in the numbers shown in the table from the numbers shown in the figures, as the AMOS program rounds numbers when drawing to two decimal places only.

Table 11: Direct and indirect effect of functional quality in achieving patient satisfaction through the mental image of the hospital

<table>
<thead>
<tr>
<th>Research Variables</th>
<th>Indirect effect</th>
<th>Direct effect</th>
<th>S.E.</th>
<th>C.R.</th>
<th>sig of direct effect</th>
<th>sig of indirect effect</th>
<th>Sig of direct effect</th>
<th>Type of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental image</td>
<td>---</td>
<td>Functional quality</td>
<td>---</td>
<td>0.579</td>
<td>0.07 0</td>
<td>8.48 5</td>
<td>0.000</td>
<td>significant</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>---</td>
<td>Functional quality</td>
<td>0.199</td>
<td>0.255</td>
<td>0.07 8</td>
<td>3.56 6</td>
<td>0.000</td>
<td>significant</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>---</td>
<td>Mental image</td>
<td>---</td>
<td>0.343</td>
<td>0.06 2</td>
<td>5.85 5</td>
<td>0.000</td>
<td>significant</td>
</tr>
</tbody>
</table>

Figure 3. Effect between functional quality and patient satisfaction by mediating the image

4. CONCLUSIONS AND FUTURE RESEARCH
Conclusions

The results showed that there is a strong positive direct relationship between the variables (functional quality, mental image, and patient satisfaction). In addition, there is an effect of the variable (mental image) in improving the relationship between the two variables functional quality and patient satisfaction, which is a partial effect as this is obvious through the values of the direct and indirect effect. This indicates that the patients trust the expertise, skills, and qualifications of the medical staff in the hospitals included in this study, the sample of the study. Also, the hospital staff has credibility when dealing with patients, but not at the level that the patient aspires to. Sometimes the hospital conceals some details for the patient in order to preserve his spirits and not to exaggerate matters, knowing that they inform the patient's families with all credibility of the state of health. The result indicates that emergency services for patients through ambulances are not of the required level, as they suffer from weakness in providing service to them before reaching the hospital and receiving the required services.

The results generally indicate that the level of empathy in the hospitals studied, is not at the required level. The medical staff sometimes does not understand the psychological nature of the patients and is not keen to listen to the patients and dialogue with him.

The results, also, indicate that, in general, the hospitals' interest in the external appearance was at an average level, despite knowing that the external appearance of the hospital buildings and green spaces affect the patients' disease status.

However, it is often governed by determinants for making adjustments or maintenance on the hospital, as it is limited to special areas or within a high population density area that limits the process of expansion or development where the importance becomes relative.

Results indicate that the image or first impression of patients changes during the period of stay or receiving health services as the patient builds a positive impression at the beginning until he receives health services, and the medical staff quickly responds to the complications he suffers at any time in (24) hours, then the impression either increases in the positive or decreases. The contribution of advertisements for rare medical specialties for the hospital in attracting patients is not at the required level because here is a weakness in the advertising process. Consequently, the patient does not know the nature of medical specialties, especially rare ones in hospitals. In addition, the network does not cover all hospital buildings, as some suffer from damage and others require periodic maintenance.

Future research

This study was conducted only in the Surgical Specialties Hospital in Medical City, in Baghdad, Iraq. The study relied on taking a random sample of patients. The future researcher can expand the scope of the study by conducting a comparative study between public and private sector hospitals, or conducting a study between state hospitals and hospitals in neighboring countries.

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