# THE EFFECT OF PERCEPTION OF HEALTH CARE SERVICE QUALITY ON PATIENT SATISFACTION AND LOYALTY IN MOTHER AND CHILD HOSPITAL

**Victor Pratama[1][*], Sri Hartini[1]**
[1]Fakultas Ekonomi dan Bisnis, Universitas Airlangga
Address : [1]Jl. Airlangga No 4-6, Surabaya, Jawa Timur
*E-mail : drvic88.md@gmail.com

## ABSTRACT

This article aims to study the effect of perception of health care service quality on patient satisfaction and loyalty in mother and child hospital. The researcher tried to identify the effect and relationship of each variable. Data collected through an accidental sampling technique among 50 samples in two hospitals in Surabaya, and the data were analyzed using path analysis. The result suggests that the perception of health care service quality does not significantly have a positive effect on patient loyalty. At the same time, there are significant and positive effects on the relationship between the perception of health care service quality and patient satisfaction. Patient satisfaction significantly has a positive effect on patient loyalty. Furthermore, patient satisfaction as a mediator variable mediates the relationship between the perception of health care service quality and patient loyalty. These findings emphasize the importance of these aspects to develop a better mother and child hospital.

**Keywords:** health care service quality, patient satisfaction, patient loyalty, simple mediation model

**JEL Classification:** I11, M31, M37

## INTRODUCTION

The development of the health care industry nowadays continues to experience rapid growth, and one of the health care service accommodations in the hospital, both private and government (Mulyana, 2010). The improvement of medical service quality has become the central issue in health care growth and development, both national and global scope. Dynamic service quality is the most crucial strategy in service to gain a competitive advantage, so it needs to be improved continuously and well-measured. Better service quality will give more value in the competition, provide a competitive edge, and increase efficiency simultaneously. By increasing the live quality standard and higher customer expectation, it is a responsibility to give high-quality health care services for patients (Swain and Kar, 2018). In this disruption era, which is highly uncertain, an organization or service company, especially health care service, does not just have a competitive advantage but also demanded to be ready to face changes.

Hospitals in Indonesia must improve themselves to restore public trust in the quality of health care services. It is since in their development, providing medical services alone is not considered sufficient and maximum if not accompanied by excellent facilities and satisfy patients. Success can be gained by a hospital through the continuous management and development of human resources to be able to provide quality health care services for patients.

One of the essential characteristics which have to be improved is service quality, since this will profoundly affect consumer satisfaction. Service quality has become an important topic, closely related to profit, cost savings, and market share (Devlin and Dong in Kondasani and Panda, 2015). According to Lewis and Booms in Tjiptono and Chandra (2011), service quality can be manifested through the fulfillment of customer needs and desires, as well as the accuracy of delivery to offset customer expectations. Customer satisfaction is a response related to a specific product (product expectations, consumption experience, and others), which is determined at a particular time (Giese and Cote in Tjiptono and Chandra, 2011).

Many empirical studies have examined the relationship among service quality, customer satisfaction, and customer loyalty in many service sectors (Fatima et al., 2018; Ismail and Yunan, 2016; Priporas et al., 2017). Due to the development of long-term relationships between hospital and patient, service quality is one of the essential factors (Singh Gaur et al., 2011). So it takes more effort and costs to attract new patients compared to retain old patients(Kessler and Mylod, 2011).

Based on hospital types, mother and child hospital is a type E hospital that provides only a kind of health care service activity in mother and child health care service. Inside the mother and child hospital, services and facilities aim to make mother and child feel safe and comfortable to be in the hospital. Furthermore, the satisfaction and loyalty of the customers in mother and child hospitals are assessed rarely due to customer's low frequency of visits compared to general or public hospitals. The niche market's nature in mother and child hospital shows the intense competition for this kind of specialized health care service.

Amid the dynamic of competition in the growing health care industry, mother and child hospitals position itself as a medical service provider specifically for mothers, future mothers, and children. It is different from the general hospital, which can give medical services for all patients' criteria in general. This condition creates challenges for mother and child hospital to compete in the health care industry.

There are few studies regarding several aspects in mother and child hospital. For example, Iswanto and Rosady (2020) focused on the monitoring and evaluation of lean implementation. This study was conducted in a hospital in Jakarta. They found that lean implementation help the hospital to reduce inventory cost of children's pharmacy by nearly half of the total cost. Dyah et al. (2020) looked at factors that can improve nurse performance. They conducted the study with 295 nurses of mother and child hospital as the sample. The results show that nurses with higher educational levels have the chance to perform better, have higher workability, and more capable of accepting responsibility. Furthermore, both intrinsic and extrinsic motivation have significant effects on nurse performance.

Concerning health care service quality, most studies on this topic were conducted in public or private hospitals in general. For example, Ahmed et al. (2017) studied service quality, patient satisfaction, and loyalty in Bangladesh private hospitals. They compare these factors with public hospital patients. The findings show that private hospital patients are more satisfied and loyal than public hospital patients. Purcărea et al. (2013) conducted a study on the perceived service quality of public health care services in Romania. They perform this study on 183 participants. The results indicate that patient's perception has increasing become a significant factor in determining service quality in the context of health care services, despite there is a difference between what patient perceives and what health care service provides. Mosadeghrad (2014) conducted a study to identify factors that influence health care service quality in Iranian public and private hospitals. One of the results shows that the quality of healthcare services is limited severely by lack of resources and frequent management turnover. This study indicates there is a need for essential changes in numerous aspects of the healthcare system in Iran (quality management, social capital, leadership capital, cultural capital, human capital, physical capital, and many others).

To the best of our knowledge, there is no literature on the relationship of service quality, customer satisfaction, and customer loyalty in the specific context of mother and child hospital. For these reasons, this study aims to investigate the relationship between these variables in the context of mother and child hospital.

## LITERATURE REVIEW

### Health Care Service Quality

Quality is a dynamic condition that affects products, services, people, processes, and environments that meet or exceed expectations. So, the definition of service quality is an effort to meet the needs and desires of customers and the accuracy of delivery to offset consumer satisfaction (Tjiptono, 2015).

In some works of literature regarding service, service quality is the most critical research field for both researchers and practitioners (Kondasani and Panda, 2015, and Shabbir et al., 2016). According to Aagja and Garg, (2010), service quality in hospitals is the difference between customer perception and their expectations regarding the hospital's offered services.

Service quality has become a success factor for many companies in the service sector. Before implementing quality management practice, then the hospital manager needs to decide and know patient perception on health care service quality, and expected in building expectation intensity and patient loyalty (Shabbir et al., 2016). There are several indicators of health care service quality: physician's care, nurse's care, supportive staff, operational activities, and physical maintenance.

Physician's care is the level of interaction between physician and patient (O'Connor et al. in Shabbir et al., 2016). It includes the process of diagnosing the disease and giving proper clinical treatment to the patients (Chahal and Mehta, 2013). According to Tafreshi in Mohamed and Azizan (2015), nurse's care is the giving of safety care based on nursing guidelines. Nurse's care is related to hospitality, the nurse's punctuality, and the provision of excellent and satisfying medical care, and others (Gilson et al. and Newman et al. in Shabbir et al., 2016). Supportive staff is reflected as the backbone of overall medical service in the hospital, which involves doing many medical service functions, such as Rontgen facility and laboratory testing (Sardana in Chahal and Mehta, 2013). This functions also requires empathy, awareness, skills, and communication from supportive staff and paramedics (Duggirala et al. in Shabbir et al., 2016). Operational activity is an activity that covers medical record care, examination procedure, billing delivery procedure, and many other administrative functions (Chahal and Mehta, 2013). Physical maintenance is related to proper maintenance in the hospital environment, the well-structured layout of the patient bed, toilet and bathroom cleanliness, well-designed waiting room, and the dustbin and ashtray placement in the corridors of the hospital (Brady and Cronin in Shabbir et al., 2016)

**Patient Satisfaction**

Satisfaction is a happy feeling of someone that comes from the comparison between the pleasure of activity and a product with the expectations (Nursalam, 2011). A patient is a bio-psychological social, economic, cultural being. This thing means that he/she needs the fulfillment of desires and expectations from biological aspects (health), psychological aspects (satisfaction), socio-economic aspects (shelter, clothing, food, and social affiliation) and cultural aspects (Supriyanto and Ernawati, 2010).

According to Kondasani and Panda (2015), patient satisfaction is the overall satisfaction of service. Satisfaction is the result, for example, the emotional evaluation of the patient as a response from a given service. Producing satisfaction among patients and making a reliable healthcare system is essential to improve the quality of life (Senić and Marinković, 2013). According to Shabbir et al. (2016), patient satisfaction acts as a mediator for private or government hospitals. The mediation effect of patient satisfaction between health care service quality and patient loyalty shows that patient satisfaction fully mediates the relationship between nurse and physician and affects patient loyalty.

**Patient Loyalty**

According to Kotler and Keller (2015), loyalty is a profoundly held commitment to buy or support a preferred product or service in the future even though the influence of the situation and marketing effort can cause customers to switch. While according to Tabrani et al. (2018), loyalty is customers who not just repurchase a product or service but also recommend it to other people. In the service sector, emphasis on loyalty increased because of the effect of patient loyalty that directs to an increase in organization image and market share (Chahal and Mehta, 2013).

There are two dimensions of patient loyalty. According to Wisker (2020), repurchase intention is defined as the intention to engage in repeat purchases. In comparison, word-of-mouth is defined as communication where customers will inform others about their experiences with a product or service (Donio et al. in Shabbir et al., 2016).

**Relationship between Health Care Service Quality and Patient Loyalty**

The impacts of service quality and customer loyalty have been investigated in many studies. High service quality creates value for business and leads to customer satisfaction and customer loyalty (Makanyeza and Mumiriki, 2016). Organization's success largely depends on excellent service quality, creating value, and customer satisfaction. Boonlertvanich (2019) found that customer-perceived service quality positively impacts both attitudinal and behavioral loyalty. Slack and Singh (2020)also found that service quality significantly affects customer loyalty. Service quality affects an organization's ability to compete and reinforce its position in the market, so there is a need to implement strategies to improve service quality and promote customer loyalty. In the context of healthcare service in the hospital, Fatima et al. (2018) found that health care service quality and patient loyalty are related to each other. This finding shows that the hospital will create patient loyalty goals if the health care service quality is provided in the right way. Therefore, the hypothesis can be summarized as follows:

**H₁. The perception of health care service quality has a positive impact on patient loyalty.**

**Relationship between Health Care Service Quality and Patient Satisfaction**

Some works of literature have identified the relationship between service quality and patient satisfaction. Demirci Orel and Kara (2014) showed a positive relationship between service quality and customer satisfaction. The same result is also confirmed by Su et al. (2016) and Özkan et al. (2019). A high level of service quality helps a company build a good relationship with customers and foster higher customer satisfaction and customer-company identification. In the context of healthcare service in the hospital, Amin and Zahora Nasharuddin (2013) found that a high level of hospital service quality will lead to a high customer satisfaction level. Mohamed and Azizan (2015) also found the same result, emphasizing the importance of healthcare quality to improve patient satisfaction. By providing superior service quality, hospitals can fulfill patients' desires and expectations who use their health care services, thus making customers satisfied. Therefore, this study puts forth the following hypothesis:

**$H_2$. The perception of health care service quality has a positive impact on patient satisfaction.**

**Relationship between Patient Satisfaction and Patient Loyalty**

Akroush and Mahadin (2019) found that customer satisfaction positively affects attitudinal loyalty. This finding shows that when customers are satisfied with the provided service, they will build a psychological bond to it, which might flourish in long-term and current relationships. Customers might show purchase intention or willingness to recommend the service to others. This relationship will lead to repetitive purchase behavior that would undoubtedly benefit the organization. Woratschek et al. (2020) and Slack and Singh (2020) also found that customer satisfaction significantly influences customer loyalty. Satisfied and happy customers tend to be loyal customers because customer satisfaction can make an emotional affection to a service provider and generate loyalty (Othman et al., 2020). In the context of healthcare service in the hospital, Chahal and Kumari (2010) found that patient satisfaction positively impacts patient loyalty. When patients are satisfied with the provided service, they will return to the same hospital if they need the same or different treatment and recommend the hospital to others who need the same treatment as they have experienced. Hence, the following hypothesis is:

**$H_3$. Patient satisfaction has a positive impact on patient loyalty.**

**Relationship between Health Care Service Quality, Patient Satisfaction, and Patient Loyalty**

Many studies have explored the effect of customer satisfaction on the relationship between service quality and customer loyalty. Boonlertvanich (2019) found that service quality impacts customer loyalty directly and indirectly via satisfaction. Yadav and Rai (2019) also confirmed this finding. In the context of healthcare service in the hospital, Aliman and Mohamad (2013), Shabbir et al. (2016), and Fatima et al. (2018) found that patient

satisfaction mediates the relationship between health care service quality and patient loyalty. Patient satisfaction towards a high level of health care service quality allows the patients to endorse the hospital for the same and different services to others, share positive experiences about the hospital, and prefer the same hospital for future treatments. This finding shows the relevance of improving service quality and maximizing patient satisfaction to attract patients to use health care service quality of a specific hospital in the future and recommend it to other people. Hence, the following hypothesis is:

**H₄. Patient satisfaction affects the relationship between health care service quality and patient loyalty**
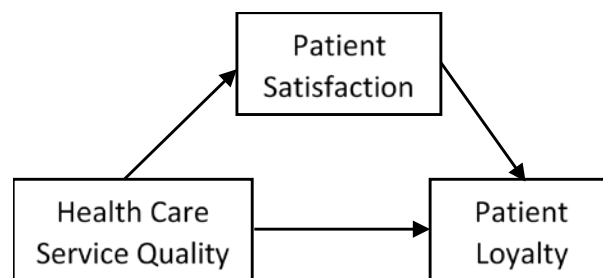


**Figure 1.**

Conceptual Model

**RESEARCH METHODS**

**Research Population and Sample**

This research was conducted in mother and child hospitals in Surabaya. The population which becomes an object in this research is all patients who got medical services in mother and child hospital, both medical services in an emergency room and clinic (OB-GYN and child clinic).

The sampling technique used in this research is accidental sampling, which is consumers who accidentally met the researcher and considered appropriate as data sources. The researcher chose this method because the characteristics of the patients in both hospitals were relatively homogeneous. The process of collecting data is by selecting patients who got medical service in mother and child hospital randomly and requesting the patients to fill out the questionnaire, which is given by the researcher. The researcher could still measure patient satisfaction and loyalty because the patients who filled out the questionnaire were permitted to discharge from the hospital and had got all the medical services they needed (outpatients).

In total, 65 questionnaires were distributed to the patients. 15 questionnaires did not meet the criteria. Therefore, 50 questionnaires were considered valid for further analysis. When this research was conducted, there were eight mother and child hospitals in Surabaya, but the researcher only chose two hospitals as research locations. It is because these hospitals have been accreditated by KARS (Komisi Akreditasi Rumah Sakit), have operated for more than five years, and have a good reputation in Surabaya.

**Operational Definition**

Health care service quality (HCSQ) is measured by several indicators as described before: physician's care, nurse's care, supportive staff, operational activities, and physical maintenance (Chahal and Mehta, 2013; Shabbir et al., 2016). Patient loyalty will be measured by repurchase intention in using health care service and word-of-mouth (WoM), where patients give information regarding a product or a brand of medical assistance to other potential patients (Donio' et al. and Høst and Knie-Andersen in Shabbir et al., 2016). Patient satisfaction will be measured by how much hospital services can exceed patient expectations (Chahal and Mehta, 2013). To measure these variables, the mechanism of instrument preparation in this research used observation and questionnaire techniques by asking respondents to fill out a questionnaire.

**RESULTS AND DISCUSSION**

**Respondent Profile**

From the 50 respondents obtained, two hospitals became data collection places, i.e., RSIA Lombok Dua Dua Lontar Surabaya and RSIA Nur Ummi Numbi (NUN). Table 1 shows the distribution of samples based on the data collection place.

**Table 1.**

Distribution of Sample based on Data Collection Place

| Hospital | Number of Samples | Percentage |
|---|---|---|
| RSIA Lombok Dua Dua Lontar Surabaya | 39 | 78% |
| RSIA Nur Ummi Numbi (NUN) | 11 | 22% |
| Total | 50 | 100% |

Based on gender, there were two genders, i.e., male and female. Table 2 shows the distribution of samples based on gender.

**Table 2.**

Distribution of Sample based on Gender

| Gender | Number of Samples | Percentage |
|---|---|---|
| Male | 7 | 14% |
| Female | 43 | 86% |
| Total | 50 | 100% |

Based on the educational level, there were many levels, ranging from senior high school to postgraduate. Table 3 shows the distribution of samples based on educational level.

**Table 3.**

Distribution of Sample based on Educational Level

| Educational Level | Number of Samples | Percentage |
|---|---|---|
| Senior High School | 11 | 22% |
| Undergraduate | 27 | 54% |
| Postgraduate | 3 | 6% |
| Others | 9 | 18% |
| Total | 50 | 100% |

Based on occupation, there were many types of occupations, ranging from a private employee, government employee, entrepreneur, and others. Table 4 shows the distribution of samples based on occupation.

**Table 4.**

Distribution of Sample Based on Occupation

| Occupation | Number of Samples | Percentage |
|---|---|---|
| Government employee | 1 | 2% |
| Private employee | 21 | 42% |
| Entrepreneur | 10 | 20% |
| Others | 18 | 36% |
| Total | 50 | 100% |

Based on income per year, the value is diverse, ranging from less than fifty million rupiahs per year to over a million rupiah per year. Table 5 shows the distribution of samples based on income per year.

**Table 5.**

Distribution of Sample Based on Income per Year

| Income per Year | Number of Samples | Percentage |
|---|---|---|
| < 50 million | 1 | 2% |
| 50-100 million | 21 | 42% |
| > 100 million | 10 | 20% |
| Total | 50 | 100% |

Based on the residence, respondents come from various places, ranging from cities in Sumatra Island to Maluku Island. Table 6 shows the distribution of samples based on residence.

**Table 6.**

Distribution of Sample Based on Residence

| Residence (City/Region) | Number of Samples | Percentage |
|---|---|---|
| Gresik | 4 | 8% |
| Jember | 1 | 2% |
| Malang | 1 | 2% |
| Maluku | 1 | 2% |
| Medan | 1 | 2% |
| Sampang | 1 | 2% |
| Sidoarjo | 2 | 4% |
| Surabaya | 39 | 78% |
| Total | 50 | 100% |

Based on the commonly visited hospital, samples generally visited two types of hospitals, i.e., a private hospital and a government hospital. Table 7 shows the distribution of samples based on the commonly visited hospital.

**Table 7.**

Distribution of Sample based on Residence

| Commonly Visited Hospital | Number of Samples | Percentage |
|---|---|---|
| Government hospital | 6 | 12% |
| Private hospital | 44 | 88% |
| Total | 50 | 100% |

Based on age, it appears that the average age of the respondents is 30 years old. Table 8 shows detailed information regarding the age of respondents.

**Table 8.**

Age Profile of Respondents

| | |
|---|---|
| Average | 30.3 |
| Standard Deviation | 3.507 |
| Minimum | 24 |
| Maximum | 37 |

Based on the frequency of hospital visits in a year, it appears that the respondents commonly visit the hospital four to five times a year. Table 9 shows detailed information regarding the frequency of hospital visits of respondents.

**Table 9.**

Frequency Profile of Hospital Visit in a Year

| | |
|---|---|
| Average | 4.6 |
| Standard Deviation | 3.86 |
| Minimum | 1 |
| Maximum | 12 |

### Descriptive Statistics

In this research, there are three variables, i.e., health care service quality (HCSQ) as an independent variable, patient satisfaction as a mediator variable, and patient loyalty as a dependent variable.

There are several indicators to measure the HCSQ variable, i.e., physician's care, nurse's care, supportive staff, operational activities, and physical maintenance. The result of the descriptive statistics for this research can be seen in Table 10.

**Table 10.**

Descriptive Statistics

| Indicator | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Physician's Care | 50 | 3.1 | 5.0 | 4.176 | 0.482 |
| Nurse's Care | 50 | 2.9 | 5.0 | 4.028 | 0.550 |
| Supportive Staff | 50 | 2.667 | 5.0 | 3.790 | 0.539 |
| Operational Activities | 50 | 2.571 | 5.0 | 3.929 | 0.617 |
| Physical Maintenance | 50 | 2.571 | 5.0 | 3.791 | 0.585 |
| Patient Satisfaction | 50 | 2.857 | 5.0 | 4.011 | 0.620 |
| Patient Loyalty | 50 | 2.222 | 5.0 | 3.587 | 0.613 |

### Reliability and Validity Results

Cronbach's alpha coefficient was used to check internal consistency among variables, which show the degree to which the items that make up the scale are measuring the same underlying attribute. The recommended minimum level is 0.7 to be considered reliable (Pallant, 2016). The validity analysis conduct through content validity. It was carried out with the help of literature review and comparison with other models with the same variables and relationship.

**Table 11.**

Reliability and Correlations Results

| | Variables | N items | α | Correlations | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Physician's Care | 10 | 0.905 | 1 | | | | | | |
| 2 | Nurse's Care | 10 | 0.950 | .656** | 1 | | | | | |
| 3 | Supportive Staff | 6 | 0.823 | .645** | .619** | 1 | | | | |
| 4 | Operational Activities | 7 | 0.893 | .670** | .637** | .738** | 1 | | | |
| 5 | Physical Maintenance | 7 | 0.875 | .610** | .568** | .644** | .758** | 1 | | |
| 6 | Patient Satisfaction | 7 | 0.954 | .677** | .720** | .723** | .790** | .774** | | |
| 7 | Patient Loyalty | 9 | 0.880 | .562** | .573** | .643** | .580** | .738** | .729** | 1 |

**. Correlation is significant at the 0.01 level (2-tailed).

Based on Table 11, all the scores are above 0.7, with the lowest value is 0.823, and the highest value is 0.95. Therefore, it can be concluded that all variables yield reliable scores. Correlations among dimensions of health care service quality, patient satisfaction, and patient loyalty proposed positive and significant correlation value with p-value < 0.01. All measurements of dimensions of health care service quality positively correlate to patient satisfaction and patient loyalty.

**Hypothesis Testing**

Hypothesis testing is used to find out if there are direct effects between the independent variable and the mediator variable, direct effect between the mediator variable and the dependent variable, and the indirect effect between the independent variable and dependent variable. Hypothesis testing is conducted by using a path analysis test. The causal step and product of coefficients strategy will be used to find out the effect of every variable.

In the causal step strategy, the hypothesis accepted if p-value < 0.05 for direct or partial effect. In the product of coefficient strategy, we will see the z-value to determine the indirect significance value of the independent variable on the dependent variable. If $z > 1.96$, then there is a significant indirect effect between the independent variable and the dependent variable.

**Table 12.**

Model Summary of HCSQ Affecting Patient Satisfaction ($R^2$)

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| 0.8646 | 0.7475 | 0.0992 | 142.0694 | 1.0000 | 48.0000 | 0.0000 |

Based on Table 12, the value of $R^2$ is 0.7475. This value means that the effect of HCSQ on patient satisfaction is 74.75%, while another 22.25% is affected by another factor. Also, we can see that the p-value is 0.0000 < 0.05. This result indicates that there is a significant relationship between HCSQ and patient satisfaction. So, it can be concluded that the variability of patient satisfaction, which can be explained by using the HCSQ variable, is 74.75%.

**Table 13.**

Path Analysis Result of HCSQ on Patient Satisfaction (Output Coefficients)

| | coeff | se | t | p | LLCI | ULCI | Standardized coefficients |
|---|---|---|---|---|---|---|---|
| constant | -0.5519 | 0.3854 | -1.4318 | 0.1587 | -1.3268 | 0.2231 | - |
| TOTHC | 1.1493 | 0.0964 | 11.9193 | 0.0000 | 0.9554 | 1.3432 | 0.8646 |

Based on Table 13, it is known that the p-value of the HCSQ variable is 0.0000 < 0.05. Thus, HCSQ significantly affects the patient's satisfaction variable.

**Table 14.**

Model Summary of HCSQ and Patient Satisfaction Affecting Patient Loyalty (R2)

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| 0.751 | 0.564 | 0.171 | 30.399 | 2.000 | 47.000 | 0.000 |

Based on Table 14, the value of $R^2$ is 0.5640. This value means that the effect of HCSQ and patient satisfaction on patient loyalty is 56.4%, while another 43.6% is affected by another factor. Also, we can see that the p-value is 0.0000 < 0.05. This result indicates that there is a significant relationship between HCSQ and patient satisfaction towards patient loyalty. Thus, it can be concluded that the variability of patient satisfaction, which can be explained by using the HCSQ variable is 56.4%.

**Table 15.**

Path Analysis Result of HCSQ and Patient Satisfaction on Patient Loyalty (Output Coefficients)

| | coeff | se | t | p | LLCI | ULCI | Standardized coefficients |
|---|---|---|---|---|---|---|---|
| constant | 0.0525 | 0.5163 | 0.1017 | 0.9194 | -0.9861 | 1.0911 | - |
| TOTHC | 0.4748 | 0.2517 | 1.8865 | 0.0654 | -0.0315 | 0.9812 | 0.3616 |
| TOTPS | 0.4110 | 0.1893 | 2.1709 | 0.0350 | 0.0301 | 0.7919 | 0.4161 |

Based on Table 15, it is known that the p-value of HCSQ is 0.0654 > 0.05 and the p-value of patient satisfaction is 0.0301 < 0.05. Then, it is known that HCSQ has no significant direct effect on patient loyalty, but there is a significant effect on patient satisfaction. Thus, it is concluded that HCSQ has no significant direct effect on patient loyalty due to the mediator variable, which is patient satisfaction.

If we look at the result from Table 14, there is an indirect effect of HCSQ on patient's loyalty through the patient's satisfaction. So, from this result, it can be assumed that patient satisfaction is a mediator variable. This research used a simple mediation model with one mediator variable. The mediational hypothesis is usually tested in 2 ways, namely through causal step and product of coefficients.

In a causal step strategy, the calculation of beta is done. The coefficient for each path is described in Figure 1 above. The coefficient for each path is obtained from the result of each path analysis, as shown in Table 15. The coefficient a represents the regression coefficient between the independent variable (X) and the mediator variable (M). Coefficient b represents the regression coefficient between the mediator variable (M) and the dependent variable (Y). Moreover, coefficient c' represents the coefficient regression between the

independent variable (X) and the dependent variable (Y). In order to see each effect of each path, the following calculation is done as follows:

For the direct effect, the effect of HCSQ (X) on patient satisfaction (M) is a = 1.1493, the effect of patient satisfaction (M) on patient loyalty (Y) is b = 0.4110, and the effect of HCSQ (M) on patient loyalty (Y) is c' = 0.4748. For the indirect effect, the effect of HCSQ (X) on patient loyalty (Y) through patient satisfaction (M) is ab = 0.4724. Finally, for total effect, the effect of HCSQ (X) on patient loyalty (Y) through patient satisfaction (M) is c = a + b = 1.5603. The result of the causal step test can be seen in Table 16.

**Table 16.**

Causal Step Test Result of HCSQ on Patient Loyalty

Direct effect of X on Y

| Effect | se | t | p | LLCI | ULCI | c'_ps | c'_cs |
|--------|--------|--------|--------|---------|--------|--------|--------|
| 0.4748 | 0.2517 | 1.8865 | 0.0654 | -0.0315 | 0.9812 | 0.7749 | 0.3616 |

Indirect effect(s) of X on Y:

|  | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTPS | 0.4724 | 0.2075 | 0.0873 | 0.9174 |

Partially standardized indirect effect(s) of X on Y:

|  | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTPS | 0.771 | 0.3342 | 0.1439 | 1.4621 |

Completely standardized indirect effect(s) of X on Y:

|  | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTPS | 0.3597 | 0.1573 | 0.0659 | 0.6849 |

Looking at the direct effect of mediation model of HCSQ variable (X) on patient loyalty (Y) is not significant (c' coefficient = 0.3616, p-value = 0.0654 > 0.05), it is concluded that the mediation occurred in this model is complete mediation. While looking at the value of coefficient c' is 0.4748 (positive), the same with the value of coefficient ab, which is 0.4724 (positive). It can be concluded that the mediation model in this research is consistent and has a positive effect.

For indirect effect, from Table 15, it can be seen that the effect value is between the upper bound and lower bound of bootstrap value (95% CI). Then, the indirect effect of HCSQ on patient loyalty is positive. Furthermore, because the bootstrap value is above zero, then this

effect is statistically significant. Thus, it can be concluded that HCSQ has an indirect and significant effect on patient loyalty.

In the product of coefficients, to find out the indirect effect significance of HCSQ on patient loyalty, the Sobel test is used. The estimation of the standard error value of ab is:

$$se_{ab} = \sqrt{(a^2 se_b^2 + b^2 se_a^2 + se_a^2\ se_b^2)}$$

where $se_a^2$ is squared standard errors of a and $se_b^2$ is squared standard errors of b. Thus, seab of this model is:

$$se_{ab} = \sqrt{((1.1493)2(0.1893)2 + (0.4110)2\ (0.0964)2 + (0.0964)2\ (0.1893)2)}$$

$$se_{ab} = 0.2219$$

After calculating seab, hypothesis testing can be done by calculating the z-value:

$$z = ab/se_{ab}$$

$$z = 0.4724/0.2219$$

$$z = 2.1289$$

z-value = 2.1289 > 1.96, thus there is a significant indirect effect of HCSQ on patient loyalty.

## Discussion

Based on Table 14 and 15, the regression coefficient value of HCSQ on patient loyalty (c' value) is 0.4748 > 0 and the p-value is 0.0654 > 0.05. Then, $H_1$ is rejected. This finding is not consistent with the previous studies (Boonlertvanich, 2019; Fatima et al., 2018; Makanyeza and Mumiriki, 2016; Slack and Singh, 2020). This inconsistency can be explained by the unique characteristics of patients in mother and child hospital. Based on the findings, we found that the patients commonly visit the hospital four to five times a year with a minimum of one visit a year. This data shows that patient loyalty will not be shown dominantly by the frequency of visits or repurchase intention but more on a higher level of word-of-mouth and how discharged patients recommend the hospital to others.

Based on Table 11, the regression coefficient value of HCSQ on patient satisfaction (a value) is 1.1493 > 0 and the p-value is 0.0000 < 0.05. Then, $H_2$ is accepted. This finding is consistent with the prior studies (Amin and Zahora Nasharuddin, 2013; Demirci Orel and Kara, 2014; Mohamed and Azizan, 2015; Özkan et al., 2019; Su et al., 2016) that there is a relationship between health care service quality and patient satisfaction. When health care service is delivered and perceived as high-quality service, patients' expectations will be more fulfilled, patients will give positive emotional evaluation concerning the service, and patients satisfaction will come as a result. Thus, it can be concluded that the perception of health care service quality significantly has a positive effect on patient satisfaction.

Based on Table 14, the regression coefficient value of patient satisfaction on patient loyalty (b value) is 0.4110 > 0 and the p-value is 0.0350 < 0.05. Then, $H_3$ is accepted. This finding is in line with the prior studies (Akroush and Mahadin, 2019; Chahal and Kumari, 2010; Slack and Singh, 2020; Woratschek et al., 2020), which shows that patient satisfaction positively impacts patient loyalty. Satisfied patients will be more likely to come again in the future when they need the same or different services, spread positive reviews about the hospital, and recommend the provided services to other people who need the same or different services. Thus, it can be concluded that patient satisfaction significantly has a positive effect on patient loyalty.

Based on the result of the Sobel test, the calculated z-value is 2.1289 > 1.96. Then, $H_4$ is accepted. This result means that the perception of health care service quality will increase patient satisfaction. If the perception of health care service quality is high, then patient loyalty will also increase. This finding is consistent with earlier studies (Boonlertvanich, 2019; Fatima et al., 2018; Shabbir et al., 2016; Yadav and Rai, 2019), which show that patient satisfaction mediates the relationship between health care service quality and patient loyalty. When the patients are satisfied with the health care service delivered in a high-quality manner, there is a higher chance that the patients will use the services in case there is a need for similar of different services in the future. This condition will lead to positive reviews about the services and encourage others to use the provided services in the hospital when they need them. Concerning $H_1$, it shows that HCSQ indirectly affects patient loyalty through patient satisfaction. While the higher frequency of repurchase does not always indicate patient loyalty, especially in the context of mother and child hospital, patients who are satisfied with the service will be more likely to recommend the service to others as one of the forms of patient loyalty. Thus, it can be concluded that patient satisfaction significantly affects the relationship between the perception of health care quality service and patient loyalty.

**CONCLUSION**

This study aims to investigate the interaction and relationship among health care service quality, patient satisfaction, and patient loyalty. In the context of mother and child hospital, the mediating effect of patient satisfaction on the relationship between health care service quality and patient loyalty was also analyzed in this context. The study was conducted in two accreditated mother and child hospitals in Surabaya using accidental sampling technique, and 50 valid samples were obtained. Based on the result of data analysis and discussion, the researcher reaches conclusions regarding the impact of perception of health care service quality on patient satisfaction and loyalty in mother and child hospital.

**Victor Pratama**
**Sri Hartini**

This study shows that the perception of health care service quality does not significantly have a positive effect on patient loyalty in the context of mother and child hospital. Although previous studies confirm significant impact, this finding implies the need to measure patient loyalty with other measures or focus on one dimension, i.e., word-of-mouth, which is more aligned with the unique characteristics of the patients in mother and child hospital. Moreover, the perception of health care service quality significantly has a positive effect on patient satisfaction. The perception of health care service quality is related highly to the brand image of a hospital. Thus, the hospital's marketing team must keep building a favorable brand image to attract customers to get health care services in the hospital.

Patient satisfaction significantly has a positive effect on patient loyalty. This relationship is also crucial for hospitals because, of course, patients or customers who are satisfied with the product or service will be more likely to make a purchase and spread positive word-of-mouth about the hospital. Furthermore, patient satisfaction mediates the relationship between the perception of health care service quality and patient loyalty. Patient satisfaction is the primary key that determines the perception of health care service quality in a hospital, which will affect patient loyalty in the future.

Certain limitations within this research need to be addressed. First, the study was conducted in the hospitals of Surabaya only, with the patients were mostly from Surabaya. This study can be extended to the mother and child hospital in other places to get more generalizable results. Second, there is a need to develop a new measure to study the relationship of patient loyalty with other variables, especially when repurchase intention or frequency of visit cannot fully describe the whole story of patient loyalty in mother and child hospital. Third, this study only focused on the overall healthcare service quality, patient loyalty, and patient satisfaction of mother and child hospital. Further studies can also investigate how these variables interact in more specific services or departments. Studies in mother and child hospital are also limited, so it will be interesting to conduct deeper studies in this context.

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