Analysis of Post-COVID-19 Hospital Service Quality: A Study Based on Patient Perceptions

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Abstract: This study provides a conceptual and empirical investigation of the effect of items on measuring the quality of post-COVID-19 health services based on patient perceptions in the health sector. The proposed measurement item for Consumer Perceived Value Healthcare (CPV Healthcare) against Healthcare Service Quality (HEALTHQUAL) was tested using data collected from a hospital in Medan City from 253 respondents. The data set included 185 patients and 68 respondents from the public from June 2022 to November 2022. This research is associative research using a quantitative method approach. Data analysis used SPSS with ANOVA testing, Simple Regression, Pearson Correlation, and t-test for correlation analysis of dependent variable measurement items (CPV Healthcare = 27 items) on independent variables (HEALTHQUAL = 32 items) in patient care (inpatients, outpatients, and family members of patients in the emergency room) and between patients and groups of the general public. The results showed a strongly significant difference between CPV Healthcare measurement items and patient and community HEALTHQUAL. This study underscores the most significant dimension of CPV Healthcare and validates the relationship between the value of Service Quality in the healthcare sector which is a function of transaction value and self-satisfaction value. Patients like personal care and relief from depressive moods when cared for by professional nurses and doctors in the hospital. This study is limited theoretically to assess the relationship between CPV Healthcare and Healthcare SERVQUAL. Need to be assessed in future studies, such as consumer experience, experience and job satisfaction of hospital staff (nurses & doctors), patient ethnicity, and hospital image, need to be assessed in future work.

Keywords: Service Quality, Consumer Perceived Value, Healthcare, Post COVID-19, Hospital

1. Introduction

COVID-19 is spreading rapidly around the world. WHO reported on March 11, 2020, that the COVID-19 outbreak caused by SARS-CoV2 was a Public Health Emergency of International Concern [1]. In Indonesia, COVID-19 was first reported on March 2 2020 with 2 cases and continued to increase until March 14 2020 the number of cases was 96 people with 5 deaths [2].

The growth rate of the number of COVID-19 patients has an impact on the availability of hospital inpatient rooms in several areas. Currently, many referral hospitals are unable to accept new patients, due to the increasing number of COVID-19 patients. However, several non-referral hospitals that also treat COVID-19 patients have experienced a decrease in patients [3]. In the survey, 71.8% of respondents

said they had never visited a hospital or clinic since the COVID-19 pandemic, while 65.5% said they consulted digital health more often [4].

This drastic decrease is the impact of people's fear of going to the hospital. People are afraid that if they interact with nurses and doctors, they will catch COVID-19. Community concerns about transmission in hospitals consequently affect the stability of hospital income. In addition, people are afraid of being diagnosed with the Coronavirus. The perception of the quality of the medical team's service is the focus of the public visiting the hospital in the post-COVID-19 pandemic. The society also expects confidentiality guarantees, not only protecting the patient's body and mind. In addition, patients expect the medical team's ability, skill, and patience in carrying out their duties. This is an indicator of the community's assessment of the quality of the medical team's services. Good health services can be felt by patients in the form of maintaining patient safety, reducing service negligence, improving service quality, diagnosing diseases and actions accurately, as well as the way doctors convey information to patients [5].

Improving the quality of hospital services can provide patient satisfaction. Good quality health services will show high patient satisfaction [6]. By Choi et al.'s research at medical institutions in South Korea, the results of the quality of medical services are positively related to the level of patient satisfaction [7]. Everyone has the same right to obtain optimal health status and everyone must participate in maintaining and improving the health status of individuals, families, and their environment [8].

As part of the health care system, hospitals provide general health services to the general public through various health services including medical services, medical support services, rehabilitation, and integrated health services [9] and those carried out by organized professional medical personnel [10]. There are negative and positive perceptions from the public about health services in post-COVID-19 hospitals getting worse, especially when viewed from information on social media [11]. Although it is interesting, other studies have stated that apart from the negative effects of higher psychological risk, higher perceptions of knowledge about COVID-19 have a significant positive effect on people's decision-making processes [12].

Hospitals that carry out health service efforts efficiently and effectively, as a place for basic public health services, must be able to function as well as possible with the support of various related parties. Health services are one of the components of a national health system carried out by the government directly related to the community in terms of preventive, promotive, curative, and rehabilitative and also access to health services is only often seen from the perspective of health service providers, while the community's perspective is given less attention [13].

Several hospitals in Medan were empty of patients during the COVID-19 pandemic [14]. The percentage of residents visiting hospitals and community health centers (PUSKESMAS) during the COVID-19 pandemic has decreased. Visitors are suspected of being worried about contracting the virus [15] and the COVID-19 pandemic caused several changes in consumer behavior. This is due to the limited mobility of the community to carry out activities that were usually carried out before the pandemic [16].

Even though many hospitals in the regions are overwhelmed by the increase in patients infected with the coronavirus, there are also not a few hospitals that have experienced a decrease in the number of patients, especially hospitals that were not designated as COVID-19 referral hospitals by the government [17]. COVID-19 cases in North Sumatra in the early 2022 period continued to increase rapidly and reached 2,349 per day. These cases are higher than the peak of the second wave of cases triggered by the Delta variant in August 2021, which was 2,045 cases per day. After the peak of these cases, the number of new cases did decrease to 1,934 cases and then dropped again to 1,382 cases [18].

Seeing the phenomenon above which continues to increase, the people of the city of Medan have growing concerns, starting from the aspect of inadequate socialization to the obstruction of residents' access to health facility services. If previous studies focused on evaluating the quality of health services based on various approaches (SERVQUAL, SERVPERF, or mixed models) before and during the COVID-19 pandemic, we propose in this research for the quality of post-COVID-19 health services with the approach taken by Lee & Kim, in their research which proposed the HEALTHQUAL model [19].

Healthcare facilities during the COVID-19 period became something terrible for the community, where people who were sick became afraid to come to health services for fear of being diagnosed positively with COVID-19, whether health services during the COVID-19 period increased or decreased. For this reason, this research will analyze consumer perceptions of the quality of health services in the post-COVID-19 period.

Considering the limited time and cost of conducting larger research. Based on the formulation of the problem above.

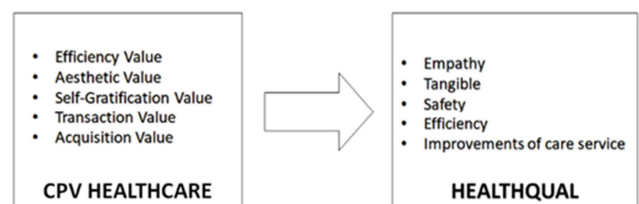*Figure 1. Conceptual Framework.*

2. Literature Review

2.1. Healthcare Service Quality

Donabedian's research [20] defines the quality of health services as "the application of medical science and technology in a way that maximizes health benefits without simultaneously increasing risks". While this research reflects a definition that emphasizes evaluating changes due to a

pandemic. While Leebov et al. [21] highlighted the assessment of progressive and preventive measures in healthcare by doing the right thing and making continuous improvements to services, getting the best clinical outcomes from doctors, satisfying all hospital customers, retaining talented staff, and maintaining good financial performance. in the hospital. This definition according to Leebov et. al, emphasizes that the quality of health services is delivered to meet customer expectations and patient needs, as well as to improve care by skilled professional providers in hospitals.

However, the quality of health services is difficult to determine and measure depending on the type of care, patient perception, and interactions between patients and providers including the characteristics of care services and the hospital's ethical culture [19], especially during a pandemic, a different approach is needed in services that are demanded more quickly. and more responsive. So that the COVID-19 pandemic has changed consumer behavior regarding the view the quality of health services in hospitals.

The dimensions that will be used to determine post-COVID-19 patient satisfaction in this study use the HEALTHQUAL model from Lee & Kim [19]. This model is an integrated model for measuring the quality of health services based on the patient's view, the hospital's view, and the perspective of the accreditation agency. The model offered by Lee & Kim is a combination of the SERVQUAL (service quality) model suggested by Parasuraman [19] with the five dimensions of service quality namely tangible, reliability, certainty, employee attitude, and empathy. Then combined with the SERVPERF (service performance) model suggested by Cronin and Taylor [22] with 22 service performance items. Proposed HEALTHQUAL model, a set of measurement items for the quality of health services, based on the type of care service (provider aspect) and patient. He also proposed the five most important criteria for evaluating healthcare providers. Then, Health Quality has five dimensions, namely the degree of improvement in care services (8 items), tangible quality aspects (5 items), efficiency quality aspects (6 items), safety quality aspects (6 items), and empathy quality aspects (7 items). So according to this study measures the quality of service and performance of nurses and medical staff at the hospital based on patient perceptions.

2.2. Consumer Perceived Value Healthcare

Many studies use the understanding of consumer value which is defined by Zeithaml as the benefits of a product or service based on an assessment made by consumers [22]. So, patients as consumers from the hospital will receive services by expecting and wanting the value of the services or product benefits they receive. As part of the system in health care, patient satisfaction is the main indicator.

Patients are an indicator that greatly influences the quality of medical services in hospitals [19]. And for patients, satisfaction is an indicator of the provider's choice of health [23]. So that patient satisfaction can help hospitals make the necessary changes in the medical processes carried out to better satisfy patients.

Many different researchers define customer perceived value. In this study, we adopted and used the Consumer Perceived Value (CPV) Healthcare dimension according to Chahal & Kumari's research [24] because it is in line with research in the health sector to determine consumer perceptions of health services in hospitals. In our research, we will use the dimension of Value-Based Health Care Perceived by Consumers with the dimensions offered by Chahal & Kumari, which are excerpts from the definitions of experts according to the dimensions, namely Efficiency Value (5 items) [25], Aesthetic Value (5 items) [26], Self-Satisfaction Value (4 items) [26], Social Interaction Value (3 items) [27], Transaction Value (6 items) [28-29] and Acquisition Value (4 items) [22, 25].

The Research Hypotheses: "Consumer Perceived Value-Based Healthcare effect on Healthcare Service Quality has a significant in hospitals".

3. Methodology

This research is a type of associative research that aims to determine the relationship between CPV Healthcare and Quality Service Healthcare, through a quantitative method research approach [30]. Statistical analysis was performed to understand the effect of CPV Healthcare on HEALTQUAL. This method is used so that the results are interpreted numerically and the effect of the independent variables will be explained statistically [30].

The population of this study was all outpatients who came to five public hospitals in Medan City from June to November 2022, totaling 692 people. The final sample size of inpatients was identified based on field visits. The final sample was determined using the Slovin method with a set precision (in the study, the precision was set at 5%) so a sample of 253 was obtained. All measures used a 5-point Likert scale (1 = "strongly disagree", and 5 = "strongly agree").

After the questionnaires were collected, the data was entered into SPSS 26 Statistics for further statistical analysis. Correlation and regression were used to determine the effect of the independent variable (CPV Healthcare) with 32 items on the dependent variable (HEALTQUAL) with 27 items. Questionnaires were randomly distributed to 253 inpatients at General Hospital in Medan. There are difficulties in collecting data because patients are sometimes difficult to work with because they are still under the condition Enforcing Limitations on Community Activities that are used to overcome the COVID-19 Pandemic in Indonesia.

4. Analysis and Results

4.1. Demographic Information Analysis

The demographic segment of the questionnaire stimulated the statistical classification of the demographics of the patients who responded to the questionnaire. Survey

respondents, by including gender, age, occupation, and education. The chart below shows detailed demographic information for respondents.

***Table 1.** Profile of Participants.*

Demographics Characteristic		f = 253	%
Gender	Male	131	52
	Female	122	48
Age	25 -35	55	22
	36 – 45	26	10
	46 – 55	98	39
	56 – 65	46	18
	66 - up	28	11
Education	< High School	69	27
	High School	44	17
	Diploma	55	22
	Bachelor	85	34
Occupation	Farmer / Fisherman	17	7

Demographics Characteristic	f = 253	%
Entrepreneur / Professional	83	33
Government Employees	81	32
Privat Employee	72	28

Research Respondents.

4.2. Validity Test Results

Based on the question items that will be tested for validity are as many as 59 items. The number of respondents or N analyzed was 253 samples. The validation process was assisted by SPSS with a significance level of 95% (α = 5%) and df = 253 − 2 = 251, then r_{table} = 0.1234 then compared between r_{count} and r_{table} where if $r_{count} > r_{table}$ then the questionnaire items are valid, if otherwise invalid. r_{count} other terms are *the item-rest correlation* or *the corrected item-total correlation* [30]. Shown in Table 2. Validity Test.

***Table 2.** Validity Test Results.*

Dimension & Measurement Variables	r-count
CONSUMER PERCEIVED VALUE HEALTHCARE – CPV HEALTH [24]	
X1.1. Efficient staff - Efficiency Value	.731*
X1.2. Explanation quality (doctor) - Efficiency Value	.782*
X1.3. Diagnostic efficiency (doctors) - Efficiency Value	.683*
X1.4. Technical efficiency (support staff) - Efficiency Value	.694*
X1.5. Technical efficiency (nursing staff) - Efficiency Value	.561*
X1.6. Physically facilities - Aesthetic Value	.655*
X1.7. Neat & clean corridors - Aesthetic Value	.647*
X1.8. Clean & functional washrooms - Aesthetic Value	.696*
X1.9. Fresh & clean apparel - Aesthetic Value	.743*
X1.10. Proper ventilation in wards - Aesthetic Value	.701*
X1.11. Relief from depressive mood - Self-Gratification Value	.815**
X1.12. Easing of negative mood - Self-Gratification Value	.781**
X1.13. Elimination of pain - Self-Gratification Value	.655*
X1.14. Personalized Attention - Self-Gratification Value	.673*
X1.15. Socializing - Self-Gratification Value	.682*
X1.16. Conducive interaction (doctors) - Self-Gratification Value	.799**
X1.17. Conducive interaction (nurses) - Self-Gratification Value	.659*
X1.18. Responsiveness (staff) - Transaction Value	.686*
X1.19. Post-medical treatment - Transaction Value	.737*
X1.20. Personal care - Transaction Value	.847**
X1.21. Effective medical advice - Transaction Value	.701*
X1.22. Trust - Transaction Value	.664*
X1.23. Psychological satisfaction - Transaction Value	.607*
X1.24. Money's worth - Acquisition Value	.663*
X1.25. Services at a reasonable price - Acquisition Value	.596*
X1.26. Qualitative services - Acquisition Value	.526
X1.27. Latest technology - Acquisition Value	.291
HEALTHCARE SERVICE QUALITY – HEALTQUAL [19]	
Y1.1. Polite attitudes of employees - Empathy	.627*
Y1.2. Explaining the detail - Empathy	.647*
Y1.3. Listen to the patient - Empathy	.606*
Y1.4. Understand and consider the patient's situation - Empathy	.713*
Y1.5. A sense of closeness and friendliness - Empathy	.514
Y1.6. The hospital knows what the patient wants - Empathy	.473
Y1.7. Hospital understands the patient's problems - Empathy	.498*
Y1.8. Securing advanced medical equipment - Tangible	.614*
Y1.9. Securing staff, advanced skills & knowledge - Tangible	.655*
Y1.10. Convenient facilities - Tangible	.680*
Y1.11. Cleanliness of employee uniforms - Tangible	.684*
Y1.12. Overall cleanliness of the hospital - Tangible	.717*
Y1.13. Comfortable & safe environment treatment - Safety	.625*

Dimension & Measurement Variables	r-count
Y1.14. Feeling doctors would not misdiagnosis - Safety	.657*
Y1.15. Feeling nurses would not make mistakes - Safety	.416
Y1.16. Confidence medical proficiency hospital - Safety	.432
Y1.17. The hospital environment is safe from infection - Safety	.568*
Y1.18. Comfortable and safe environment for patients - Safety	.629*
Y1.19. Attitudes not using unnecessary medication - Efficiency	.495
Y1.20. Efforts appropriate treatment methods - Efficiency	.556*
Y1.21. Reasonable medical expenses - Efficiency	.410
Y1.22. Appropriateness cost medical services - Efficiency	.452
Y1.23. Convenience for treatment procedures - Efficiency	.380
Y1.24. Efforts for reducing unnecessary procedures - Efficiency	.452
Y1.25. Appropriateness care service provided - Improvements	.379
Y1.26. Recognition of best treatment medical staff - Improvements	.346
Y1.27. Medical result efforts & treatment - Improvements	.279
Y1.28. Patient condition after hospital care - Improvements	.314
Y1.29. Explanations patient prevent diseases - Improvements	.320
Y1.30. Efforts & willingness to prevent disease - Improvements	.417
Y1.31. Disease in hospital treatment - Improvements	.420
Y1.32. Disease prevention to communities - Improvements	.429

Note: (r-table = 0.1234) correlation is significant at the 0,05 level (2-tailed).
Importance Impact: ** High, *Medium

The results of research on the effect of independent variables on customer loyalty were analyzed through different statistical analyses, using SPSS Statistics version.26. It can be seen from the results of the correlation coefficient (see table 3. Pearson Correlation Between Variables) between Consumer Perceived Value Healthcare and Quality Service Healthcare of 0.458 and taking into account the p-value of 0.000 (smaller than 0.05), so the hypothesis states that Consumer Perceived Value Healthcare has a significant effect on Quality Service Healthcare, then the hypothesis is accepted.

***Table 3.** Pearson Correlation Between Variables.*

	Variable	CPV HEALTH	HEALTQUAL
Pearson Correlation	CPV HEALTH	1.000	0.458**
	HEALTQUAL	0.458**	1.000
Sig. (2-tailed)	CPV HEALTH		0.000
	HEALTQUAL	0.000	-
N	CPV HEALTH	253	253
	HEALTQUAL	253	253

Note: **Correlation is significant at the 0.02 level (2-tailed). CPV HEALTH = Consumer Perceived Value Healthcare, HEALTQUAL = Healthcare Service Quality.

4.3. Autocorrelation Test

The coefficient of determination shows the extent to which the contribution of the independent variables in the regression model can explain the variation of the dependent variable [30]. Based on the test results for the coefficient of determination in Table 4, the adjusted R-square value is 0.207 (20.7 %). This means that the ability of the independent variable (Healthcare Service Quality) in this study affects the dependent variable (Consumer Perceived Value Healthcare) by 20.7 %, while the remaining 79.3 % (1 - 0.207) is explained by variables other than the independent variable in research.

***Table 4.** Test Results for the Coefficient of Determination (R^2).*

Model	R	R Square	Adjust R Square	Std. The error in the Estimate	Durbin - Watson
1	.458[a]	.210	.207	12.92650	1.632

a. Predictor: (Constant), Consumer Perceived Value Healthcare
b. Dependent Variable: Healthcare Service Quality

4.4. Hypothesis Test Results

The ANOVA test is used as an analytical tool to test the research hypothesis which assesses whether there is a mean difference between groups. The result of the ANOVA analysis is the f_{test} or f_{count} value. The calculated F value will be compared with the value in table f. If the value of $f_{count} > f_{table}$, it can be concluded that accepting H1 and rejecting H0 means that there is a significant difference in the mean in all groups [30]. Regression is the second analysis that has been carried out in this study. Table 5 shows that with the significance of the research model at an acceptable level, the

significance is 0.000.

Table 5. *ANOVA*[a].

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11150.868	1	11150.868	66.734	.000[a]
	Residual	41940.705	251	167.094		
	Total	53091.573	252			

a. Predictor: (Constant), Consumer Perceived Value Healthcare
b. Dependent Variable: Healthcare Service Quality

Table 5 above is the result of the ANOVA test analysis with SPSS 26. Based on this analysis, it is known that the F value is 66.734 and the significance value is 0.000 or sig <0.05, so Ha is accepted and H0 is rejected. This shows that there is a difference in effectiveness between Consumer's Perceived Value of Healthcare and Healthcare Service Quality. So that the hypothesis is accepted.

4.5. Linear Regression Test

Regression analysis is used to measure the influence between the independent variables and the dependent variable. If there is only one independent variable and one dependent variable, then the regression is called simple linear regression [30]. This study tested a simple regression that was carried out to determine the value of the relationship between the independent variable (Consumer Perceived Value Healthcare) and whether it affected the dependent variable (Healthcare Service Quality) with a significance level of 0.05 [31].

Table 6. *Simple Linear Regression Test Results.*

Coefficient [a]								
Model		Unstandardized Coefficient		Std. Coefficient	T	Sig.	Collinearity Statistic	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	62.176	5.677		10.952	.000		
	CPV-Based Healthcare	.478		.458	8.169	.000	1.000	1.000

a. Dependent Variable: Healthcare Service Quality

Based on Table 6, the regression equation can be described as follows:

$$Y = \alpha + \beta1X1 + e$$

$$Y = 62.176 + 0.478X1 + e$$

From the linear regression equation above, it can be explained as follows:

The constant value (a) has a positive value of 62,176. The positive sign means that it shows a unidirectional influence between the independent variable and the dependent variable. This shows that if the independent variable (Consumer Perceived Value Healthcare) is 0 percent or does not change, then the value of Healthcare Service Quality is 62,176.

The regression coefficient value for the Consumer Perceived Value Healthcare variable (X1) has a positive value of 0.478. This shows that if the Consumer Perceived Value of Healthcare increases by 1%, then Healthcare Service Quality will increase by 0.070 assuming the other independent variables are held constant. The positive sign means that it shows a unidirectional influence between the independent variable and the dependent variable.

So, the results of the study show that the CPV Healthcare variable is significant, with a positive parameter coefficient value. It can be concluded that the CPV Healthcare variable has a positive and significant effect on Healthcare Service Quality. So, the hypothesis is accepted.

4.6. Data Normality Test

The normality test aims to determine whether the sample data comes from a normally distributed population or not. Data that is good and suitable for use in this study is data that is normally distributed, in this study researchers used the normality test [30]. Based on the results in Table 7, shows that the value significance is above 0.05 which is equal to 0.998. This means that the residual data is normally distributed.

Table 7. *Normality Test Results Residuals Statistics*[a].

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	87.9761	123.3321	1.0808E2	6,65203	253
Residual	-3.57320E1	34.73484	.00000	12.90083	253
Std. Predicted Value	-3.021	2.294	.000	1.000	253
Std. Residual	-2.764	2.687	.000	.998	253

a. Dependent Variable: Healthcare Service Quality

5. Discussion and Implications

The R-square value of 0.458 indicates that the factors in this model can explain 45.8 percent of the variance in the quality of health services. Thus, this research model has considerable explanatory power and can serve as a powerful framework for investigating quality healthcare in the future. In addition, the next paragraphs discuss the implications of the authors' findings. Given the increasing awareness of post-COVID-19 health problems among patients, hospitals are required to pay sufficient attention to meet the increasing patient demands.

First, this research investigates the role of perceived health customer value (CPV Healthcare) (ie, efficiency value, aesthetic value, satisfaction value, transaction value, acquisition value) related to health service quality (HEALTQUAL) (ie, reliability, responsiveness, physical evidence, guarantees, empathy). The results show that the effect of self-satisfaction and the transaction value is significantly stronger than the other factors; it also shows that the self-satisfaction score and transaction value seem to be the important elements tested in influencing HEALTQUAL.

From the validation value of the CPV Healthcare dimension item, it is known that the good service of the medical staff at the hospital to patients increases their satisfaction, causing a sense of relief when the patient's mood is depressed due to illness during the COVID-19 period. And good handling of medical staff and personal care to patients when sick makes the value of service satisfaction high. This implies that hospitals should place more emphasis on patient satisfaction in quality health services than qualified doctors, nurses, administrators, and additional staff at the hospital to produce high customer satisfaction values so that the patient's desire to return increases.

Also, another CPV Healthcare dimension validation value that has a significant impact is the efficiency value shown in the quality-of-service items by doctors and staff who are carried out efficiently when working in hospital room functions. Then the aesthetic value items are shown by medical staff by wearing clean clothes & a fresh appearance increasing the patient's and visitor's sense of satisfaction while in the hospital. Hospitals that have good ventilation in each room also provide a strong significant value to patient and visitor satisfaction at the hospital. Moreover, routine interactions by doctors with patients increase patient self-satisfaction with them.

Currently, the post-COVID syndrome adds to the challenges for healthcare workers, especially one aspect of the quality of health services that are most frequently discussed in hospitals, especially information generated from patients during treatment [31- 32] which in our findings from all research data validity values shows that the CPV-Healthcare dimension has a positive and significant effect on the HEALTQUAL dimension. The findings above are consistent with previous studies [33-36]. More importantly, this study reveals that personal care to patients from the CPV Healthcare dimension is the most important factor influencing the achievement of HEALQUAL in this study. Several studies have shown the difference in health services provided by public and private hospitals and the results show that patients prefer to visit private rather than public due to several factors such as technology improvements, no waiting lists and delays in treatment, hygienic environment [37-38], more personalized care from doctors and nurses is by this study that personal care for patients is an important factor for quality health services.

Patient satisfaction from the CPV Healthcare dimension is a strong determinant of HEALTH QUALITY. This finding is in line with the findings of Russell et. al, that patient self-satisfaction can affect service quality because satisfied patients have a high tendency to follow up on their treatment plans and at the same time maintain ongoing relationships with health practitioners [39]. This shows that hospital services must be able to provide satisfaction to patients properly because it has an impact on patient perceptions of the quality of services provided to them so that they make an intention to visit again.

Therefore, it is recommended that hospitals devote resources and efforts to implement strong service excellence training for medical staff to benefit their employees and indirectly benefit their patients. Because according to Suwarno's research [40], that salary and a good work environment will increase nurse satisfaction which indirectly also improves their service to patients. This can be helpful in a competitive market as it can differentiate a particular hospital from its competitors. Based on these results, it is suggested that hospitals need to invest in an efficient and effective system. For example, investing in the latest medical equipment improves the work environment, such as ensuring strong employee job satisfaction among hospital staff, patients, and families. All these practices lead to patient satisfaction. From the value of the HEALTQUAL dimension validation items, the most significant is shown in the empathy value item, which is when doctors and nurses understand and consider the patient's situation while in the hospital after COVID-19. And for tangible items from the HEALTQUAL dimension, the highest value is indicated by the overall appearance of the hospital's cleanliness. In other words, hospitals must always maintain their appearance and cleanliness. Because based on findings that are different from this study, the hospital does not meet patient expectations and is unable to provide health services according to patient expectations [41]. The results are consistent with the findings of Liu et al. [42] and Amin & Nasharuddin [43] who argued that hospitals should not only pay attention to their profitability but also focus on public health services as a whole.

This study also shows that the value of the validity of the improvement item from the HEALTHCARE dimension is a very low rating. Especially in terms of improving the accuracy of the care services provided, Recognition of the best treatment by medical staff, Results of medical &

treatment efforts, Condition of patients after hospital treatment, and Explanation of patients preventing disease. This is in line with research that it is necessary to reorganize service delivery by using better facilities and equipment to reduce the gap between perceptions and expectations which can help patient satisfaction [41].

In addition, this study also shows that personal care for patients is revealed from the CPV Healthcare dimension. Some things are not in line with consumer expectations of the quality of hospital services compared to their experiences. Because value-based service quality must be known to meet or exceed patient expectations [44]. So, hospitals must be able to provide different services with a focus on personal service to satisfy patients. This will increase patient satisfaction and perceptions of the hospital. Service satisfaction must be in line with the patient's perception of the value of the overall reputation of the hospital in terms of quality health services. So, this study shows the relevance of the theory of health service quality in explaining patient satisfaction in the post-COVID-19 Indonesian health industry.

6. Conclusions and Suggestions

6.1. Research Conclusion

The purpose of this study was to examine the effect of healthcare customer perceived value (CPV Healthcare) (ie efficiency value, aesthetic value, satisfaction value, transaction value, acquisition value) on healthcare service quality (HEALTQUAL) (ie, reliability, responsiveness, physical evidence, guarantees, empathy) towards patients as a whole in post-COVID-19 hospitals.

The main conclusion of this study in study proves that there is an effect of CPV Healthcare on HEALTQUAL as a whole and the hypothesis is accepted. Correlation and regression techniques prove that there is a statistically significant impact of CPV Healthcare on overall HEALTQUAL. The self-satisfaction and transaction value dimensions have the greatest influence on HEALTQUAL. with an R-square value of 0.458 indicating that the factors in this model can explain 45.8 percent of the variance in the dimension of health service quality.

Statistical analysis showed that there was no difference between CPV Healthcare and HEALTQUAL associated with any of the demographic variables (gender, age, education, and occupation). The majority of respondents who took part in this study were male (52%), with an age range of 35-55 years (49%). The results showed that (56%) of respondents had diplomas and undergraduate education, and the majority worked as government and private employees (60%).

The results of the study show that the self-satisfaction and transaction value of the CPV Healthcare dimensions is in the Very High category. It is noted that the dimensions of self-satisfaction and transaction value have the highest average and the first category, followed by the Efficiency Value, Aesthetic Value, and Acquisition Value dimensions have the lowest average and category of the other CPV Healthcare

dimensions towards HEALTQUAL. The results also show that Tangible and Empathy as a whole are in the high category. Patients are quite satisfied with the medical, nursing, and management services provided at the hospital.

6.2. Recommendations

The researcher suggests that the moderate level of health service quality practices perceived by patients as a whole at public hospitals in the city of Medan should be improved post-COVID-19. The following is a suggestion for public hospitals in the city of Medan to make improvements in continuing their commitment to providing medical services to patients promptly. In addition, healthcare workers should do their best to provide person-centered care to patients. Public hospitals in Medan City should strictly improve in providing recommendations to develop a follow-up appointment system to address the problem of overcrowded polyclinics and long working hours.

It is recommended that public hospitals in the city of Medan make improvements to pay more attention to patient problems, through better response to patient complaints, and pay special attention to their care. Public hospitals in the city of Medan are advised to increase the provision of waiting room facilities for officers and patients and appropriate toilets by making ventilation cool and comfortable.

It is recommended that public hospitals in Medan City improve and develop the communication skills of employees in terms of dealing with patients and the level of responsiveness to their needs, giving them empathy and safety.

Public hospitals in the city of Medan are advised to regularly assess patient perceptions and satisfaction through surveys, which can then be used to improve the quality of health services and overall patient satisfaction with reliable and valid tools used to measure the perceived quality of health services and patient satisfaction. Thus, we researchers suggest that public hospitals in the city of Medan can adapt this input to improve efforts to improve their quality.

6.3. Future Research

The research contribution has several limitations. This study provides a new and broader perspective to examine the direct relationship between CPV and healthcare measures of quality providing a roadmap for future researchers post-COVID-19.

First, this study is limited to five public hospitals in Medan City as a case study, which limits the generalizability of the findings. Second, this study conceptualizes service quality from a patient perspective. Researchers suggest other studies in the future to look at the quality of health services from the perspective of other stakeholders or the perspective of COVID-19 patients or not. It is recommended that future studies should include samples from other countries and incorporate qualitative methods of data collection.

Third, this study is also limited to hospitals in Indonesia and cannot generalize the findings to other Asian countries.

Therefore, further research should involve Indonesia's neighboring countries such as Thailand, Singapore, Vietnam, Malaysia, and other Asian countries to compare the effect of service quality on patient satisfaction by looking at the cultural context of different patients. Need to be assessed in future studies, such as consumer experience, experience and job satisfaction of hospital staff (nurses & doctors), patient ethnicity, and hospital image, need to be assessed in future work.

Acknowledgements

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