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The Impact of Facilities and Service Quality on the Satisfaction of Hemodialysis Patients at Mitra Jatiasih Hospital

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Keywords

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hemodialysis patient,
satisfaction

Abstract

The advancement of science and technology has increased public awareness of healthy living, establishing health as a critical foundation for social and economic stability. Hospitals, therefore, play a central role in providing high-quality healthcare services that influence patient satisfaction. This study aims to analyze the influence of facilities and service quality on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital. A quantitative approach with a descriptive-correlational design was employed, involving all 72 hemodialysis patients as research subjects through total sampling. Data were collected using validated and reliable questionnaires and analyzed with multiple linear regression supported by classical assumption tests. The results showed that facilities had a significant positive effect on patient satisfaction, contributing 17.4%, while service quality also had a significant impact with a 13.2% contribution. Simultaneous testing revealed that both variables collectively accounted for 39.5% of the variation in patient satisfaction. These findings underscore that improvements in infrastructure and the quality of service delivery are critical to enhancing satisfaction among patients undergoing long-term treatment. In conclusion, the study confirms that better facilities and optimal service quality lead to higher satisfaction levels, emphasizing the need for hospital management to prioritize these areas in delivering patient-centered care.

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INTRODUCTION

The advancement of science and technology has driven increased public awareness of the importance of healthy living as a key component of quality of life and overall well-being. Health is now viewed not merely as a physical condition but as a crucial asset that supports social and economic stability (Ali et al., 2021; Bungatang & Reynel, 2021). In this context, healthcare services have become a fundamental need, with hospitals serving as central institutions in delivering professional and high-quality medical care (Rafik et al., 2021). The quality of hospital services greatly influences patients' perceptions, satisfaction, and loyalty in utilizing healthcare services (Khan et al., 2022; Oktaria, 2024).

Conceptually, healthcare service quality encompasses aspects such as the friendliness of medical staff, promptness of service delivery, empathetic communication, and the comfort of physical facilities (Winata, 2023). Amenities such as clean waiting areas, adequate medical equipment, and effective complaint and suggestion systems are critical components that facilitate seamless healthcare delivery (Khan et al., 2022; Oktaria, 2024). High-quality facilities not only streamline medical services but also foster a sense of safety and comfort for patients, ultimately enhancing their satisfaction (Khan et al., 2022).

In the context of specialized care such as hemodialysis (HD)—a vital renal replacement therapy for patients with Chronic Kidney Disease (CKD)—the availability of facilities and quality of service have an even more pronounced impact. HD is a routine medical procedure that patients must undergo two to three times a week, each session lasting three to five hours, aimed at filtering toxins and excess fluids from the body due to impaired kidney function (Ali et al., 2021). Therefore, the quality of service and supporting facilities during HD sessions is critical in ensuring psychological comfort, procedural order, and therapeutic effectiveness.

Mitra Jatiasih Hospital is one of the healthcare institutions providing intensive hemodialysis services and serves as a referral center for patients with renal dysfunction in its region. However, based on observations and patient feedback, several issues have emerged in the provision of HD services. First, physical facilities remain limited, including cramped treatment rooms, inadequate dialysis equipment, and a lack of comfort-enhancing amenities. Second, the quality of medical personnel—particularly regarding attitude, empathy, and technical competence—has been assessed as suboptimal. Third, the hospital lacks a continuous service evaluation and improvement system. These conditions affect patient satisfaction levels, which in turn may influence patient loyalty and long-term therapeutic outcomes.

Previous studies have confirmed the significant influence of service quality and facilities on hospital patient satisfaction (Çakmak & Uğurluoğlu, 2024; Khan et al., 2022; Nguyen et al., 2021; Rafik et al., 2021; Winata, 2022, 2023). However, research specifically examining the experiences of hemodialysis patients, especially in medium-tier hospitals with limited resources, remains relatively scarce (Solehudin, 2023). This highlights a research gap in the area of specific and sustainable healthcare services.

Considering this phenomenon, it is essential to analyze the relationship between healthcare facilities and service quality with the satisfaction level of hemodialysis patients. The findings of this study are expected to serve as a strategic basis for improving service quality in hospitals, particularly in managing hemodialysis services that prioritize patient comfort and safety.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Literature Review

Healthcare Facilities

Facilities constitute a critical tangible component within healthcare service systems and serve as an initial determinant of patients' perceptions of service quality. According to (Zeithaml et al., 2000, 2002), the SERVQUAL model identifies tangibles—such as the cleanliness of the environment, the comfort of waiting areas, the adequacy of medical equipment, and the professional appearance of staff—as one of the five core dimensions of service quality. Complementing this, Bordoloi et al (2023) emphasizes that observable physical elements significantly influence patients' evaluations of service quality. In the specific context of hemodialysis, where treatment is repetitive and long-term, access to clean, modern, and well-maintained facilities is essential in fostering patient comfort and a sense of safety. From the standpoint of General Systems Theory (Von Bertalanffy, 1968), facilities represent a key subsystem within the broader hospital system, operating in conjunction with other subsystems such as medical personnel, clinical procedures, and patients. As such, optimizing physical infrastructure is not only fundamental to enhancing patient experience but also contributes to the overall effectiveness and operational efficiency of healthcare service delivery.

Service Quality

Service quality is a fundamental construct in healthcare management, closely associated with patient satisfaction, trust, and retention. Zeithaml et al (2002) define service quality as the discrepancy between patients' expectations and their perceptions of the actual service received. The SERVQUAL model outlines five key dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. In the context of hemodialysis services, these dimensions are particularly critical—reliability pertains to the consistent and accurate delivery of medical procedures; responsiveness reflects the promptness and willingness of staff to address patient needs; assurance encompasses the competence, credibility, and professionalism of healthcare personnel; empathy involves individualized attention and sensitivity to patients' conditions; and tangibles relate to the physical environment and equipment (Solehudin, 2023). Furthermore, Contingency Theory underscores the need for context-specific service delivery strategies, emphasizing that healthcare approaches should align with the unique characteristics of the setting and patient demographics (Tjiptono & Diana, 2022). Complementarily, Human Relations Theory stresses the importance of interpersonal communication and relationships in fostering empathetic, patient-centered care, which is especially vital in long-term treatments such as hemodialysis.

Patient Satisfaction

Patient satisfaction is a key indicator of healthcare system performance, representing a subjective assessment of the overall service experience (Berry, 1999), and plays a vital role in fostering patient loyalty, positive word-of-mouth, and the institutional reputation of healthcare providers. According to the Expectancy-Disconfirmation Theory (Oliver & DeSarbo, 1988), satisfaction arises when perceived service exceeds expectations (positive disconfirmation), while dissatisfaction occurs when service falls short of expectations (negative disconfirmation). In the context of chronic and recurring treatments such as hemodialysis, sustaining long-term patient satisfaction is critical. Berry (1999) identifies four primary determinants of satisfaction:

expectations of service, perceived quality, perceived value in relation to cost and effort, and loyalty to the healthcare provider. Both internal factors—such as emotions, expectations, and perceived value—and external factors—such as physical facilities, service quality, and communication—have been shown to influence satisfaction. Empirical studies by Tjiptono & Diana (2022) and Afriyani et al (2023) recommend assessing patient satisfaction using indicators that include procedural clarity, staff competence, service promptness and accuracy, fairness, friendliness of personnel, environmental comfort, and assurance of safety.

Based on the reviewed literature, a functional relationship can be inferred among facilities, service quality, and patient satisfaction within hospital settings, particularly for hemodialysis services. Facilities function as enablers that support a conducive healthcare environment, while service quality shapes patients' perceptions of medical interactions and care delivery. Together, these variables contribute significantly to overall patient satisfaction.

Hypothesis Development

The Effect of Facilities on Patient Satisfaction (H1)

Facilities play a vital role in shaping patients' service experiences, particularly in long-term and repetitive treatments such as hemodialysis, where the comfort of treatment rooms, the availability and adequacy of medical equipment, and environmental cleanliness are essential for supporting both physical and psychological well-being. Within the SERVQUAL framework, Zeithaml et al (2002) categorize such physical elements under the tangibles dimension, which significantly influences patients' perceptions of service quality. Empirical evidence supports this relationship: Kamaruddin et al (2023) found that adequate hospital facilities significantly affect outpatient satisfaction, while Khan et al (2022) demonstrated that comfortable waiting areas and well-maintained medical equipment positively contribute to the satisfaction of hemodialysis patients (Santoso et al., 2024). These findings suggest that well-maintained and properly managed facilities have a significant positive impact on patient satisfaction, reinforcing the need for continuous investment in physical infrastructure as a strategic component of healthcare quality improvement (Fadhla Nabila Aurelia, 2024).

Based on these theoretical and empirical foundations, this study proposes a hypothesis to examine the combined effect of Facilities on Patient Satisfaction.

H1: It is hypothesized that facilities have a partial effect on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital.

The Effect of Service Quality on Patient Satisfaction (H2)

Service quality is widely acknowledged as a critical determinant of patient satisfaction, particularly in healthcare settings that involve frequent and continuous interactions, such as hemodialysis. Zeithaml et al (2002) define service quality through five core dimensions: reliability, responsiveness, assurance, empathy, and tangibles. In hemodialysis care, the need for responsive, empathetic, and professionally delivered services is heightened due to the repetitive and long-term nature of treatment. Empirical studies reinforce this connection; Rafik et al (2021) found that assurance and empathy significantly influence the satisfaction of patients with chronic conditions, while Bungatang & Reynel (2021) reported that high-quality healthcare services have a direct impact on both patient satisfaction and loyalty. These findings support the hypothesis that service quality has a significant positive influence on patient

satisfaction in the context of hemodialysis care.

Based on these theoretical and empirical foundations, this study proposes a hypothesis to examine the combined effect of Service Quality on Patient Satisfaction

H2: It is hypothesized that service quality has a partial effect on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital.

The Simultaneous Effect of Facilities and Service Quality on Patient Satisfaction (H3)

Theoretically, facilities and service quality are interrelated components that collectively shape the overall patient experience. Systems Theory, as proposed by Von Bertalanffy (1968), views healthcare services as an integrated system comprising interconnected elements—such as physical infrastructure, healthcare personnel, and operational procedures—that interact to influence outcomes. In this context, the combination of adequate physical facilities and high-quality service delivery is expected to exert a stronger and more comprehensive influence on patient satisfaction than either factor alone. Empirical evidence supports this perspective; Handayani et al (2022) demonstrated that facilities and service quality jointly have a significant effect on patient satisfaction in private hospitals, while Hartanti & Antonio (2022) found that the integration of these two variables enhances patients' positive perceptions of healthcare institutions.

Based on these theoretical and empirical foundations, this study proposes a hypothesis to examine the combined effect of facilities and service quality on patient satisfaction.

H3: It is hypothesized that facilities and service quality simultaneously affect the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital.

RESEARCH METHODOLOGY

This study employed a quantitative approach with a descriptive-correlational design aimed at examining the influence of facilities and service quality on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital. The research was conducted from April to August 2025. The study population consisted of all 72 hemodialysis patients, and due to the relatively small population size, a total sampling technique (saturated sampling) was used, whereby the entire population was included as the sample.

Operational Variable Description

Operational variables are expressions of the concept that are operationally, practically, realistically, and concretely implemented in the environment of the research object or the object to be studied. The concept of operational variables explains the assessment variables used, as Table 1.

Data were collected through observation, questionnaires, and documentation (Sugiyono, 2018). The research instrument was a closed-ended questionnaire developed based on theoretical indicators of the variables: facilities, service quality, and patient satisfaction, using a 5-point Likert scale (Masturoh & Anggita, 2018). Validity testing was conducted using Pearson's Product-Moment Correlation, while reliability testing employed Cronbach’s Alpha, with α values greater than 0.60 considered reliable. Data analysis was performed using SPSS version 25 (Purwono et al., 2019).

Tabel 1. Operationalization of Research Variables

Variable	Dimension	Indicator
Facilities are a combination of physical assets and services designed to optimally support organizational activities (Atkin & Bildsten, 2017)	Physical Assets	Comfortable facilities for patients Good and modern medical equipment condition Waiting room and toilets
	Services	Administrative process Medical staff provides clear service Answers questions clearly
	Strategic Function	Supports hospital goals Facilities increase effectiveness and efficiency Development strategy
	Integrated Management	Good communication Facility maintenance
	Performance Measurement	Facility evaluation Feedback from patients
	Innovation and Technology	Innovation in hemodialysis facilities Safe technology
Service is an economic activity that creates value and benefits for customers through direct or indirect interaction with the service provider (Zeithaml et al., 2002)	Tangibles	Clean and comfortable physical facilities Modern equipment
	Empathy	Attention and care Communication with patients Patient-friendly and patient service with patience
	Reliability	Service according to schedule Consistent and accurate service Accurate and trustworthy information
	Responsiveness	Responds to patient needs and requests Assists patients in difficulty Waiting time
	Assurance	Competence and expertise of medical staff Clear and convincing explanations Clear procedural explanations
Satisfaction is the feeling of pleasure or disappointment arising from comparing product or service performance with customer expectations (Berry, 1995)	Patient Expectations	High expectations Service received meets patient expectations Matches expectations Professional service
	Perceived Value	Benefits match the cost Feeling appreciated Added value Attention
	Service Quality	Speed and accuracy Friendly service Service quality Information according to procedures
	Patient Loyalty	Future planning Recommending Loyal and trust

Source: Primary data processed by the researcher (2024)

Prior to regression analysis, classical assumption tests were conducted, including normality, multicollinearity, and heteroscedasticity tests (Hair et al., 2019; Hair Jr et al., 2021).

The analytical technique applied was multiple linear regression to assess both simultaneous and partial effects among the variables. Hypothesis testing was carried out using the t-test (partial), F-test (simultaneous), and the coefficient of determination (R^2) to determine the extent to which the independent variables influence the dependent variable (Sarstedt et al., 2014).

RESULTS AND DISCUSSIONS

The respondents in this study were hemodialysis patients receiving treatment at Mitra Jatiasih Hospital, with a total of 72 individuals. The characteristics of the respondents are described based on gender, age, and educational level, as presented in Tables 1 through 3.

As shown in Table 2, the majority of respondents were male, accounting for 60% of the total. This indicates that hemodialysis patients at Mitra Jatiasih Hospital are predominantly male.

Table 3 shows that the largest age group consists of patients over 50 years old, representing 64% of the total respondents. This finding aligns with the common trend of chronic kidney disease being more prevalent among the elderly population.

The majority of respondents had a basic education level (elementary to junior high school), accounting for 58% of the total. This relatively low level of education highlights the need for medical information to be delivered in a communicative and easily understandable manner.

Tabel 2. Respondent Characteristics by Gender

Gender	Number of Respondents	Percentage
Male	43	60%
Female	29	40%
Total	**72**	**100%**

Source: Primary data processed by the researcher (2024)

Tabel 3. Respondent Characteristics by Age

Age Group	Number of Respondents	Percentage
25–35 years	5	7%
36–50 years	21	29%
Above 50 years	46	64%
Total	72	100%

Source: Primary data processed by the researcher (2025)

Tabel 4. Respondent Characteristics by Educational Background

Education Level	Number of Respondents	Percentage
Elementary–Junior High School	42	58%
Senior High School	25	35%
Bachelor	5	7%
Total	**72**	**100%**

Source: Primary data processed by the researcher (2025)

Instrument Validity Test

The validity test aims to determine the extent to which the items in the questionnaire are capable of accurately measuring the intended variables. The assessment was conducted for three variables: Facilities (X1), Service Quality (X2), and Patient Satisfaction (Y), using the Pearson Product-Moment correlation via IBM SPSS version 25.

Based on the results, all questionnaire items across the three variables have Pearson correlation values exceeding the r table threshold (0.232) and are statistically significant at the 5% level. This indicates that all items meet the criteria for validity and are therefore suitable for use in this study.

Instrument Reliability Test

The reliability test is used to measure the internal consistency of the instrument. An instrument is considered reliable if the Cronbach's Alpha value exceeds 0.60 (Ghozali & Latan, 2020). The test results are presented in Table 5.

Based on the data analysis, all three variables in this study have Cronbach's Alpha values above 0.60, indicating that the entire set of questionnaire items meets the reliability criteria and can be consistently used to measure the intended research variables.

Tabel 5. Instrument Validity Test Results

Item	r-table	Facilities (X_1)	Service Quality (X_2)	Patient Satisfaction (Y)	Validity Status
		Pearson Correlation	Pearson Correlation	Pearson Correlation	
1	0.232	.354**	.679**	.668**	Valid
2	0.232	.413**	.654**	.664**	Valid
3	0.232	.385**	.670**	.607**	Valid
4	0.232	.325**	.539**	.592**	Valid
5	0.232	.456**	.680**	.672**	Valid
6	0.232	.559**	.593**	.643**	Valid
7	0.232	.462**	.585**	.659**	Valid
8	0.232	.611**	.631**	.661**	Valid
9	0.232	.540**	.674**	.728**	Valid
10	0.232	.652**	.644**	.677**	Valid
11	0.232	.614**	.460**	.574**	Valid
12	0.232	.547**	.599**	.744**	Valid
13	0.232	.657**	.624**	.680**	Valid
14	0.232	.642**	.645**	.600**	Valid
15	0.232	.551**	.540**	.662**	Valid

Source: SPSS Data Analysis Output (2025)

Note: r Table = 0.232, N = 72, 2-tailed significance < 0.05

Tabel 6. Instrument Reliability Test Results

Variable	Cronbach's Alpha	Number of Items	Description
Facilities (X_1)	0,81	15	Reliable
Service Quality (X_2)	0,879	15	Reliable
Patient Satisfaction (Y)	0,904	15	Reliable

Source: Primary data processed by the researcher (2025)

Classical Assumption Tests

Normality Test

The normality test is conducted to determine whether the residuals in the multiple linear regression model are normally distributed. This test is essential to ensure that the regression model meets one of its basic assumptions—namely, the normal distribution of residuals.

In this study, the normality test was performed using two visual methods: the Normal P–P Plot and the residual histogram, both generated using IBM SPSS version 25.

Based on the results, the P–P Plot shows that the residual points are symmetrically distributed along the diagonal line. This pattern indicates that the residuals are approximately normally distributed and follow the line's direction, suggesting that the assumption of normality is fulfilled.

In addition, the histogram displays a bell-shaped curve, though slightly skewed to the right. Nevertheless, the distribution pattern still reflects a near-normal distribution of residuals, with no significant deviations from the normality assumption.

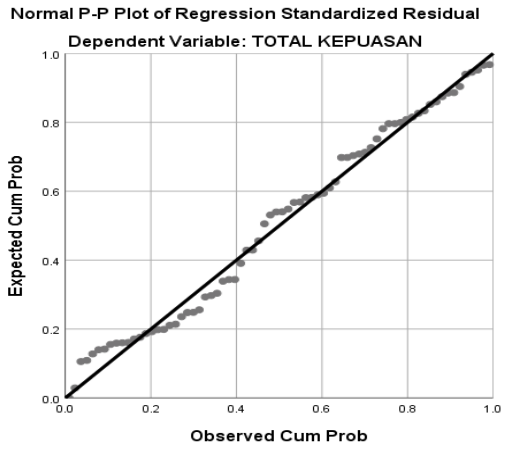

Figure 1. Normal P–P Plot of Regression Standardized Residual

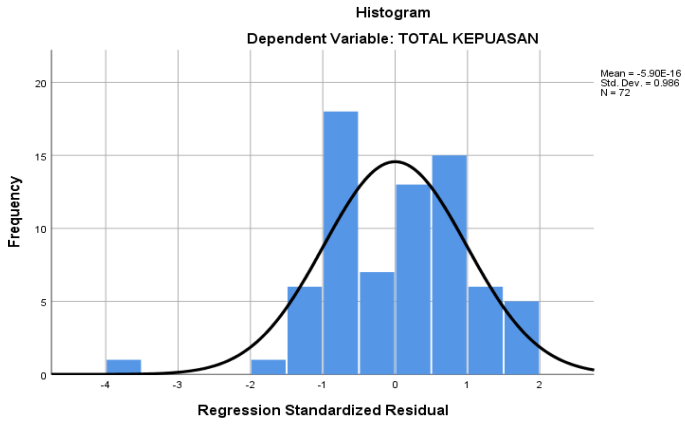

Figure 2. Residual Histogram

Table 7. Multicollinearity Test Results

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	37.653	6.294		5.982	.000		
	Total Facilities	1.027	.153	.878	6.701	.000	.510	1.960
	Total Service Quality	.602	.120	.658	5.025	.000	.510	1.960

a. Dependent Variable: TOTAL SATISFACTION

Source: SPSS Data Analysis Output (2025)

Multicollinearity Test

The multicollinearity test is conducted to examine whether there is a high correlation among the independent variables in the multiple linear regression model. Multicollinearity can distort regression interpretations by causing coefficient estimates to become unstable.

The test was conducted by evaluating the Variance Inflation Factor (VIF) and Tolerance values, using the criteria that a VIF value less than 10 and a Tolerance value greater than 0.1 indicate the absence of multicollinearity issues.

Based on the results, both independent variables (Facilities and Service Quality) have VIF values of 1.960 (less than 10) and Tolerance values of 0.510 (greater than 0.1). Therefore, it can be concluded that multicollinearity is not present in the regression model used in this study.

Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is unequal variance of residuals across observations in the regression model. If the variance of residuals is not constant, heteroscedasticity is present, which can lead to inefficiency in the regression model.

The test was conducted using a scatterplot of the predicted values (ZPRED) against the studentized residuals (SRESID). The visual assessment criteria are: If the data points are randomly scattered and do not form a specific pattern, heteroscedasticity is not present.

Based on Figure 3, the data points appear randomly dispersed above and below the zero line on the scatterplot and do not form any discernible pattern (such as a curved line, funnel shape, or systematic trend).

Therefore, it can be concluded that the regression model is free from heteroscedasticity and satisfies one of the classical assumptions of multiple linear regression.

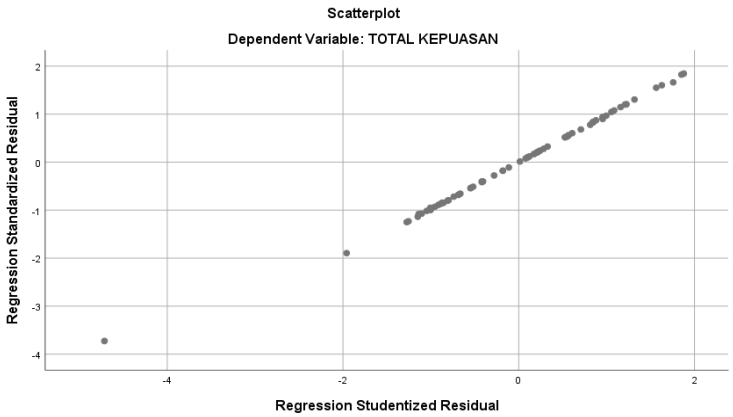

Figure 3. Heteroscedasticity Test Result (Scatterplot)

Table 8. Simple Linear Regression Test: The Effect of Facilities on Hemodialysis Patient Satisfaction at Mitra Jatiasih Hospital

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.609	7.210		4.523	.000
	TOTAL FACILITIES	.488	.127	.417	3.843	.000

a. Dependent Variable: TOTAL SATISFACTION

Source: Researcher's SPSS Output (2025)

Simple Linear Regression Analysis

Based on the results of the simple linear regression analysis conducted for each independent variable, it was found that both Facilities (X_1) and Service Quality (X_2) have a significant effect on Patient Satisfaction (Y). This analysis aims to determine the extent of the contribution of each independent variable individually (partially) to the dependent variable.

The Effect of Facilities on Patient Satisfaction

Based on the data analysis using SPSS version 25, the regression equation for the effect of facilities on patient satisfaction is presented in Table 8.

These results indicate that the Facilities variable (X_1) has a regression coefficient of 0.488, meaning that every one-unit increase in the facilities score leads to an increase of 0.488 units in patient satisfaction. The constant value of 32.609 reflects the predicted level of patient satisfaction in the absence of facility improvements. The significance value of 0.000, which is less than 0.05, indicates that the effect of facilities on patient satisfaction is statistically significant. Therefore, it can be concluded that improving facilities has a positive and meaningful contribution to enhancing the satisfaction of hemodialysis patients.

The Effect of Service Quality on Patient Satisfaction

Furthermore, based on the simple linear regression analysis of the Service Quality variable (X_2) as presented in Table 9, the following regression equation was obtained.

The coefficient 0.365 indicates that for every one-unit increase in service quality, patient satisfaction increases by 0.365 units, assuming other factors remain constant. The significance value of 0.002 is less than 0.05, indicating that the effect is statistically significant. Therefore, it can be concluded that service quality has a positive and significant effect on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital. This underscores the important role of service quality in enhancing patient satisfaction.

Multiple Linear Regression Analysis

Multiple linear regression analysis is used to determine the simultaneous effect of the variables Facilities (X_1) and Service Quality (X_2) on Patient Satisfaction (Y). The data processing results using SPSS version 25 are presented in Table 11.

Table 9. Simple Linear Regression Test: The Effect of Service Quality on Hemodialysis Patient Satisfaction at Mitra Jatiasih Hospital

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	38.598	6.640		5.813	.000
	TOTAL SERVICE QUALITY	.365	.112	.364	3.270	.002

a. Dependent Variable: TOTAL SATISFACTION

Source: Researcher's SPSS Output (2025)

Table 10. Results of Multiple Linear Regression Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.653	6.294		5.982	.000
	TOTAL FACILITIES	1.027	.153	.878	6.701	.000
	TOTAL SERVICE QUALITY	.602	.120	.658	5.025	.000

a. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing version 25 (2025)

Based on the results above, the multiple linear regression equation is as follows:

$$\boldsymbol{Y = 37.653 + 1.027X1 + 0.602X2}$$

The constant value of 37.653 indicates the baseline level of patient satisfaction when both Facilities (X_1) and Service Quality (X_2) are assumed to be zero. The regression coefficient for Facilities (X_1) is 1.027, meaning that each one-unit increase in facilities leads to a 1.027 unit increase in patient satisfaction, assuming service quality remains constant; the significance value of 0.000 (< 0.05) confirms that this effect is statistically significant. Similarly, the regression coefficient for Service Quality (X_2) is 0.602, indicating that each one-unit increase in service quality results in a 0.602 unit increase in patient satisfaction, also with a statistically significant effect (p = 0.000). Therefore, both facilities and service quality have a positive and significant influence on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital, contributing meaningfully to enhancing overall patient satisfaction.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to measure how much the independent variables contribute to explaining the variation in the dependent variable. The R^2 value ranges from 0 to 1, indicating that the closer the value is to 1, the better the regression model explains the relationship between variables. In this study, the analysis was conducted using IBM SPSS version 25. The data processing results are presented in three regression models: simple regression for each independent variable, and multiple regression for both variables simultaneously.

Based on Table 11, the coefficient of determination (R^2) is 0.174 or 17.4%. This indicates that the Facilities variable (X_1) has a contribution of 17.4% to Patient Satisfaction (Y). Meanwhile, the remaining 82.6% is influenced by other factors not examined in this study.

Table 11. Coefficient of Determination of the Effect of Facilities on Patient Satisfaction

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.417[a]	.174	.162	7.902

a. Predictors: (Constant), TOTAL FACILITIES

b. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing (2025)

Table 12. Coefficient of Determination of the Effect of Service Quality on Patient Satisfaction

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.364[a]	.132	.120	8.099

a. Predictors: (Constant), TOTAL SERVICE QUALITY

b. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing (2025)

Furthermore, based on Table 13, the coefficient of determination (R^2) is 0.132 or 13.2%, indicating that the Service Quality variable (X_2) contributes 13.2% to Patient Satisfaction (Y). This means that 86.8% of the variation in patient satisfaction is explained by other variables not included in this regression model.

In the multiple regression analysis presented in Table 14, the coefficient of determination (R^2) is 0.395 or 39.5%. This means that the variables Facilities (X_1) and Service Quality (X_2) simultaneously influence Patient Satisfaction (Y) by 39.5%. The remaining 60.5% is explained by other factors beyond the scope of this study. This indicates that the combined influence of the two independent variables on patient satisfaction is moderate, but not dominant.

Hypothesis Testing
t-Test (partial test)

The t-test, or partial test, is used to assess the extent to which each independent variable individually influences the dependent variable. In this study, it was applied to evaluate whether the Facilities variable (X_1) and the Service Quality variable (X_2) significantly affect Patient Satisfaction (Y). The decision-making process for hypothesis testing is based on two main criteria: an independent variable is considered to have a significant effect on the dependent variable if its significance value is less than 0.05, and the hypothesis is accepted if this criterion is met for each independent variable, with the analysis based on a sample of 72 respondents.

Table 13. Multiple Coefficient of Determination of the Effect of Facilities and Service Quality on Patient Satisfaction

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.629[a]	.395	.378	6.810

a. Predictors: (Constant), TOTAL SERVICE QUALITY, TOTAL FACILITIES

b. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing (2025)

Table 14. t-Test Results: Effect of Facilities on Hemodialysis Patient Satisfaction

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	32.609	7.210		4.523	.000
	TOTAL FACILITIES	.488	.127	.417	3.843	.000

a. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing (2025)

Table 15. t-Test Results: Effect of Service Quality on Hemodialysis Patient Satisfaction

Coefficients[a]					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	38.598	6.640		5.813	.000
	TOTAL SERVICE QUALITY	.365	.112	.364	3.270	.002

a. Dependent Variable: TOTAL SATISFACTION

Source: Researcher, SPSS data processing (2025)

Based on the results, the significance value for the Service Quality variable is 0.002, which is also less than 0.05. This indicates that Service Quality (X_2) has a significant effect on Patient Satisfaction (Y). Hence, the second hypothesis (H_2) stating that Service Quality influences Patient Satisfaction is accepted.

F-test, or simultaneous test

The F-test, or simultaneous test, is used to assess the combined influence of the independent variables on the dependent variable. In this study, the test was conducted to evaluate whether the variables Facilities (X_1) and Service Quality (X_2) simultaneously have a significant effect on Patient Satisfaction (Y). The decision to accept or reject the hypothesis is based on two criteria: first, the significance value (Sig.) obtained from the ANOVA results of the multiple regression analysis must be less than 0.02; and second, the calculated F-value must exceed the F-table value. This analysis was conducted using data from 72 respondents, and the results are presented in Table 17 below.

Table 16. F-Test Results: Effect of Facilities and Service Quality on Hemodialysis Patient Satisfaction

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	946.164	2	473.082	7.509	.001[b]
	Residual	4347.336	69	63.005		
	Total	5293.500	71			

a. Dependent Variable: TOTAL SATISFACTION

b. Predictors: (Constant), TOTAL FACILITIES, TOTAL SERVICE QUALITY

Source: Researcher, SPSS data processing (2025)

Based on Table 16, the significance value is 0.001, which is lower than the threshold of 0.02. Furthermore, the calculated F-value of 7.509 is greater than the F-table value (±3.13) at a significance level of 5% with degrees of freedom (df) 2 and 69. Thus, it can be concluded that the variables Facilities and Service Quality simultaneously have a significant effect on Hemodialysis Patient Satisfaction at Mitra Jatiasih Hospital. Therefore, the third hypothesis (H_3) is accepted.

Discussion

The Effect of Facilities on Patient Satisfaction

The results of the regression analysis indicate that the facility variable has a positive and statistically significant effect on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital, with a p-value of 0.000 (< 0.05) and a contribution of 17.4% to the variation in patient satisfaction. This finding suggests that improvements in the availability, accessibility, and comfort of hospital facilities lead to higher levels of patient satisfaction.

This result aligns with the findings of Khan et al (2022), who demonstrated that hospital facility characteristics—including physical layout, infrastructure, and safety features—directly affect patient safety, service availability, and patient experience. Similarly, Oktaria (2024) found that facilities had a direct and significant impact on both patient satisfaction and loyalty, emphasizing the strategic value of facility development in patient retention. In a related study, Rafik et al (2021) reported that the physical infrastructure of a public hospital in Bekasi significantly influenced outpatient satisfaction, with a coefficient of determination (R^2) reaching 80.8%.

These findings collectively underscore the importance of facility quality not merely as a supporting element, but as a critical strategic determinant of healthcare service excellence—especially in long-term care contexts such as hemodialysis.

The Effect of Service Quality on Patient Satisfaction

The results of the partial regression analysis reveal that service quality has a statistically significant impact on patient satisfaction, with a p-value of 0.002 (< 0.05) and a contribution of 13.2%. These findings indicate that dimensions such as reliability, empathy, responsiveness, assurance, and tangible aspects of care meaningfully shape patients' perceptions and satisfaction with healthcare services.

This result is consistent with the findings of Bungatang & Reynel (2021), who found that reliability and empathy were the most influential service quality dimensions affecting customer satisfaction in the service industry. In the healthcare context, Çakmak & Uğurluoğlu (2024) highlighted that patient-centered communication, which includes empathic interactions and provider attentiveness, had a significant positive influence on service perception and patient satisfaction among cancer patients in Turkey. Additionally, Nguyen et al (2021) emphasized that trust and emotional engagement, as dimensions of perceived service quality, significantly contributed to inpatient satisfaction and loyalty in hospitals across developing countries.

These findings confirm that interpersonal aspects of healthcare delivery—such as provider communication, professionalism, and patient empathy—remain central in achieving patient satisfaction, particularly in chronic and emotionally sensitive care settings such as dialysis.

The Simultaneous Effect of Facilities and Service Quality on Patient Satisfaction

Simultaneous testing using the F-test confirmed that both facilities and service quality exert a statistically significant joint effect on patient satisfaction. The analysis yielded a

significance value of 0.001 (< 0.05) and an F-statistic of 7.509, which exceeds the critical F-value at the 5% level. The combined contribution of these two variables was measured at 39.5%, indicating that nearly two-fifths of the variation in patient satisfaction can be explained by the joint influence of facilities and service quality.

These findings are supported by Oktaria (2024), who confirmed that both service quality and facilities had a significant and direct influence on patient satisfaction and loyalty in hospital settings. Their study also found that patient satisfaction mediates the relationship between service inputs and loyalty outcomes. Similarly, Rafik et al (2021) demonstrated that the combined influence of physical facilities and service delivery significantly shaped satisfaction levels among public hospital outpatients. Furthermore, Winata (2023), although working within the food service industry, showed that facilities and service quality significantly influence customer satisfaction—underscoring the generalizability of this relationship across service domains.

Theoretically, these findings align with established models of customer satisfaction, which posit that both environmental factors and interpersonal service quality are essential in shaping user experience. Therefore, hospital management should implement integrated strategies that simultaneously improve physical infrastructure and enhance the interpersonal aspects of service delivery to promote satisfaction among chronic care patients such as those undergoing hemodialysis.

Managerial Implications

This study highlights the need for hospital management to prioritize improvements in both physical facilities and service quality to enhance patient satisfaction, especially for long-term care patients like those undergoing hemodialysis. Investing in comfortable, accessible infrastructure and training staff to provide empathetic, responsive, and professional care will strengthen patient trust and loyalty. An integrated approach addressing both facility and service aspects simultaneously is essential for delivering excellent healthcare experiences.

CONCLUSION

The findings of this study indicate that facilities and service quality have a significant influence on the satisfaction of hemodialysis patients at Mitra Jatiasih Hospital. Both variables, whether examined partially or simultaneously, were shown to contribute positively to enhancing patient satisfaction. In other words, the better the hospital facilities and the more optimal the service quality, the higher the level of patient satisfaction tends to be. These results underscore the critical importance of hospital management's commitment to facility improvement and service quality enhancement as integral strategies for improving overall healthcare delivery.

Limitations

The study’s findings are limited by its focus on a single hospital and patient group, which may restrict generalizability. It also only examined facilities and service quality without considering other factors such as cost or psychosocial influences. The cross-sectional design prevents assessment of changes over time, and the quantitative method may miss deeper patient insights.

The study’s findings are limited by its focus on a single hospital and patient group, which may restrict generalizability. It also only examined facilities and service quality without considering other influencing factors such as cost or psychosocial aspects. Furthermore, the study relied on a limited number of variables, focusing only on two main aspects (facilities and

service quality), which may not fully capture the complexity of patient satisfaction. The cross-sectional design prevents assessment of changes over time, and the exclusive use of quantitative methods may miss deeper insights into patient experiences.

Suggestions for Future Research

Future research should involve multiple hospitals and broader patient populations to increase generalizability. Adding variables like cost, psychological factors, and cultural context will deepen understanding. Longitudinal and mixed-method studies are recommended to track satisfaction changes and explore patient experiences in greater detail.

Future studies could expand the scope by involving multiple hospitals to increase the generalizability of findings. Researchers are also encouraged to include additional variables such as cost, accessibility, patient safety, and psychological support to provide a more comprehensive understanding of patient satisfaction. Moreover, adopting a longitudinal design could help capture changes in satisfaction levels over time, while combining quantitative and qualitative methods may offer deeper insights into patient experiences and expectations.

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