FACTORS INFLUENCING PATIENT SATISFACTION WITH MODERATOR VARIABLES OF SERVICE QUALITY IN PEDIATRIC INPATIENT CARE AT PROF. DR. SOEKANDAR MOJOKERTO REGIONAL HOSPITAL

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Abstract

Patient satisfaction serves as a pivotal indicator in evaluating the quality of hospital services, particularly for patients enrolled in the BPJS Kesehatan. The objective is to analyze the impact of doctor-patient communication, doctor visitation services, inpatient room cleanliness, the ease of administrative procedures, and healthcare assurance status on patient satisfaction with service quality as a moderating variable. An observational analytic study employing a cross-sectional design was conducted. A total of 138 respondents were recruited through simple random sampling. Data were collected through a questionnaire subsequently analyzed employing Chi-square tests and multivariate analysis techniques, specifically SEM-PLS. The study revealed the significant effect of doctor-patient communication ($O = 0.255$; $p = 0.004$) and service quality ($O = 0.439$; $p = 0.001$) on patient satisfaction. Doctor visitation services, inpatient room cleanliness, and healthcare assurance status did not exhibit a significant effect on patient satisfaction or service quality ($p > 0.05$). The ease of administrative procedures had a significant effect on patient satisfaction ($O = 0.317$; $p = 0.036$) and service quality ($O = 0.592$; $p = 0.000$). Nevertheless, moderation testing revealed that service quality did not serve as a moderator between independent variables and patient satisfaction. In conclusion, simplified administrative procedure and service quality are pivotal determinants of patient satisfaction with service quality primarily functioning as a mediator rather than a moderator. Consequently, hospitals should enhance administrative efficiency and ensure comprehensive service quality to augment patient satisfaction.

Keywords: *patient satisfaction, service quality, doctor–patient communication, doctor visitation, administrative procedures, BPJS Kesehatan*

INTRODUCTION

Patient satisfaction is one of the key indicators in assessing the quality of hospital services, particularly for patients whose healthcare costs are covered by the Social Security Agency for Health (BPJS Kesehatan). Although the BPJS Kesehatan program is designed to improve access to and equity in healthcare services, various complaints regarding patient satisfaction are still found in hospital service units. These complaints include issues related to administration, the competence of healthcare professionals, facilities and infrastructure, availability of medicines, costs, and overall healthcare services (Haerudin et al., 2023). Data from the Central Bureau of Statistics (BPS) in 2020 revealed that 87% of 17,280 patients whose healthcare costs were covered by BPJS Kesehatan in Indonesia expressed satisfaction with hospital services (BPS, 2020). However, this satisfaction rate declined to 83.93% in the same year (Lina & Novianti, 2023), and for inpatient services, the satisfaction level was only 42.9% (Haerudin et al., 2023). Prof. dr. Soekandar Regional Hospital (RSUD) in Mojokerto Regency is a type B teaching referral hospital, with Blambangan Ward serving as the pediatric inpatient unit. Data from the Hospital Management Information System (SIMRS) between January and March 2025 showed that approximately 92% of inpatients used BPJS Kesehatan as their healthcare cost coverage. In 2024, there were 41 recorded patient dissatisfaction complaints, of which 17% were related to doctor-patient communication, 22% to doctor's visit services, 19% to ward cleanliness and environmental hygiene, and the remainder to administrative procedures. The quality of hospital services is closely linked to patient satisfaction. According to the Indonesian Ministry of Health Regulation No. 30 of 2022, hospitals are required to provide optimal services in accordance with standards and scientific developments to fulfill both the rights and obligations of patients. Service quality dimensions include human resource services, administrative services, and the comfort of inpatient wards. Doctor-patient communication plays a vital role in building therapeutic relationships and improving satisfaction (Gabriel et al., 2022). Doctor visitation services (ward rounds), as a national quality indicator, significantly affect patient satisfaction, where non-compliance with standards may result in dissatisfaction (Purnomo et al., 2023). Lengthy and inefficient administrative procedures can generate patient complaints (Solvina et al., 2024), while uncomfortable physical ward conditions may hinder the recovery process (Muafa, 2022). The increasing number of patient visits demands hospitals to maintain service standards and innovate in quality improvement. Therefore, this study is essential to analyze the factors influencing patient satisfaction in the Pediatric Inpatient Unit of Prof. dr. Soekandar Regional General Hospital, Mojokerto Regency.

RESEARCH METHOD

Study Design

This study employed an analytical observational design with a cross-sectional approach, assessing the independent, dependent, and moderating variables simultaneously at a single point in time. The research was conducted at the Pediatric Inpatient Unit, Blambangan Ward, Prof. Dr. Soekandar Regional Public Hospital, Mojosari Mojokerto, during April–May 2025. Data collection began in May 2025.

Population and Sample

The study population consisted of 215

pediatric patients and their families. The sample size was determined using the Krejcie-Morgan formula, yielding 138 respondents. Sampling was carried out using a simple random sampling technique.

Inclusion Criteria

The inclusion criteria were: parents, guardians, or core family members of pediatric patients; hospitalization duration of at least two days (≥48 hours); willingness to voluntarily participate by signing informed consent; ability to communicate verbally or in writing in Indonesian; and sufficient understanding of the questionnaire provided.

Exclusion Criteria

Exclusion criteria included: family members not actively present during the treatment process; those in an emotionally unstable condition; refusal or withdrawal of consent to participate; and respondents who completed the questionnaire incompletely or not according to the instructions, thus rendering the data invalid for analysis.

Research Variables

The independent variables in this study were doctor–patient communication, doctor's visit services, inpatient rooms cleanliness, ease of administrative procedures, and healthcare assurance status. The dependent variable was patient satisfaction, while the moderating variable was service quality.

Data Collection Techniques and Instruments

A research permit letter was obtained prior to data collection. The primary data collection instrument was a structured questionnaire. The process began with identifying respondents, followed by an interview in which the researcher explained the study's purpose. Upon consent, respondents signed the informed consent form, and the researcher explained how to complete the questionnaire. The completed questionnaires were then collected. Data processing included editing, coding, and scoring, after which the data were entered into a computer program for analysis.

Table 1. Respondents' Characteristics

Characteristics	f	%
Sex		
Male	28	20,3
Female	110	79,7
Age		
≤33 years old	77	55,8
>33 years old	61	44,2
Marital Status		
Single	9	6,5
Married	122	88,4
Divorced/widowed	7	5,1
Education		
No formal education	3	2,2
Elementary school	3	2,2
Junior high school	33	23,9
Senior high school	74	53,6
Higher education	25	18,1
Occupation		
Unemployed	48	34.8
Civil/Army/Police	4	2,9
Private sector	38	27,5
Farmer	1	0,7
Trader	16	11.6
Other	31	22,5
Income		
≤ Rp 3000000	81	58,7
> Rp 3000000	57	41.3
Health Insurance Status		
Other Insurance	6	4,3
BPJS Kesehatan	132	95,7

RESEARCH RESULTS

Table 1 presents the characteristics of respondents. The majority of inpatients in this study were female (79.7%) and aged ≤ 33 years (55.8%). Most respondents were married (88.4%) and had a senior high school education (53.6%). In terms of occupation, the largest proportion was unemployed patients (34.8%), followed by private sector workers (27.5%). Respondents' income tended to fall in the ≤ Rp 3,000,000 category (58.7%). Almost all patients (95.7%) were covered by BPJS Kesehatan, while only 4.3% used other insurance or paid out-of-pocket. This distribution indicates that the majority of inpatients came from the young productive age group, with a middle-level education, lower to middle economic conditions, and predominantly covered by BPJS Kesehatan insurance.

Table 2 shows the results of the bivariate analysis. The effect of doctor–patient communication on patient satisfaction indicated that among 71 respondents who rated doctor communication as poor, 43.5% reported dissatisfaction, while among 67 respondents who rated it good, 41.4% reported satisfaction. The p-value of 0.000 indicates a significant effect. Regarding doctor visitation services, among 81 respondents who rated the service as poor, 43.5% were dissatisfied, whereas among 57 respondents who rated it good, 34.1% were satisfied. The p-value of 0.000 also indicates a significant effect. The influence of inpatient room cleanliness on satisfaction showed that among 73 respondents who rated cleanliness as poor, 41.3% were dissatisfied, while among 65 respondents who rated it good, 37.7% were satisfied. The p-value of 0.000 indicates a significant effect. Regarding the ease of administrative procedures, among 88 respondents who rated the process as poor, 47.8% were dissatisfied, while among 50 respondents who rated it good, 33.4% were satisfied. The p-value of 0.000 confirms a significant effect. The effect of healthcare assurance status on patient satisfaction showed that of 6 respondents with non-BPJS coverage, a small proportion reported satisfaction.

Among 132 respondents with BPJS Kesehatan, the proportions of satisfied and dissatisfied patients were equal (47.85% each). The p-value of 0.425 indicates a non-significant effect. The effect of service quality on satisfaction showed that among 70 respondents who rated it poor, 47.1% were dissatisfied, while among 68 respondents who rated it good, 47.1% were satisfied. The p-value of 0.000 indicates a significant effect.

Table 3 presents the results of the multivariate analysis. Doctor–patient communication had no significant effect on patient satisfaction (p-value 0.303) but had a weak yet significant effect on service quality (O = 0.255; p-value 0.004). Doctor visitation services showed no significant effect on either patient satisfaction (p-value 0.551) or service quality (p-value 0.730). Inpatient room cleanliness had no significant effect on satisfaction (p-value 0.779) or service quality (p-value 0.252). The ease of administrative procedures had a moderate and significant effect on patient satisfaction (O = 0.317; p-value 0.036) and a strong, significant effect on service quality (O = 0.592; p-value 0.000 < 0.05). Healthcare assurance status showed no significant effect on satisfaction (p-value 0.713) or service quality (p-value 0.165). Service quality had a moderate and significant effect on patient satisfaction (O = 0.439; p-value 0.001 < 0.05). The moderating effect of service quality on doctor–patient communication toward satisfaction was not significant (p-value 0.693 > 0.05). Similarly, the moderating effect of service quality on doctor visitation services (p-value 0.806 > 0.05), inpatient room cleanlines (p-value 0.796 > 0.05), ease of administrative procedures (p-value 0.511 > 0.05), and healthcare assurance status (p-value 0.808 > 0.05) on patient satisfaction were all non-significant.

Table 2. Results of Bivariate Analysis

Variable		Patient Satisfaction				Total		P-value
		Dissatisfied		Satisfied				
		f	%	f	%	f	%	
Doctor–Patient Communication	**Poor**	60	43.5	11	7.9	71	51.4	0,000
	Good	10	7.2	57	41.4	67	48.6	
	Total	70	50.7	68	49.3	138	100	
Doctor Visitation Services	**Poor**	60	43.5	21	15.2	81	58.7	0,000
	Good	10	7.2	47	34.1	57	413	
	Total	70	50.7	68	49.3	138	100	
In patient room Cleanliness	**Poor**	57	41.3	16	11.6	73	52.9	0,000
	Good	13	9.4	52	37.7	65	47.1	
	Total	70	50.7	68	49.3	138	100	
The Ease of Administrative Procedures	**Poor**	66	47.8	22	15.9	88	63.8	0,000
	Good	4	2.9	46	33.4	50	36.2	
	Total	70	50.7	68	49.3	138	100	
Healthcare Assurance Status	**Poor**	4	2.9	2	1.4	6	4.3	0,425
	Good	66	47.85	66	47.85	132	95.7	
	Total	70	50.75	68	49.25	138	100	
Service Quality	**Poor**	65	47.1	5	3.6	70	50.7	0,000
	Good	5	3.6	63	47.1	68	49.3	
	Total	70	50.7	68	49.3	138	100	

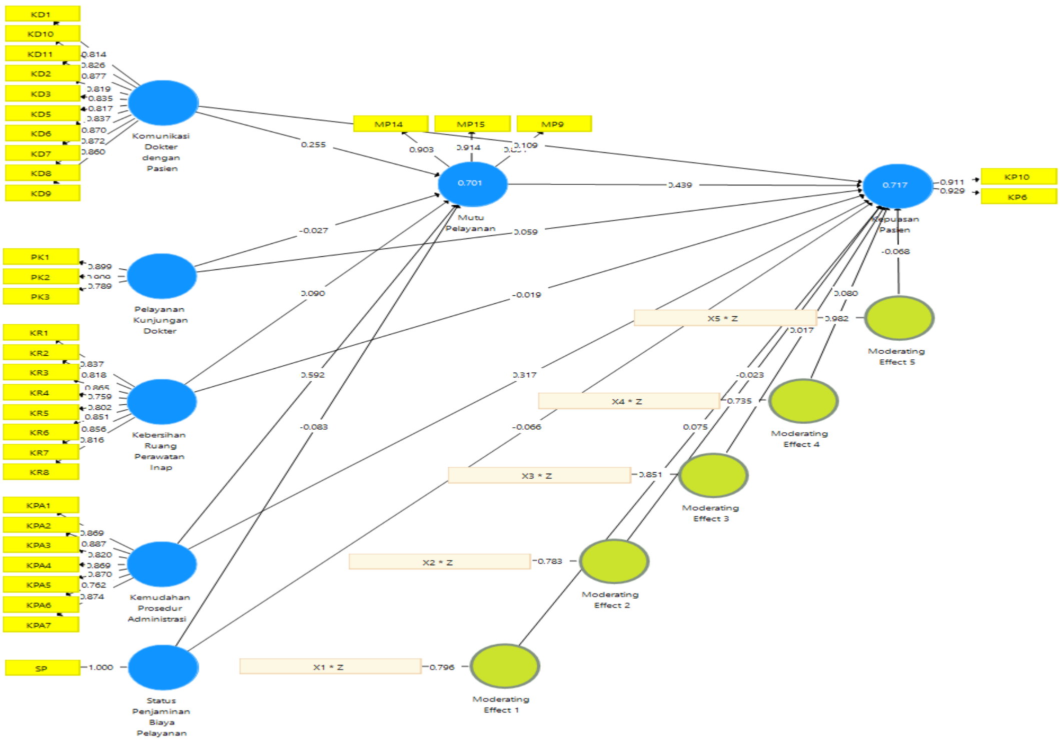

Figure. Path Diagram after VIF Adjustment in the Statistical Test Factors Influencing Patient Satisfaction

Table 3. Effect, Original Sample, P-value, and Direction of Effect

Effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Direction of Effect
Effect of doctor–patient communication on patient satisfaction	0.109	0.141	0.105	1.034	0.303	Slight positive effect
Effect of doctor–patient communication on service quality	0.255	0.257	0.086	2.961	0.004	Slight positive effect
Effect of doctor visitation services on patient satisfaction	0.059	0.049	0.098	0.598	0.551	Very slight positive effect
Effect of doctor visitation services on service quality	-0.027	-0.037	0.077	0.346	0.730	Very slight negative effect
Effect of inpatient room cleanliness on patient satisfaction	-0.019	-0.016	0.066	0.281	0.779	Very slight negative effect
Effect of inpatient room cleanliness on service quality	0.090	0.090	0.078	1.151	0.252	Very slight positive effect
Effect of ease of administrative procedures on patient satisfaction	0.317	0.295	0.150	2.112	0.036	Moderate positive effect
Effect of ease of administrative procedures on service quality	0.592	0.599	0.106	5.590	0.000	Strong positive effect
Effect of healthcare assurance status on patient satisfaction	-0.066	-0.058	0.179	0.369	0.713	Very slight negative effect
Effect of healthcare assurance status on service quality	-0.083	-0.078	0.059	1.397	0.165	Very slight negative effect
Effect of service quality on patient satisfaction	0.439	0.450	0.125	3.500	0.001	Moderate positive effect
Moderating effect of service quality on doctor–patient communication toward patient satisfaction	0.075	0.039	0.108	0.693	0.490	Very slight positive effect
Moderating effect of service quality on doctor's visit service toward patient satisfaction	-0.023	-0.019	0.095	0.246	0.806	Very slight negative effect
Moderating effect of service quality on inpatient room cleanliness toward patient satisfaction	0.017	0.025	0.066	0.259	0.796	Very slight positive effect
Moderating effect of service quality on ease of administrative procedures toward patient satisfaction	0.080	0.087	0.121	0.659	0.511	Very slight positive effect
Moderating effect of service quality on health service coverage status toward patient satisfaction	-0.068	-0.096	0.281	0.243	0.808	Very slight negative effect

DISCUSSION

The Effect of Doctor–Patient Communication on Patient Satisfaction

In this study, doctor–patient communication was found to have no significant effect on increasing patient satisfaction.

Situational and systemic conditions, such as in emergency department (ED) services with high pressure and noise, often hinder communication and reduce its effectiveness despite being performed intensively. Ultimately, patient satisfaction is not only influenced by communication, but also by perceptions, expectations, and demographic factors such as gender and education (Alshalawi et al., 2025). Other studies also emphasize that the impact of communication interventions on satisfaction may differ between the short and long term, as patient-centered communication requires more time to demonstrate positive effects (Sirera et al., 2024). Sirera et al. (2024) reported that patient-centered communication did not result in an increase in patient satisfaction scores (p-value < 0.001). Communication showed a positive but insignificant relationship with patient satisfaction (p-value = 0.56) (Alshalawi et al., 2025). These findings differ from Hasna et al. (2022), who found a significant relationship between communication and patient satisfaction (p-value = 0.000). Furthermore, Bernadette and Loisa (2024) demonstrated that effective communication between healthcare professionals and patients had a significant influence on satisfaction (original sample = 0.500; p-value = 0.000). Theoretically, effective interpersonal communication between doctors and patients is an important determinant of patient satisfaction, although its influence is highly shaped by cultural factors, expectations, and the duration of interactions. Chi-square test results showed a significant relationship, but SEM-PLS analysis did not, indicating the possible presence of mediating variables such as service quality. Doctor–patient communication contributes to satisfaction through empathy, transparency of information, and patient involvement in clinical decision-making. However, it is insufficient to create satisfaction without adequate service quality. The contribution of communication is also influenced by other factors, including facility quality, waiting time, healthcare provider competence, and patient experience. Significant regression results between communication and service quality confirm that doctor–patient communication is an integral part of service quality, with empathy and assurance as key aspects in enhancing patient satisfaction.

The Effect of Doctor Visitation Services on Patient Satisfaction

The findings of this study indicate that the effect of service integration is more meaningful than the frequency of doctor visitation. Single or sporadic visits that are not integrated into multidisciplinary care, follow-up, and structured communication tend to add little value to the patient experience. Patients place greater emphasis on coordination, clarity of care plans, and response time than on the number of visits. This aligns with the concept of Continuity of Care, which highlights the importance of relational and informational continuity, where visits without continuity provide limited benefits for satisfaction. From the SERVQUAL perspective, functional quality (empathy, communication, responsiveness) is often more important than technical quality, meaning that doctor visits without improvement in functional quality do not enhance satisfaction (Gavurova et al., 2021). Similarly, Moslehpour et al. (2022) emphasized that satisfaction is more closely associated with service quality than with visit frequency, while physical visits without effective communication have limited impact. Alternative models such as telemedicine or Hospital at Home have also been shown to provide positive experiences in terms of access, comfort, and communication, making conventional in-hospital doctor’s visit relatively less influential (Levine et al., 2022).

Conversely, ward visits conducted without structure or standards—such as variable bedside rounds—provide limited benefits for satisfaction (Heip et al., 2022). Based on the Structure–Process–Outcome framework, doctor visits are part of the process that is only effective when supported by adequate structure (resources) and strong coordination; without this integration, outcomes such as patient satisfaction are difficult to achieve. Other factors such as room condition, cleanliness, meals, administrative waiting time, and hospital staff interactions often play a more dominant role in shaping satisfaction. Levine et al. (2022) demonstrated that doctor visits do not always significantly improve patient satisfaction (95% CI: −1.00–0.56). However, Putri et al. (2024) reported different findings, showing that doctor services significantly influenced inpatient satisfaction (p-value = 0.014).

This discrepancy is also reflected in the results of the Chi-square test, which were significant, whereas SEM-PLS analysis was not, indicating that doctor visitation services alone are insufficient without the support of communication quality, team coordination, and system responsiveness. Therefore, the quality of interaction is more important than the frequency of visits. High-quality doctor's visit should emphasize empathy, effective communication, and adequate time allocation, and must be implemented through interprofessional collaboration to strengthen systems and standardize patient care.

The Effect of Inpatient Room Cleanliness on Patient Satisfaction

Cleanliness of inpatient rooms is a factual aspect that does not always correspond directly to patient satisfaction. This is because patients tend to place greater weight on interpersonal aspects such as communication, empathy, and responsiveness rather than on the physical condition of the room. Nightingale's Environmental Theory and Evidence-Based Design both affirm that the physical environment, including cleanliness, influences clinical outcomes and safety, although its effect on subjective satisfaction is often limited (Ferreira et al., 2023). The impact of cleanliness on satisfaction may also be mediated or suppressed by other variables, such as communication quality or patient trust (Jameel et al., 2025). According to Service Encounter Theory, the quality of interaction is more decisive for overall satisfaction, making cleanliness only a complementary factor. This is reinforced by Expectation Confirmation Theory, whereby the gap between patients' high expectations of cleanliness and the realization of a merely adequate standard may yield small or even negative effects on satisfaction (Rao et al., 2025). In fact, intensive cleaning operations can sometimes reduce patient comfort, even though technical quality improves (Bancsik et al., 2023). Research by Suhadi et al. (2022) also showed that tangible dimensions, including physical cleanliness, were not significantly related to satisfaction ($p > 0.05$), while responsiveness and empathy played a greater role (Suhadi et al., 2022). Meanwhile, Manurung et al. (2024) demonstrated that controlling environmental variables such as cleanliness, coolness, and tranquility is important to reduce patient stress and support recovery (95% CI 5.2; p = 0.01).

Therefore, maintaining room cleanliness remains essential as a baseline indicator of service quality, but it is not sufficient to generate satisfaction without the support of other aspects such as comfort, professionalism, and interpersonal interaction.

The Effect of The Ease of Administrative Procedure on Patient Satisfaction

Within the Structure–Process–Outcome (SPO) framework, administration is part of the process, where the convenience of administrative procedures plays a role in improving outcomes such as patient satisfaction and service quality (Donabedian, 1988). In SERVQUAL theory, simple and responsive administrative functions fall under the dimensions of reliability and responsiveness, thereby enhancing the perception of service quality (Parasuraman, 1988). In line with Expectation-Confirmation Theory, when administrative procedures meet patient expectations, satisfaction increases.

Sumarsono et al. (2025) reported that administrative convenience had a significant effect on patient satisfaction (path coef = 0.437; $p = 0.000$) as well as indirectly on loyalty (path coef = 0.232; $p = 0.003$). Other studies similarly showed that administrative procedures significantly influenced satisfaction (path coef = 0.453; $p = 0.000$). Samsudin (2021) also emphasized that simplicity and speed in administrative processes increase patient satisfaction (coefficient = 0.740). Likewise, Cui et al. (2025) found that concise, transparent, and efficient administrative procedures reflect good service quality ($p < 0.05$), while Alfarizi and Ngatindriatun (2022) confirmed the significant influence of administrative procedures on satisfaction (standardized direct effect = 0.453; $p = 0.000$).

However, not all research demonstrates consistent results. Park et al. (2024) reported that although administrative procedures were rated highly in descriptive terms, the effect was not statistically significant ($p = 0.526$). Similarly, Eapen et al. (2025) found that auxiliary/administrative services did not contribute significantly to satisfaction variation ($\beta = -0.03$; $p = 0.496$). These discrepancies indicate that the influence of administration on satisfaction is highly contextual and may be mediated by variables such as expectations, communication, or other systemic factors. Administrative processes are service components directly experienced by patients, making administrative convenience a crucial factor in improving the care experience. Simple procedures reduce confusion and waiting times, accelerate access to clinical services, and enhance perceptions of organizational professionalism. This reinforces the dimensions of reliability and responsiveness in service quality, which in turn foster satisfaction, trust, loyalty, and patient recommendations. Conversely, complex bureaucracy and long queues may reduce satisfaction even when medical care is of good quality.

Thus, the convenience of administrative procedures plays a significant role in shaping perceptions of overall hospital service quality, as it encompasses timeliness, clarity of processes, transparency, and efficiency of internal coordination.

The Effect of Healthcare Assurance Status on Patient Satisfaction

Patient satisfaction in health services with coverage or insurance status is often influenced by bureaucratic and administrative barriers, such as verification, referrals, or claims processes, which may increase waiting times and reduce responsiveness and tangibles in service perception (Couturier et al., 2022). This can be explained through Expectation Disconfirmation Theory (EDT), where the mismatch between expectations of full service and the reality of service limitations due to insurance regulations generates negative disconfirmation, ultimately lowering satisfaction. Within the framework of Resource Dependence/Health Systems Theory, changes in financing systems affect provider behavior in terms of time allocation and the types of services delivered, which in turn impacts service quality. Similarly, based on Equity Theory, differences in treatment between patients covered by BPJS Kesehatan and non-BPJS patients may create perceptions of unfairness, particularly when access and comfort are unequal. Stigma and differentiated facilities for insured patients further reinforce negative perceptions of service quality (Hafidzah et al., 2024). Moreover, claim tariff mechanisms create capacity pressures on providers, where financial incentives may encourage shorter visits or fewer additional services, resulting in lower process quality even when clinical outcomes can still be maintained (Afriyie et al., 2023). Empirically, Hafidzah et al. (2024) found that BPJS Kesehatan participants reported lower satisfaction levels on certain dimensions (p-value = 0), while Zumria et al. (2020) reported similar findings (p-value = 0.001). Conversely, Rad et al. (2024) found that health insurance coverage could improve service quality and patient satisfaction when supporting factors such as drug availability, shorter waiting times, and laboratory examinations were in place (Adjusted Odds Ratio [AOR] = 1.84; 95% CI: 1.13–3.02; $p < 0.05$). These findings are consistent with Siregar et al. (2024), who confirmed a significant relationship between BPJS Kesehatan service quality and patient satisfaction in Class III Inpatient Care at RSU Imelda Pekerja Indonesia Medan (p-value = 0.01). The negative coefficients associated with patient satisfaction and service quality indicate that some patients with coverage status experience dissatisfaction due to high expectations regarding the benefits of insurance and services. However, this influence is inconsistent and not always significant, suggesting that coverage status is not the primary determinant of service quality or patient satisfaction. Administrative barriers, long queues, limited drug or physician availability, and differences in inpatient room facilities often make the service experience of BPJS Kesehatan patients lower compared to that of general patients. This condition is further aggravated by the procedural burdens faced by medical staff, which reduce service efficiency. Nevertheless, patient satisfaction is more strongly influenced by other factors such as staff communication, waiting times, empathy, and the referral system rather than by coverage status alone.

The Effect of Service Quality on Patient Satisfaction

Service quality has been proven to serve as an important predictor of patient satisfaction, although its strength is not always homogeneous across dimensions or across studies. Patients come with certain expectations, and satisfaction increases when service quality aligns with those expectations (Bradacks et al., 2025; Shie et al., 2022). However, since service quality consists of multiple dimensions, only some dimensions significantly affect satisfaction, while others exert moderate effects or work indirectly through mediators such as trust, perceived value, and service experience, or are influenced by moderators such as age, frequency of visits, and health conditions (Shie et al., 2022).

Arfa et al. (2025) demonstrated that service quality had a positive and significant effect on satisfaction ($p = 0.000$), whereas Gül et al. (2023) found that some aspects of quality were not significant ($\beta = 0.07$; $t = 1.18$), and Fahmi et al. (2020) reported a negative but insignificant effect

(path coefficient = −0.097; p = 0.162). These variations may be due to ceiling effects, differences in indicator weighting, or analytical techniques (regression vs. SEM-PLS).
Overall, service quality remains the primary "face" of hospitals, as it directly shapes the patient experience and determines satisfaction, regardless of whether care is financially covered or facilities are adequate.

The Effect of Doctor–Patient Communication, Doctor Visitation Services, Inpatient Room Cleanliness, The Ease of Administrative Procedure, and Healthcare Assurance Status on Patient Satisfaction with Service Quality as a Moderating Variable

The SEM-PLS analysis showed that the moderating effect of service quality on doctor–patient communication, doctor visitation services, inpatient room cleanliness, the ease of administrative procedure, and healthcare assurance status on patient satisfaction was not significant ($p > 0.05$). This can be explained by a restricted range, in which the majority of respondents rated service quality as good, resulting in low variation and making moderation effects difficult to detect. According to Servqual theory, service quality directly affects satisfaction, while its role as a moderator tends to be weak due to variable-level mismatches and compensatory effects across quality dimensions (Bernadette & Loisa, 2024). Within the Expectation Confirmation Theory framework, service quality shapes expectations, thereby reducing potential moderation effects. Similarly, in Trust Social Exchange Theory, additional communication provides only marginal improvement when service quality is already high (Gao et al., 2024). This finding is consistent with Afyat et al. (2025), who emphasized that service quality functions more effectively as a mediator rather than a moderator, and Mabini et al. (2024), who found that quality moderation is effective only for contextual variables such as leadership or organizational culture. The non-significant results may also have been influenced by limited sample size, since detecting interaction effects requires larger samples (Sharkiya, 2023). Thus, service quality is more appropriately positioned as a predictor or mediator in influencing patient satisfaction rather than as a moderating variable.

CONCLUSION

The study's findings reveal that doctor-patient communication exerts no significant effect on patient satisfaction and has a significant effect on service quality. Doctor visitation services and inpatient room cleanliness demonstrate no significant effects on either satisfaction or service quality. The ease of administrative procedures exhibits a significant effect on satisfaction and service quality. The healthcare assurance status shows no discernible effect. Service quality itself exerts a significant effect on patient satisfaction, functioning more as a mediator rather than a moderator. It is recommended that hospitals enhance doctor communication skills through training, streamline administrative procedures through digitalization, and maintain hygiene standards with patient-centered integrated services. Patients families are anticipated to actively engage in communication with medical staff, comprehend administrative procedures and cost coverage, and contribute to maintaining ward cleanliness.

For future research, it is suggested to incorporate additional variables such as organizational culture, doctor interactions, and digital technology. A longitudinal design should be employed, and qualitative approaches such as interviews or focus group discussions (FGD) should be combined.

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