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The influence of service quality, physician communication, and patient trust on outpatient satisfaction in hospitals

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Abstract

Background: Patient satisfaction is a key indicator of hospital service quality and is influenced by service quality, doctor–patient communication, and patient trust, particularly in outpatient care.

Purpose: To analyze the effects of service quality, doctor communication, and patient trust on outpatient satisfaction based on patients' experiences in hospitals.

Method: Quantitative cross-sectional study involved 182 participants who had used outpatient services and were asked to rate one hospital they had previously visited. Data were collected using a Likert-scale questionnaire measuring service quality, doctor communication, patient trust, and patient satisfaction, and were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4.1 through evaluation of the measurement and structural models.

Results: The model yielded an R^2 of 0.711 for patient satisfaction, a Q^2 of 0.449, and a Goodness of Fit of 0.679. Service quality ($\beta=0.458$; $p<0.001$), doctor communication ($\beta=0.304$; $p=0.001$), and patient trust ($\beta=0.175$; $p=0.039$) had positive and statistically significant effects on patient satisfaction, with service quality being the most dominant predictor.

Conclusion: These findings highlight the importance of improving service quality, strengthening doctor, patient communication, and fostering patient trust to enhance patient satisfaction.

Keywords: Doctor Communication; Outpatient Satisfaction; Patient Satisfaction; Patient Trust; Service Quality.

INTRODUCTION

Patient satisfaction is a key indicator of healthcare quality and the performance of a patient centered healthcare system. International organizations such as the World Health Organization (WHO) and the Organization for Economic Co-operation and Development (OECD) emphasize that service quality is no longer measured solely by clinical indicators, but also by patients' experiences and perceptions of the services they receive, including dimensions of comfort, communication, and a sense of being valued and heard (World Health Organization, 2024). As the concept of patient-centered care evolves, patient-reported experience

measures (PREMs) have become a crucial component in evaluating service quality and promoting continuous improvement in healthcare facilities (Larson, Sharma, Bohren, & Tunçalp, 2019; Organization for Economic Co-operation and Development, 2019).

Within the modern quality of care framework, patient satisfaction is viewed as an outcome reflecting the success of the care process, alongside clinical indicators and patient safety. This approach aligns with global efforts toward value-based healthcare, where services are assessed not only by the volume of care provided, but also by the

perceived value of patients in the form of improved health, positive experiences during contact with the facility, and efficient use of resources (World Health Organization, 2024; Organization for Economic Cooperation and Development, 2019). In many countries, patient satisfaction and experience indicators are beginning to be incorporated into public accountability systems, hospital quality reports, and performance-based financing schemes, thereby strengthening the patient voice in health system governance.

In the Indonesian context, strengthening the patient perspective is also reflected in various policies and accreditation instruments that prioritize safety, continuity of care, and effective communication as essential elements of hospital service standards. However, implementation in the field still faces challenges, including limited resources, visitor density, and variations in managerial capacity between facilities. Consequently, the quality of care perceived by patients can vary significantly from one hospital to another, even within the same regulatory framework. This gap between expected service standards and actual patient experiences means measuring outpatient satisfaction and experiencing a strategic agenda for healthcare facility managers.

Conceptually, patient satisfaction arises from the comparison between expectations and perceptions of the service received, thus closely related to perceived service quality. Service quality models such as SERVQUAL emphasize five key dimensions (tangible, reliability, responsiveness, assurance, and empathy) that have been shown to be relevant in the context of healthcare (Shie, Huang, Li, Lyu, Yang, Dai, Su, & Wu, 2022). A recent literature review indicates that service quality is one of the strongest determinants of outpatient satisfaction in hospitals; the dimensions of staff responsiveness, clarity of information, comfort of facilities, and friendly and empathetic attitudes of healthcare workers are consistently associated with increased satisfaction (Cendana, 2024). Qualitative findings at a public hospital in Palembang also highlight that staff appearance, facility conditions, responsiveness, and empathy are key factors in perceived service quality and patient revisit intentions (Noviyani & Viwattanakulvanid, 2024). Despite the existence of various healthcare quality measurement models,

such as SERVPERF, HEALTHQUAL, and various hospital-specific scales, recent studies indicate that there is no single consensus on the best indicators for assessing hospital service quality, particularly in developing countries. Despite this diversity, the dimensions outlined in SERVQUAL remain widely used as a starting point for capturing patient perceptions of service quality because they are considered comprehensive and easily adapted to local contexts (Darzi, Islam, Khursheed, & Bhat, 2023; Endeshaw, 2021).

In addition to the technical and administrative aspects of care, the quality of communication between doctors and patients is another important component that influences patient experience and satisfaction. Effective communication encompasses not only the delivery of medical information but also clarity of explanation, opportunities for questions, empathy, and patient involvement in clinical decision-making. A quantitative study of outpatients in a tertiary hospital showed that the quality of physician communication, particularly clarity of information regarding diagnosis, therapy, medication side effects, and costs, had a positive and significant correlation with patient satisfaction and explained a substantial proportion of the variation in overall satisfaction (Chen, Liu, Yan, Wang, Xu, & Yao, 2025). Another study using national survey data in Korea found that information provided by doctors and nurses, as well as the communication and shared decision-making process, were among the most powerful factors influencing patient satisfaction with outpatient care, particularly in patients with chronic diseases (Cha, 2025). In addition to its direct impact on satisfaction, effective communication also plays a role in improving patient understanding of the disease, strengthening shared decision-making, and reducing the risk of non-adherence or misunderstanding of the treatment plan. Various physician communication assessment instruments, such as the Communication Assessment Tool (CAT), have been developed to capture patient perceptions of key aspects of communication, from listening and explaining skills to demonstrating respect and empathy during consultations (Makoul, Krupat, & Chang, 2007). These findings confirm that communication is not merely an accessory, but a core component of patient-centered medical practice.

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The next important dimension is patient trust in healthcare providers. Trust reflects patients' confidence that doctors and hospitals will act in their best interests, possess professional competence, uphold integrity, and provide safe and reliable care. Various studies have shown that high levels of trust not only increase satisfaction but also contribute to loyalty, adherence to therapy, and the sustainability of long-term therapeutic relationships (Shie et al., 2022). In the context of hospital services, good service quality can build patient trust, which in turn increases patients' willingness to return for treatment and recommend the hospital to others (Shie et al., 2022). Qualitative findings in Palembang also indicate that emotional factors, complaint experiences, and trust play a significant role in shaping outpatient satisfaction and revisit intentions (Noviyani & Viwattanakulvanid, 2024). Measuring patient trust in physicians and healthcare institutions generally encompasses dimensions of professional reliability, honesty, confidentiality, and concern for patient interests, as defined in various trust scales such as the Wake Forest Physician Trust Scale (Hall, Zheng, Dugan, Camacho, Kidd, Mishra, & Balkrishnan, 2002; Dugan, Trachtenberg, & Hall, 2005). Empirical evidence suggests that patients with high levels of trust tend to be more cooperative in managing chronic diseases, more compliant with treatment regimens, and less likely to switch providers without a clear clinical reason (Shie et al., 2022).

Although several studies in Indonesia have examined the relationship between service quality and patient satisfaction, most tend to focus on a single hospital or a specific patient group (e.g., Social Security Administering Body participants at a single hospital), and analyze the relationship between only two key variables, such as service quality and satisfaction or waiting time and satisfaction (Cendana, 2024; Hasibuan, 2025). These studies provide important insights, but few studies have simultaneously modeled the role of service quality, doctor communication, and patient trust in explaining outpatient satisfaction within a single, comprehensive structural framework. Furthermore, most previous studies have used linear regression or simple correlation analysis, thus failing to fully capture the latent relationships between constructs measured by multi-item scales and testing the quality of the measurement model separately from the structural model. The use of a structural equation modeling approach, specifically PLS-SEM, provides an opportunity to analyze the relationships between latent constructs more comprehensively while

evaluating the validity and reliability of the instruments used within a single, integrated analytical framework (Hair, Hult, Ringle, & Sarstedt, 2022). In fact, these three factors are interrelated: good service quality can improve communication quality and strengthen trust, while effective communication can be a mechanism for building trust and increasing satisfaction.

Based on these gaps, this study was conducted to empirically analyze the influence of service quality, doctor communication, and patient trust on outpatient satisfaction in hospitals using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach. Participants in this study were asked to complete a questionnaire based on their experiences at the hospitals they had visited, thus reflecting the variation in patient experiences across different types of hospitals. This approach is expected to provide a broader picture of the factors that shape outpatient satisfaction, while also enriching empirical evidence in Indonesia regarding the importance of improving service quality, strengthening doctor communication competencies, and building patient trust as key strategies in hospital quality management. On the other hand, the use of a combination of internationally standardized instruments (SERVQUAL for service quality, CAT for physician communication, Wake Forest Physician Trust Scale for patient trust, and PSQ-18 for patient satisfaction) adds strength to this study because it allows for comparison of findings with studies in other countries and provides a strong basis for the development of more specific instruments in the Indonesian context in the future (Makoul et al., 2007; Marshall & Hays, 1994; Thayaparan & Mahdi, 2013; Hall et al., 2002). The research findings are expected to provide input for policymakers and hospital management in designing more targeted interventions to improve patient experience and satisfaction.

RESEARCH METHOD

This study used a quantitative design with a cross-sectional approach. The study was conducted in 2025, targeting patients who had used outpatient services at a hospital. Participants were asked to complete a questionnaire based on their experiences at a hospital they had visited and wanted to assess. The target population in this study was adult patients

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who had undergone outpatient visits at a hospital. Inclusion criteria included: being at least 18 years old, having received outpatient services at a hospital, being able to read and understand Indonesian, and being willing to participate after receiving an explanation of the study's purpose and procedures. Questionnaires that were incomplete or raised doubts (e.g., duplicate entries) were excluded from the analysis. The sampling technique used was non-probability sampling with a purposive approach, where participants were selected based on their fulfillment of the inclusion criteria and willingness to participate. A total of 182 participants met the criteria and were included in the analysis. Data on participant characteristics such as age, gender, education level, employment status, and health insurance membership were collected to describe the sample profile descriptively.

Data collection was conducted using a structured questionnaire consisting of a participant characteristics section and four main sections measuring research variables: service quality, physician communication, patient trust, and patient satisfaction (Hutadjulu, Budidharmanto, & Padmalia, 2026). Each variable was measured using a standardized instrument. Service quality was measured using the SERVQUAL questionnaire, which assesses several dimensions of service quality perceived by patients. Physician communication was measured using the Communication Assessment Tool (CAT), which captures patients' perceptions of physicians' interpersonal communication skills. Patient trust was measured using the Wake Forest Physician Trust Scale (WFPTS), which assesses patients' trust in physician competence, integrity, and goodwill. Patient satisfaction was measured using the Patient Satisfaction Questionnaire-18 (PSQ-18), which covers various aspects of satisfaction with medical services. All instruments were presented in Indonesian on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The score for each variable was obtained from the average item score on the related instrument, with higher values indicating higher service quality, physician communication, trust, or satisfaction.

During the questionnaire filling process, participants were asked to answer each item based on their actual experiences receiving outpatient services at the selected hospital. Researchers

emphasized that the questionnaire should be completed independently without discussion with other participants, ensuring that answers reflect each participant's personal perceptions. To reduce the possibility of errors, instructions were presented concisely and clearly on the first page of the questionnaire, and researchers or enumerators provided additional explanations when necessary. The collected questionnaires were reviewed to ensure no items were missing; if there were any minor gaps that could be clarified, participants were given the opportunity to complete them before the questionnaire was declared final.

Data analysis was conducted in two major stages. First, descriptive analysis was used to describe the characteristics of participants and the distribution of scores for each research variable. The mean, standard deviation, minimum, and maximum values were calculated for each latent construct, while categorical data such as gender, age group, education, and employment status were presented in the form of frequencies and percentages. Second, inferential analysis was conducted using the Partial Least Squares-based Structural Equation Modeling (PLS-SEM) approach with the assistance of SmartPLS software version 4.1. The PLS-SEM analysis began with an evaluation of the measurement model (outer model) to assess the quality of the instruments used. Convergent validity was examined through outer loading and Average Variance Extracted (AVE) values, while reliability was assessed using Cronbach's alpha and composite reliability values. Discriminate validity was assessed by comparing the relationships between constructs to ensure that each measured construct truly represents a distinct concept.

In the evaluation of the measurement model, indicators with loading values below the threshold commonly used in the PLS-SEM literature were carefully examined; in this study, all indicators showed loading values above this threshold, so that no indicators were eliminated from the model. The AVE value was used to ensure that the proportion of variance explained by the construct to its indicators was adequate, while the Cronbach's alpha and composite reliability values described the internal consistency of the items within each construct. Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT) approach to ensure that each construct was truly distinct from one another empirically.

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After the measurement model was declared adequate, a structural model (inner model) evaluation was conducted to assess the relationships between latent variables. The feasibility of the structural model was reviewed through the coefficient of determination (R^2) value for the endogenous construct, the predictive relevance value (Q^2), and the Goodness of Fit (GoF) value to assess the overall model suitability. The potential for multicollinearity between exogenous constructions was examined using the Variance Inflation Factor (VIF) value. In addition, the effect size (f^2) was calculated to determine the relative contribution of each exogenous variable to the endogenous construct of patient satisfaction. Hypothesis testing

was conducted through a bootstrapping procedure to obtain path coefficient values and statistical significance. The significance level used in this study was $p < 0.05$.

All participants were guaranteed confidentiality; the data collected did not contain names or personal identifying information and was used solely for research purposes. Participation was voluntary, and participants were free to decline or discontinue participation at any time without any consequences to their access to health services. The data collected was stored in aggregate form and password-protected, making it accessible only to the research team.

RESEARCH RESULTS

Table 1. Characteristics of the Participant (N=182)

Variable	Results
Age (n/%)	
(Mean±SD)(Range)(Years)	(34.0±8.8)(20-57)
≤ 30	76/41.8
31-40	71/39.0
> 40	35/19.2
Gender (n/%)	
Male	11/6.0
Female	171/94.0

Based on table 1. Participant characteristics data shows that the majority of participants were aged ≤30 years with a percentage 41.8% of participants, with a total of 76 participants. Based on gender shows that the majority of participants in this study were female, with a percentage reaching 6% or 11 people. data indicates that the research sample was heavily dominated by female participants out of a total of 182 participants who participated. Data were analyzed using the PLS-SEM approach with the aid of SmartPLS 4.1 software. Evaluation was carried out in stages by testing the measurement model (outer model) and structural model (inner model) before drawing conclusions regarding the research hypothesis.

Measurement model testing (Outer Model), Convergent validity test shows that all indicators in the constructs of Service Quality, Doctor Communication, Patient Trust, and Patient Satisfaction have outer loading values above 0.70. The Average Variance Extracted (AVE) value of each construct has also exceeded the minimum limit of 0.50, so that each construct is declared to have adequate convergent validity.

Table 2. Reliability Construct (Cronbach's Alpha and Composite Reliability)

Latent variables	Cronbach's alpha	Composite reliability (rho_c)	Information
Quality of Service	0.987	0.988	Reliable
Doctor Communication	0.962	0.966	Reliable
Patient Trust	0.957	0.961	Reliable
Patient Satisfaction	0.968	0.971	Reliable

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Construct reliability was assessed using Cronbach's alpha and composite reliability. All latent variables showed Cronbach's alpha and composite reliability values > 0.70 , indicating that the internal consistency of the items in each construct was in the good category and met the reliability criteria for further analysis.

Table 3. Heterotrait Monotrait (HTMT)

Path coefficient Latent variable	Heterotrait-monotrait ratio (HTMT)	Information
Patient Satisfaction ↔ Patient Trust	0.744	Fit
Doctor Communication ↔ Patient Trust	0.732	Fit
Doctor Communication ↔ Patient Satisfaction	0.761	Fit
Quality of Service ↔ Patient Trust	0.740	Fit
Quality of Service ↔ Patient Satisfaction	0.804	Fit
Quality of Service ↔ Doctor Communication	0.692	Fit

The discriminant validity test using the Heterotrait-Monotrait Ratio (HTMT) criterion showed that all pairs of constructs had HTMT values < 0.90 . This indicates that each construct in the model (Service Quality, Doctor Communication, Patient Trust, and Patient Satisfaction) truly represents a distinct concept and has met the discriminant validity criteria, making it worthy of inclusion in the structural model.

Table 4. Calculation of GoF test values

Average AVE	Mean R squared	GoF	Information
0.649	0.711	0.679	Tall

The suitability of the structural model was assessed using several indicators. First, the Goodness of Fit (GoF), calculated from the average AVE and R^2 values, yielded a GoF of 0.679 (67.9%), which is in the high category. This value indicates that the research model has a good overall fit and is simultaneously capable of representing the relationship between exogenous and endogenous constructs quite strongly.

Table 5. Collinearity assessment VIF

Path coefficient Latent variable	VIF	Multicollinearity
Patient Trust → Patient Satisfaction	2,530	No
Doctor Communication → Patient Satisfaction	2,250	No
Quality of Service → Patient Satisfaction	2,369	No

Collinearity assessment showed that all Variance Inflation Factor (VIF) values for the variables Service Quality, Doctor Communication, and Patient Trust were below 5.0. Thus, no significant multicollinearity problems were found among the predictor variables in explaining Patient Satisfaction.

Table 6. Coefficient of determination (R²)

Latent Variables	R-square	R-square adjusted	Information
Patient Satisfaction	0.711	0.706	Big

The model's explanatory power for endogenous variables is demonstrated by the Patient Satisfaction R^2 value of 0.711. This value indicates that 71.1% of the variation in Patient Satisfaction can be jointly explained by Service Quality, Doctor Communication, and Patient Trust, while the remaining 28.9% is influenced by factors outside the research model. This high R^2 value indicates strong estimation accuracy.

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Table 7. Predictive relevance (Q2)

Latent Variables	SSO	SSE	Q ² (=1-SSE/SSO)	Information
Patient Trust	2366	2366	0	Big
Patient Satisfaction	3276	1806.087	0.449	
Doctor Communication	2912	2912	0	
Quality of Service	8008	8008	0	

In addition, the Q² predictive relevance value for the Patient Satisfaction construct was 0.449, which is in the high predictive relevance category. A Q² value > 0 confirms that the model has good predictive ability for Patient Satisfaction, so that the estimation results are not only in accordance with the sample data but also quite relevant for prediction purposes.

Table 8. Effect size f² value

Latent Variables	f-square	Information
Patient Trust→Patient Satisfaction	0.042	Small
Doctor Communication →Patient Satisfaction	0.142	Small
Quality of Service→Patient Satisfaction	0.307	Currently

Effect size (f²) analysis was conducted to examine the relative contribution of each exogenous construct to Patient Satisfaction. Patient Trust and Patient Satisfaction had an f² value of 0.042, which is considered small. Doctor Communication and Patient Satisfaction had an f² value of 0.142, also considered small but approaching medium. Service Quality and Patient Satisfaction had an f² value of 0.307, which is considered medium and is the largest contributor among the three exogenous variables to Patient Satisfaction. This finding indicates that, although all variables contribute positively to Patient Satisfaction, Service Quality has the strongest relative influence compared to Doctor Communication and Patient Trust.

Table 9. Hypothesis Test of the Direct Influence of the Research Model

Hypothesis	Path Coefficient	Original Sample (O)	T Statistics (O/STDEV)	p-values	Information
H1	Patient Trust → Patient Satisfaction	0.175	2,068	0.039	Accepted
H2	Doctor Communication → Patient Satisfaction	0.304	3,308	0.001	Accepted
H3	Quality of Service → Patient Satisfaction	0.458	4.109	0.000	Accepted

Hypothesis testing was conducted through a bootstrapping procedure on the structural model. The results of the analysis showed that Patient Trust had a positive and significant effect on Patient Satisfaction, with the Original Sample (O) path coefficient of 0.175 and a p-value = 0.039 (p < 0.05), so the hypothesis stating a positive effect of Patient Trust on Patient Satisfaction was accepted. Similarly, Doctor Communication was shown to have a positive and significant effect on Patient Satisfaction with a path coefficient value of 0.304 and a p-value = 0.001 (p < 0.05), so the related hypothesis was also

accepted. Furthermore, Service Quality had a positive and significant effect with a path coefficient of 0.458 and a p-value = 0.000 (p < 0.05); the largest coefficient value among these three predictors indicates that Service Quality is the most dominant factor in increasing Patient Satisfaction. Overall, the results of this test indicate that the three exogenous variables (Service Quality, Doctor Communication, and Patient Trust) have a positive and significant effect on outpatient patient satisfaction, with the largest contribution coming from Service Quality.

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Overall, the combined results of the outer and inner model evaluations indicate that the instrument used is able to consistently measure the latent constructs and that the structural relationships proposed in the research model are supported by empirical data. Very high reliability values, good convergent and discriminant validity, and strong explanatory and predictive capabilities of the model provide a solid foundation for further interpretation of the findings in the discussion section. These findings indicate that service quality, physician communication, and patient trust are not only correlated with satisfaction but also act as statistically significant predictors in explaining variations in outpatient satisfaction.

DISCUSSION

The results of the study indicate that the PLS-SEM model developed has strong explanatory and predictive capabilities for outpatient satisfaction. The R^2 value of 0.711 indicates that more than two-thirds of the variation in patient satisfaction can be explained by service quality, doctor communication, and patient trust, which in the PLS-SEM literature is categorized as a substantial level of explanation for the endogenous construct of attitudes or behavior (Hair et al., 2022). The Q^2 value of 0.449 also falls into the category of high predictive relevance, indicating that this model not only adequately explains the sample data but is also quite suitable for use for predictive purposes in the context of outpatient services. These findings indicate that the three variables studied are important dimensions that shape patients' overall experience with hospital services (Hair et al., 2022).

Unlike many previous studies in Indonesia that focused on a single institution or specific group of participants, this study used participants who rated their experiences at a variety of hospital types. This approach yields a broader picture of the quality of outpatient care as perceived by patients within the context of a diverse healthcare system. While this design does not allow for the identification of specific differences in quality across hospital types, the variations in experience captured in the data suggest that common factors such as service quality, physician communication, and patient trust remain key determinants of satisfaction, regardless of ownership, hospital class, or geographic location

(Cendana, 2024; Noviyani & Viwattanakulvanid, 2024; Cha, 2025).

In this study, service quality emerged as the most dominant predictor of patient satisfaction, with a path coefficient and effect size greater than doctor communication and patient trust. These results are consistent with various studies showing that service quality, including aspects of reliability, responsiveness, assurance, empathy, and tangibles, is a key determinant of satisfaction in both outpatient and inpatient settings (Darzi et al., 2023; Owusu, Boakye, Boateng, Osei-Mensah, & Agyei-Baffour, 2024; Shie et al., 2022). A study in Ghana, for example, found that the quality of the physical environment, staff friendliness, availability of directions, and waiting room comfort were strongly correlated with patient satisfaction in outpatient clinics (Owusu et al., 2024). A similar pattern is evident in this study, where high service quality scores and the significant contribution of these variables to satisfaction suggest that patients are highly sensitive to aspects of the service experience that directly impact administrative processes, facility comfort, and the responsiveness of healthcare workers. In practical terms, this confirms that managerial interventions to improve service quality, such as managing waiting times, improving registration flows, increasing room cleanliness and comfort, and the friendly attitude of non-medical staff, are still important focal points in efforts to increase outpatient satisfaction.

In the Indonesian context, patient-perceived service quality is often closely linked to wait time management and smooth service flow. Research by Hasibuan (2025) shows that long outpatient wait times are associated with decreased patient satisfaction, even when the clinical aspects of the service are rated as good. This underscores that interventions focused on process optimization, such as more accurate scheduling, grouping visits based on clinical needs, and utilizing information technology for patient registration and call-in, can have a direct impact on perceived service quality. When patients feel their time is valued and the service process runs smoothly, other dimensions such as empathy and professional assurance also tend to be evaluated more positively, cumulatively increasing satisfaction.

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Physician communication has also been shown to have a positive and significant impact on patient satisfaction, although the magnitude of the effect is smaller than that of service quality. These results align with research in various countries showing that effective physician communication, including clarity of explanation, opportunities for questions, use of easily understood language, and empathy, is strongly correlated with patient satisfaction and experience (Chen et al., 2025; Jameel, Sahito, Guo, & Khan, 2025). The dimensions of medical information communication and communication skills were the strongest predictors of patient satisfaction, while emotional aspects tended to be less influential in the context of brief consultations in a polyclinic. These findings align with the pattern in this study, where physician communication continues to contribute significantly to satisfaction, although not as significant as overall service quality. This is understandable because in outpatient settings, patients often assess the experience holistically, combining their impressions of the physician with their experiences at the facility (e.g., the registration process, room comfort, and waiting time). In the post-pandemic era, when telemedicine and remote consultations are increasingly used, communication quality becomes even more crucial as some nonverbal cues are reduced and the risk of misunderstanding increases. Physicians' skills in rephrasing medical information in simple language, verifying patient understanding, and building rapport virtually are emerging competencies that need to be strengthened in medical education curricula and primary care physician development programs (Chen et al., 2025; Jameel et al., 2025). Thus, the findings of this study serve as a reminder that investment in improving physician communication remains relevant for both face-to-face and digital services.

Patient trust was also shown to have a positive and significant effect on satisfaction, although its effect size was relatively small compared to the other two variables. This finding is consistent with the literature that places trust as a key element in long-term patient-provider relationships, influencing compliance, loyalty, and willingness to return for treatment (Shie et al., 2022; Jameel et al., 2025). Good service quality can increase patient trust, which in turn encourages loyalty to the hospital. Meanwhile, trust mediated the relationship between

practitioner communication, environmental cleanliness, and patient satisfaction. In the context of this study, trust is measured as patients' belief that physicians and healthcare facilities act competently, honestly, and prioritize the patient's interests. From a measurement perspective, trust scales such as the Wake Forest Physician Trust Scale used in this study focus on assessing patients' beliefs in the physician's clinical competence, honesty, and caring (Hall et al., 2002; Dugan et al., 2005). In many contexts, high trust scores are often associated with long-term therapeutic relationships between patients and their family physicians or specific specialists, where repeated interactions allow patients to develop more stable judgments of the physician's professionalism and integrity. In this study, participants were asked to reflect on their experiences at hospitals they had visited, suggesting that their relationships with their physicians may be more episodic. This may explain why the effect of trust on satisfaction, while significant, was relatively smaller than that of perceived doctor service quality and communication during a single visit. This finding opens the door to further analysis using mediation models, such as testing whether doctor service quality and communication influence satisfaction through trust, as previous studies have shown (Shie et al., 2022; Jameel et al., 2025).

In terms of effect size, the moderate f^2 value for the relationship between service quality and satisfaction and the small f^2 value for doctor communication and patient trust indicate that service quality is the primary driver in this model, while doctor communication and trust provide additional contributions that enrich the patient experience. Regarding effect size categorization in PLS-SEM, where small effects are still considered meaningful when they relate to theoretically important variables, such as trust and communication in the context of healthcare. From a PLS-SEM perspective, small, significant effects are still noteworthy when they represent important aspects of the patient experience that are difficult to intervene directly but have long-term impacts, such as trust and communication (Hair et al., 2022). The use of PLS-SEM in this study also provides flexibility in handling models with multiple latent constructs and reflective indicators and is suitable for moderate sample sizes such as 182 participants. Furthermore, this approach

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allows researchers to evaluate the quality of the measurement and structural models simultaneously, thus providing a more robust interpretation of the findings compared to simple linear regression analysis.

Compared with international findings, this study's results reinforce the understanding that outpatient satisfaction is shaped by a combination of interpersonal and organizational factors. A study in Ghana showed that aspects of the physical environment, the availability of supporting facilities, and staff attitudes significantly influenced patient satisfaction in polyclinics (Owusu et al., 2024). SERVQUAL dimensions, particularly reliability and empathy, consistently correlated with patient satisfaction across healthcare settings, in both developed and developing countries. Meanwhile, recent studies emphasize that improving communication and building trust in clinical interactions are important strategies for enhancing patient experience and reducing doctor-patient conflict (Chen et al., 2025; Jameel et al., 2025). It is interesting to note that various reviews of healthcare quality measurement models emphasize the need for local adaptation of generic instruments such as SERVQUAL to suit the cultural context and financing systems of each country (Endeshaw, 2021). Although this study used a version adapted into Indonesian, the structure of the quality dimensions measured remained consistent with international literature, allowing for careful comparison of the results with studies conducted in other countries. The finding that the service quality and physician communication dimensions remain consistent determinants of satisfaction supports the view that the basic principles of patient-centered care are relatively universal, although their manifestations may vary across social and institutional contexts.

Practically, the results of this study have several implications for healthcare facility managers. First, top priority should be given to improving the quality of care perceived by patients, not only in terms of clinical competence but also in terms of the process and service environment. Investing in more efficient queuing systems, comfortable waiting room facilities, a clean and tidy environment, and friendly and helpful behavior from all staff can have a significant impact on patient satisfaction, as has been documented in studies in various low- and middle-

income countries (Owusu et al., 2024; Shie et al., 2022). Second, the significant impact of physician communication highlights the importance of structured clinical communication training, such as the use of instruments such as the Communication Assessment Tool (CAT) for regular feedback to physicians, as recommended in studies of medical education and communication quality (Makoul et al., 2007; Chen et al., 2025). Third, quality management strategies need to incorporate trust-building dimensions through information transparency, consistent professional behavior, and patient safety assurance, as demonstrated by models of the relationship between service quality, trust, and loyalty in previous studies (Shie et al., 2022; Jameel et al., 2025). In addition to interventions focused on healthcare workers and internal processes, involving patients and families as partners in quality improvement is also important. Mechanisms such as regular patient experience surveys, patient focus groups, and committees involving patient representatives can help hospitals identify priority areas for improvement from the perspective of service users (Larson et al., 2019; World Health Organization, 2024). This approach not only enriches the information obtained through quantitative indicators but also strengthens the community's sense of ownership and trust in healthcare facilities.

However, several limitations should be considered when interpreting the results of this study. The cross-sectional design does not allow for strong causal inferences, so the relationships found should be understood as theoretically supported associations, not as pure evidence of causality. Data was collected based on patients' experiences across multiple hospitals, as they recalled, without being tied to a single institution; this approach provides a more general picture of patients' experiences in outpatient care but opens the possibility of recalling bias and heterogeneity in service contexts that were not fully controlled for. The use of self-report questionnaires is also potentially influenced by social bias and participant's mood at the time of completion, while clinical characteristics such as disease severity and type of service access were not analyzed as covariates. Another limitation that needs to be considered is the potential for common method bias, as all variables were measured using self-report questionnaires at the same time. While the

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design and analyses used, including evaluations of discriminant validity and reliability, can partially mitigate the risk of bias, the possibility of a tendency toward positive social responses or participant's desire to provide answers deemed "good" cannot be eliminated. Furthermore, the model used only tested the direct effect of the three variables on satisfaction without exploring possible mediating or moderating relationships.

Based on these limitations, further research is recommended using longitudinal or experimental designs, involving data from clearly identified healthcare facilities, and incorporating contextual variables such as waiting times, costs, financing types, and patient clinical conditions. Developing more complex structural models, for example by examining the mediating role of trust between service quality and doctor communication on satisfaction or incorporating loyalty or re-treatment intentions as additional endogenous variables, also has the potential to enrich understanding of the dynamics of patient experiences in outpatient care. Nevertheless, overall, the results of this study confirm that efforts to improve outpatient satisfaction need to be directed simultaneously at improving service quality, strengthening doctor communication, and building trust as an integrated hospital quality management strategy. The SERVQUAL, CAT, WFPTS, and PSQ-18 instruments used in this study have previously demonstrated good validity and reliability across a variety of healthcare settings, so their application in the context of outpatients in Indonesia provides additional contributions to the literature on measuring quality and patient experience in middle-income countries (Makoul et al., 2007; Marshall & Hays, 1994; Thayaparan & Mahdi, 2013; Hall et al., 2002; Dugan et al., 2005).

CONCLUSION

This study shows that outpatient satisfaction is substantially influenced by service quality, physician communication, and patient trust. The PLS-SEM model used has strong explanatory power, with an R^2 value of 0.711 for patient satisfaction and high predictive relevance, so these three variables can be considered important determinants of patient satisfaction based on their experiences at various hospitals. Service quality proved to be the most dominant predictor, followed by physician

communication and patient trust, each of which had a positive and significant effect on satisfaction. These findings confirm that patients' experiences with outpatient services are not only shaped by clinical interactions with physicians, but also by the overall quality of service perceived throughout the care process.

Based on these results, it is recommended that hospital management and healthcare policymakers prioritize efforts to improve the quality of care perceived by patients, including through improvements to service flows and systems, wait time management, increased facility comfort and adequacy, and strengthening a friendly and responsive service culture across all levels. Furthermore, training and development of physician communication skills need to be systematically improved, for example through clinical communication training programs, the use of communication assessment instruments, and regular feedback. Building and maintaining patient trust is also crucial through information transparency, consistent professional behavior, and a commitment to patient safety. For future research, it is recommended to develop models that incorporate other variables such as patient loyalty, intention to revisit, or hospital image, as well as the use of longitudinal or facility-based designs to strengthen causal evidence and deepen understanding of the dynamics of outpatient satisfaction.

In terms of scientific contribution, this study adds empirical evidence regarding the use of a combination of internationally standardized instruments in the context of outpatients in Indonesia and the application of PLS-SEM to model the relationship between service quality, physician communication, trust, and patient satisfaction. Meanwhile, from a policy perspective, the results of this study can provide input for policymakers at the hospital and health system levels to design performance indicators that are more sensitive to patient experience, integrate clinical and nonclinical measures in quality measurement, and encourage an organizational culture that is more responsive to the voice of patients. Thus, improving outpatient satisfaction can be seen not merely as an administrative target, but as an integral part of efforts to achieve quality, safety, and patient-centered health services.

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