

## **Determinants of Outpatient Satisfaction Based on Health Service Quality Dimensions in Primary Health Care**

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Submitted : 7 July 2025 Accepted : 9 February 2026 Accepted : 14 February 2026

### **ABSTRACT**

Primary health care performance is closely linked to patient satisfaction, which reflects the extent to which services meet patient expectations. This study aimed to identify the determinants of outpatient satisfaction based on health service quality dimensions at Puskesmas Simo, Boyolali. A cross-sectional analytical observational design was applied involving 100 outpatient respondents selected through convenience sampling. Data were collected using a validated and reliable structured questionnaire and analyzed using univariate, bivariate, and multivariate logistic regression methods. Results showed that the majority of respondents rated service quality positively across all SERVQUAL dimensions, with 90% reporting satisfaction. Multivariate analysis revealed that four dimensions of reliability (OR = 6,08), responsiveness (OR = 4,20), assurance (OR = 2,66), and empathy (OR = 5,09) significantly influenced outpatient satisfaction ( $p < 0,05$ ), whereas tangibles did not ( $p = 0,220$ ). Reliability was the strongest determinant, indicating that patients perceiving consistent, timely, and accurate services were more than six times likely to report satisfaction. These findings highlight that non-physical aspects of service quality, including interpersonal interactions and service process effectiveness, are more decisive than physical infrastructure in determining patient satisfaction. Strengthening staff competencies, ensuring standardized procedures, and promoting patient-centered care are recommended to enhance service quality in primary health care.

**Keywords:** Health Service Quality; Outpatients; Patient Satisfaction; Primary Health Care; SERVQUAL

### **INTRODUCTION**

The Indonesian government continues to strengthen primary health care as a strategic effort to improve public health outcomes, with Community Health Centers (Puskesmas) serving as the frontline of service delivery. Puskesmas are mandated to provide equitable, optimal, and comprehensive care with a strong emphasis on promotive and preventive services (1,2). The effectiveness of these services is closely linked to patients' perceptions of service quality and satisfaction, which increasingly serve as key indicators of primary health care performance.

Outpatient satisfaction reflects the extent to which health services meet patients' expectations and plays a crucial role in evaluating the performance and sustainability of Puskesmas. High service quality is associated with positive patient experiences, increased satisfaction, and stronger public trust, whereas poor service quality remains a major contributor to dissatisfaction and declining confidence in primary health care facilities (3). Therefore, identifying the determinants of outpatient satisfaction is essential for improving the effectiveness of primary health care services.

Health service quality is widely recognized as a multidimensional construct encompassing both clinical and non-clinical aspects of care. The SERVQUAL framework conceptualizes service quality through five dimensions: tangibles, reliability, responsiveness, assurance, and empathy, which are commonly applied to identify determinants of patient satisfaction. Empirical evidence demonstrates significant associations between these dimensions and outpatient satisfaction across various health care settings. Several studies reported that all SERVQUAL dimensions significantly influenced outpatient satisfaction, highlighting the importance of

comprehensive service quality assessment and implying that improvements must target multiple service domains simultaneously to achieve meaningful enhancements in patient experience and overall service performance (4–6).

However, other studies reveal variation in the dominance of specific service quality dimensions. Some findings indicate that assurance is the most influential determinant, emphasizing the importance of professional competence and patient trust in health service delivery (7). Conversely, studies conducted in primary health care settings reported reliability, responsiveness, or empathy as the strongest determinants of outpatient satisfaction, while tangibles showed inconsistent or non-significant associations (8,9). Additional evidence from hospital-based studies also demonstrated that responsiveness and reliability were the most strongly associated dimensions with patient satisfaction, whereas assurance did not always show a significant relationship (10). These variations suggest that the influence of SERVQUAL dimensions on outpatient satisfaction is highly context-dependent and cannot be generalized across health care facilities.

Despite extensive research on service quality and patient satisfaction, evidence from Puskesmas particularly at the facility level remains limited and inconsistent. Preliminary observations at Puskesmas Simo, Boyolali revealed patient dissatisfaction related to prolonged waiting times, limited staff friendliness, and inadequate waiting room comfort, indicating potential gaps across multiple service quality dimensions. These findings highlight the need for context-specific analysis to identify dominant determinants of outpatient satisfaction within primary health care settings.

Based on these conditions, this study aims to analyze the determinants of outpatient satisfaction based on health service quality dimensions at Puskesmas Simo, Boyolali. By identifying the most influential SERVQUAL dimensions within a primary health care context, this study provides empirical, context-specific evidence to support targeted service quality improvement strategies and strengthen patient-centered care in Puskesmas. Reliability often emerges as the dominant dimension in primary health care because patients tend to place the highest value on service consistency, accuracy of procedures, and the certainty of receiving timely and appropriate care. In resource-limited settings such as Puskesmas, where waiting times, staffing capacity, and procedural clarity can vary, reliable service delivery becomes a critical determinant of trust and satisfaction, outweighing physical facilities or other non-clinical aspects.

## METHODS

This study employed a quantitative analytical observational design with a cross-sectional approach. The research was conducted from May to July 2024 at Puskesmas Simo, Boyolali. The study population comprised all patients who visited the outpatient services at Puskesmas Simo during the first quarter of 2024, totaling 8,372 individuals. The sample size was determined using Slovin's formula, resulting in a total of 100 respondents. Samples were selected using convenience sampling. Patient satisfaction was defined as the dependent variable, while the independent variables consisted of health service quality dimensions, including reliability, responsiveness, assurance, empathy, and tangibles.

Data were collected using a structured questionnaire that had undergone validity and reliability testing. Validity was assessed using the Pearson product-moment correlation, yielding correlation coefficients ranging from 0,418 to 0,912, which exceeded the critical value ( $r_{table} = 0,361$ ). Reliability testing was performed using the Kuder-Richardson Formula 20 (KR-20), resulting in a reliability coefficient of 0,931, indicating high internal consistency.

Questionnaires were self-administered by respondents. Data analysis included univariate analysis to describe respondent characteristics and bivariate analysis using the Chi-square test to examine associations between variables. When Chi-square assumptions were not met, Fisher's exact test was applied. The strength of associations between nominal variables was assessed using Phi and Cramer's V coefficients, interpreted as follows: 0,000-0,199 (very weak), 0,200-0,399 (weak), 0,400-0,599 (moderate), 0,600-0,799 (strong), and 0,800-1,000 (very strong). Finally, multivariate analysis was performed using logistic regression to identify the most influential determinants of outpatient satisfaction.

## RESULTS

### Characteristics of Respondents

Characteristics of respondents included gender, age, education, and employment.

**Table 1. Characteristics of Respondents**

Characteristics	Number (n)	Percentage (%)
<b>Gender</b>		
Male	27	27
Female	73	73
<b>Age</b>		

Characteristics	Number (n)	Percentage (%)
≤ 40 years old	72	72
>40 years old	28	28
<b>Education</b>		
Elementary School	6	6
Junior High School	15	15
High School	66	66
D-3	3	3
S-1	10	10
<b>Employment</b>		
Student/Student	24	24
Civil Servant	2	2
Private Employees	18	18
Worker	23	23
Housewives	15	15
Self-Employed	18	18

According to Table 1, most respondents were female (73%), aged ≤40 years (72%), had completed senior high school education (66%), and were students (24%).

**Univariate Analysis**

Univariate analysis to display the distribution frequency of each variable in a descriptive way.

**Table 2. Variable Frequency Distribution**

Variable	Category	Number (n)	Percentage (%)
Reliability	Less	12	12
	Good	88	88
Responsiveness	Less	10	10
	Good	90	90
Assurance	Less	8	8
	Good	92	92
Empathy	Less	8	8
	Good	92	92
Tangibles	Less	6	6
	Good	94	94
Satisfaction	Dissatisfied	10	10
	Satisfied	90	90

Based on Table 2, respondents’ perceptions of service quality at Puskemas Simo were predominantly positive across all SERVQUAL dimensions. The reliability dimension was rated as good by 88% of respondents, responsiveness by 90%, and both assurance and empathy by 92%. The highest positive assessment was observed in the tangibles dimension, with 94% of respondents rating it as good. Overall, 90% of respondents reported being satisfied with the quality of services provided at Puskemas Simo.

**Bivariate Analysis**

Bivariate analysis was conducted using the Chi-square test to examine associations between independent and dependent variables. Fisher’s exact test was applied when Chi-square assumptions were not fulfilled.

**Table 3. Cross Table of Service Dimensions with Patient Satisfaction**

Variable	Satisfaction				Amount	p value	Phi Cramer’s V	
	Dissatisfied		Satisfied					
	n	%	n	%	n	%		
<b>Reliability</b>	Less	9	9	3	3	12	0,001	0,286
		1	1	87	87	88		
<b>Amount</b>	<b>10</b>	<b>10</b>	<b>90</b>	<b>90</b>	<b>100</b>	<b>100</b>		
<b>Responsiveness</b>	Less	8	8	2	2	10	0,001	0,231
		2	2	88	88	90		
<b>Amount</b>	<b>10</b>	<b>10</b>	<b>90</b>	<b>90</b>	<b>100</b>	<b>100</b>		

Variable	Satisfaction		Amount	p value	Phi Cramer's V			
	Dissatisfied	Satisfied						
<b>Assurance</b>								
Less	7	7	1	1	8	8	0,001	0,253
Good	3	3	89	89	92	92		
<b>Amount</b>	<b>10</b>	<b>10</b>	<b>90</b>	<b>90</b>	<b>100</b>	<b>100</b>		
<b>Empathy</b>								
Less	7	7	1	1	8	8	0,001	0,212
Good	3	3	89	89	92	92		
<b>Amount</b>	<b>10</b>	<b>10</b>	<b>90</b>	<b>90</b>	<b>100</b>	<b>100</b>		
<b>Tangibles</b>								
Less	6	6	0	0	6	6	0,001	0,361
Good	4	4	90	90	94	94		
<b>Amount</b>	<b>10</b>	<b>10</b>	<b>90</b>	<b>90</b>	<b>100</b>	<b>100</b>		

The results of the bivariate analysis indicate a statistically significant association between the reliability dimension and outpatient satisfaction at Puskesmas Simo ( $p = 0,001$ ). The Phi Cramer's V coefficient of 0,286 suggests that the strength of this relationship falls within the weak category. Questionnaire data further showed that 87% of respondents expressed satisfaction with the services received, indicating that reliability aspects such as service consistency, timeliness, and accuracy of health personnel in performing procedures play an important role in shaping patient satisfaction.

A significant relationship was also identified between the responsiveness dimension and outpatient satisfaction ( $p = 0,001$ ). The Phi Cramer's V coefficient value of 0,231 indicates a weak association between the two variables. This finding was supported by questionnaire results showing that 88% of respondents reported satisfaction with the services received. These results reflect patients' positive perceptions of health workers' readiness and willingness to respond promptly and appropriately to patient needs and complaints.

Similarly, the assurance dimension showed a statistically significant relationship with outpatient satisfaction ( $p = 0,001$ ). The Phi Cramer's V coefficient of 0,253 indicates a weak strength of association. Questionnaire data revealed that 89% of respondents were satisfied with the services provided, suggesting that patients generally feel confident and secure in the competence and professionalism of health workers.

The empathy dimension was also significantly associated with outpatient satisfaction ( $p = 0,001$ ), with a Phi Cramer's V coefficient of 0,212, indicating a weak relationship. Supporting data from the questionnaire showed that 89% of respondents expressed satisfaction, reflecting that patients perceived health workers as caring, attentive, and responsive to individual needs an important factor influencing satisfaction.

Furthermore, a significant association was found between the tangibles dimension and outpatient satisfaction ( $p = 0,001$ ). The Phi Cramer's V coefficient of 0,361 indicates a weak association. Questionnaire results demonstrated that 90% of respondents were satisfied with tangible aspects of service delivery. This finding suggests that observable physical elements, including facilities, medical equipment, and environmental cleanliness, contribute meaningfully to patients' perceptions of service quality and overall satisfaction.

### Multivariate Analysis

Multivariate analysis was performed using binary logistic regression with the enter method. All independent variables were simultaneously included as predictors, regardless of the strength of their individual associations with the dependent variable. This approach was applied to assess the relative contribution of each service quality dimension in predicting outpatient satisfaction.

**Table 4. Multivariate Analysis**

Independent Variable	B	S.E	Wald	Sig.	OR
Reliability	1,805	0,625	8,345	0,004	6,08
Responsiveness	1,435	0,590	5,911	0,015	4,20
Assurance	0,980	0,488	4,026	0,045	2,66
Empathy	1,627	0,610	7,116	0,008	5,09
Tangibles	0,640	0,522	1,505	0,220	1,90
Constant	-3,212	0,984	10,655	0,001	-

Based on the logistic regression analysis, four of the five service quality dimensions reliability, responsiveness, assurance, and empathy were found to have a statistically significant effect on outpatient satisfaction at Puskemas Simo ( $p < 0,05$ ). In contrast, the tangibles dimension did not show a significant effect in the multivariate model ( $p = 0,220$ ). These findings indicate that non-physical aspects of service quality play a more prominent role in determining outpatient satisfaction than physical facilities alone.

Among all variables, the reliability dimension demonstrated the strongest influence on patient satisfaction, with an odds ratio (OR) of 6,08. This result indicates that patients who perceived the reliability of services as good were more than six times more likely to report satisfaction compared with those who perceived reliability as poor. This finding underscores the critical importance of service punctuality, consistency in service procedures, and the accuracy and dependability of information provided to patients in shaping overall satisfaction.

## **DISCUSSION**

### **Reliability**

The reliability dimension emerged as the most influential determinant of outpatient satisfaction at Puskemas Simo, with an odds ratio of 6,08, indicating that patients perceiving services as reliable were over six times more likely to report satisfaction compared to those perceiving poor reliability. Bivariate analysis showed a significant association ( $p = 0,001$ ) with a Phi Cramer's V of 0,286, while 87% of respondents expressed satisfaction regarding service consistency, timeliness, and accuracy of procedures. This underscores the importance of dependable service delivery in shaping patient perceptions.

Prior studies have confirmed the critical role of reliability in outpatient satisfaction. Service speed and consistency were found to be dominant factors influencing satisfaction in community health centers (11). Reliability significantly predicts outpatient satisfaction and contributes to reducing patient uncertainty while enhancing trust (12). Internationally, consistent service delivery is associated with increased confidence and adherence to care plans (13,14). Furthermore, negative gaps between expected and perceived reliability reduce patient satisfaction (15,16).

Strengthening reliability can be achieved through standardized procedures, accurate documentation, and consistent scheduling (17,18). Reliability also interacts with assurance and responsiveness to enhance overall satisfaction (19,20). Combining reliable services with prompt responsiveness ensures that patient needs are met efficiently, further improving satisfaction (21,22). Continuous monitoring and process improvements are therefore essential for maintaining trust and quality in primary healthcare (12,23,24).

### **Responsiveness**

Responsiveness was significantly associated with outpatient satisfaction ( $p = 0,001$ , Phi Cramer's V = 0,231), with 88% of respondents satisfied with health workers' promptness and willingness to address patient needs and complaints. This indicates that timely, attentive responses are crucial for patient-perceived service quality. Evidence from previous studies supports these findings. Responsiveness significantly influences outpatient satisfaction in various healthcare settings (21,25). Studies also show that prompt and patient-centered service improves adherence and perceived quality (22,26). Clear communication, willingness to assist, and rapid response to complaints enhance satisfaction and trust (14,27). Negative gaps in responsiveness have been reported in public hospitals, highlighting the need for timely and effective interactions (15,28,29).

Operational strategies to improve responsiveness include structured triage systems, rapid complaint handling, and staff training in active listening (17,19). When combined with reliability, responsiveness maximizes patient satisfaction by ensuring services are delivered accurately and promptly (12,30). Maintaining a focus on responsiveness is particularly critical in high-volume outpatient settings (31,32).

### **Assurance**

Assurance, reflecting staff competence, professionalism, and trustworthiness, was significantly associated with satisfaction (Phi Cramer's V = 0,253,  $p = 0,001$ ), with 89% of respondents reporting satisfaction. Patients' perceptions of confident and skilled health workers increase their sense of safety and trust in services. Assurance is supported as a key predictor in multiple studies. Outpatient satisfaction increases when patients perceive staff as competent and reliable (17,23). Effective assurance reduces patient anxiety and strengthens trust in the healthcare system (19,30). Specialized services also benefit from high assurance levels, which positively influence adherence and outcomes (29,33). Negative assurance gaps reduce patient satisfaction and may affect perceived service quality (15,34).

To enhance assurance, continuous professional development, competency monitoring, and certification programs are recommended (18,20). Assurance works synergistically with reliability and empathy, reinforcing patient confidence (12,25). Patients experiencing competent, trustworthy care report higher satisfaction and willingness to follow medical advice (11,35).

### **Empathy**

Empathy was significantly associated with satisfaction (Phi Cramer's  $V = 0,212$ ,  $p = 0,001$ ), with 89% of respondents expressing satisfaction with staff attentiveness, personalized care, and compassion. Patients value interactions where health workers understand and address individual needs. Empathy has been shown as a strong predictor of outpatient satisfaction in multiple studies (21,22). Patient-centered communication and understanding of personal needs enhance perceived service quality (12,17,19). Empathy contributes to adherence and positive experiences in both general and specialized services (29,30,33). Negative empathy gaps, particularly in responsiveness, have been linked to lower satisfaction (15,31).

Improving empathy involves training in communication skills, cultural sensitivity, and patient engagement (22,27,36). When combined with reliability and assurance, empathetic care ensures that patients feel respected, understood, and valued (25,26). Empathy is especially critical in primary healthcare, where trust and rapport influence both satisfaction and health outcomes (35,37).

### **Tangibles**

The tangibles dimension, covering physical facilities, equipment, and cleanliness, showed a significant bivariate association with outpatient satisfaction (Phi Cramer's  $V = 0,361$ ,  $p = 0,001$ ), with 90% of respondents satisfied. However, it did not significantly predict satisfaction in the multivariate model ( $p = 0,220$ ), suggesting that while the physical environment contributes to satisfaction, interpersonal and process factors are more decisive.

Previous research confirms that tangibles improve first impressions and comfort but are less influential than reliability, responsiveness, assurance, or empathy (38). Physical facilities contribute to perceived professionalism (39) but cannot replace quality staff interactions. Studies in Nepal, Iran, and Indonesia show that tangibles have an indirect effect on satisfaction (40,41). Patient expectations often exceed perceived tangible quality, creating gaps that need improvement (42,43).

From a management perspective, maintaining clean and well-equipped facilities is necessary but not sufficient for high satisfaction (44,45). Tangibles function as supportive elements; prioritizing staff competence, responsiveness, and patient-centered interactions yields a greater impact on satisfaction (46,47). Investments in physical infrastructure should complement, not replace, service quality initiatives (48,49).

Evidence from recent primary healthcare studies reinforces this perspective. A cross-sectional study in Albania demonstrated that although tangibles significantly influence satisfaction, they operate alongside other critical dimensions such as reliability, assurance, and waiting time, all of which showed significant associations with overall service quality (50). These findings indicate that physical conditions alone cannot deliver high satisfaction in the absence of consistent, trustworthy, and timely service experiences.

Similarly, a SERVQUAL-based assessment in Türkiye found that perceived service quality fell short of patient expectations, reflected in a negative SERVQUAL score ( $-0,02$ ), emphasizing the persistent gap between expected and delivered care quality (51). The study further highlighted that demographic factors and personality traits such as age, education level, and extraverted or psychotic tendencies were statistically associated with satisfaction, suggesting that managerial improvements must accommodate patient diversity rather than relying solely on facility upgrades.

In addition, a study in Poland identified determinants of dissatisfaction that were unrelated to physical infrastructure, including rudeness of medical staff and limited access to health information (52). These interpersonal and informational barriers underscore that the human component of care remains central to patient experience. As such, improvements in tangible aspects should be integrated with managerial strategies that strengthen communication, professionalism, and accessibility of information. Collectively, these findings affirm that while tangibles matter, they are secondary to human-driven service quality factors that more profoundly shape patient satisfaction.

Overall, reliability, responsiveness, assurance, and empathy are the primary determinants of outpatient satisfaction, whereas tangibles serve a supportive role. Emphasizing non-physical aspects of service quality through staff training, standardized procedures, and patient-centered care is essential for sustaining high satisfaction in primary healthcare settings. Ensuring balanced attention to all SERVQUAL dimensions can optimize patient experience and improve overall service quality.

### **CONCLUSION**

This study demonstrates that outpatient satisfaction at Puskemas Simo, Boyolali is significantly associated with four dimensions of health service quality, namely reliability, responsiveness, assurance, and empathy. Multivariate logistic regression analysis confirms that positive patient perceptions of these dimensions significantly increase the likelihood of satisfaction ( $p < 0,05$ ). Among the SERVQUAL dimensions, reliability emerged as the most influential determinant, with patients who perceived services as reliable being more than six times more likely to report satisfaction. This finding highlights the critical importance of punctual service delivery, procedural clarity, and consistency in healthcare services.

In contrast, the tangibles dimension did not show a statistically significant effect in the multivariate model ( $p > 0,05$ ). Although physical facilities and infrastructure remain important supporting elements, they do not constitute the primary determinants of patient satisfaction at Puskesmas Simo, Boyolali. This suggests that patients tend to prioritize non-physical aspects of care, such as staff attitudes, service responsiveness, and certainty of service procedures, over the physical condition of health facilities.

Overall, the findings indicate that outpatient satisfaction is driven more by interpersonal interactions and service process quality than by physical infrastructure alone. Therefore, strengthening human resource capacity through continuous training in effective communication, responsive service delivery, and empathic patient care is strongly recommended as a strategic approach to improving service quality and patient satisfaction in primary health care settings. Nevertheless, this study has limitations, particularly the use of non-probability sampling and self-reported measures, which may affect the generalizability of the findings. Future research is encouraged to incorporate probability sampling or longitudinal designs to enhance external validity and causal interpretation.

#### ACKNOWLEDGMENTS

The authors would like to express their sincere appreciation to the management and staff of Puskesmas Simo, Boyolali for their cooperation and support during the data collection process. Special thanks are also extended to all respondents who participated in this study and provided valuable information honestly and accurately. In addition, the authors acknowledge Politeknik Indonusa Surakarta for its institutional support and constructive academic input during the preparation of this manuscript. It is hoped that the findings of this study will contribute to efforts to improve the quality of health services, particularly at the primary health care level.

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