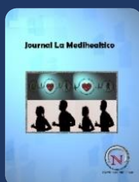

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Integrated Primary Care Implementation and Patient Satisfaction

Melki Saudila[1], Asriwati[1], Ismail Efendy[1]

[1]*Public Health, Institut Kesehatan Helvetia, Indonesia*

**Corresponding Author: Melki Saudila*
Email: oissdl@gmail.com

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Abstract

Integrated Primary Health Care (IPHC) aims to improve the quality, continuity, and responsiveness of primary health services. However, its implementation in Kupang City still faces challenges, as reflected in the 2023 Minimum Service Standards achievement of 82.17%, which was lower than the East Nusa Tenggara provincial average of 95.37%. This study aimed to analyze the association between IPHC-based service quality and patient satisfaction at Sikumana Public Health Center and to identify the service quality dimension with the strongest practical tendency. This study employed a quantitative explanatory design with a cross-sectional approach. A total of 100 respondents were selected using proportional stratified random sampling from six service areas. Service quality was measured using five SERVQUAL/RATER dimensions: reliability, assurance, tangibles, empathy, and responsiveness, while patient satisfaction was dichotomized for binary logistic regression analysis. Data were analyzed using univariate analysis, Chi-Square tests, and binary logistic regression. The bivariate analysis showed that only reliability was significantly associated with patient satisfaction. However, in the multivariate analysis, none of the five service quality dimensions showed a statistically significant partial effect after simultaneous analysis. The regression model was statistically significant, showed good model fit, and explained 31.7% of the variation in patient satisfaction. Tangibles had the highest odds ratio, indicating the strongest practical tendency in shaping patient satisfaction. These findings suggest that patient satisfaction in IPHC implementation is multidimensional, with physical facilities, equipment adequacy, cleanliness, and service readiness requiring practical attention.

Introduction

Integrated Primary Health Care (IPHC) represents a strategic reform in Indonesia's health system transformation, aimed at strengthening the role of primary health services as the foundation of equitable and sustainable healthcare delivery (Payne et al., 2026; Soetono & Kurtanty, 2026; Rattu, 2026; Nurmidin, 2025). Primary care has long been recognized as a fundamental pillar of effective health systems, contributing significantly to improved equity, efficiency, and population health outcomes (Starfield, Shi, & Macinko, 2005). This reform aligns with the global Primary Health Care framework promoted by the World Health Organization, which emphasizes comprehensive, coordinated, and people-centered care as the cornerstone of universal health coverage (World Health Organization, 2019; World Health Organization, 2020). The IPHC policy seeks to shift service delivery from fragmented and program-based approaches toward integrated, life-cycle–oriented services that respond holistically to community health needs. In theory, such integration is expected to enhance

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service efficiency, improve health outcomes, and increase patient satisfaction by reducing service duplication and fragmentation (Kruk et al., 2018; World Health Organization, 2018).

In Indonesia, IPHC has been formally institutionalized through Minister of Health Decree Number HK.01.07/MENKES/2015/2023, which introduces structural and operational adjustments at the primary healthcare level, particularly in community health centers (Puskesmas) (Kementerian Kesehatan Republik Indonesia, 2023). These adjustments include service clustering, strengthened referral systems, integration of promotive, preventive, curative, and rehabilitative services, and improved coordination across health programs. However, evidence from health system reform studies suggests that structural transformation alone does not automatically guarantee improvements in perceived service quality at the patient level (Alhassan et al., 2015; World Health Organization, 2018).

Despite the progressive intent of the IPHC policy, disparities in service performance remain evident across regions (Deshmukh & Mistry, 2025; Giguère et al., 2025; Robredo et al., 2026). Data on the achievement of Minimum Service Standards in 2023 indicate that while East Nusa Tenggara Province achieved an average performance rate of 95.37%, Kupang City recorded only 82.17% (Dinas Kesehatan Kota Kupang, 2024; Dinas Kesehatan Provinsi NTT, 2024), reflecting gaps in service coverage and quality. These discrepancies suggest that the effectiveness of IPHC implementation depends not only on regulatory compliance but also on how service quality is perceived and experienced by patients within primary healthcare facilities (Albaqami & Alshagrawi, 2025; Alfatafta et al., 2025; Hossain et al., 2025).

Service quality constitutes a central determinant of patient satisfaction and health system legitimacy. Within the service management literature, the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry conceptualizes service quality as a multidimensional construct encompassing reliability, assurance, tangibles, empathy, and responsiveness (Parasuraman, Zeithaml, & Berry, 1988). In healthcare settings, quality is also understood through structural, process, and outcome dimensions, as proposed by Donabedian (1988). These theoretical frameworks highlight that both technical competence and experiential aspects of care influence patient perceptions and satisfaction.

Patient satisfaction is widely recognized as an outcome indicator of service performance and system responsiveness. A systematic review by Batbaatar et al. (2017) confirmed that patient satisfaction is influenced by both perceived service quality and technical performance. Satisfied patients are more likely to adhere to treatment recommendations, utilize preventive services, and maintain long-term engagement with healthcare providers (Batbaatar et al., 2017). Conversely, dissatisfaction may reduce trust and discourage healthcare utilization. Empirical findings indicate that tangibles and reliability frequently emerge as dominant predictors of satisfaction, particularly in developing healthcare systems (Isthiyaq et al., 2023; Novitasari et al., 2023). Similar findings have been reported in Indonesian primary healthcare settings, where service quality significantly influences patient satisfaction (Fristiohady et al., 2020; Minarti et al., 2024).

Within the Indonesian context, research on service quality and patient satisfaction in Puskesmas has generally focused on conventional service delivery models (Rahayu & Nasrawati, 2024; Wardani et al., 2025). Meanwhile, studies on IPHC implementation have primarily examined organizational readiness and program integration rather than patient-perceived outcomes (Rosita et al., 2025; Mait et al., 2025). Given that IPHC represents a structural and operational transformation, it is plausible that patient perceptions of service quality may shift in response to changes in service integration, facility readiness, and coordination mechanisms.

Regional characteristics may further influence this relationship. Provinces such as East Nusa Tenggara, characterized by geographical dispersion, infrastructure constraints, and uneven

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workforce distribution, face structural challenges that may affect service delivery quality (Starfield et al., 2005; Herawati et al., 2022). At the Puskesmas level, factors such as workforce adequacy, facility conditions, service flow organization, and administrative efficiency may determine whether integration efforts translate into perceived quality improvements (Rosita et al., 2025).

From a theoretical standpoint, integrating the SERVQUAL framework with IPHC implementation provides an analytical pathway to assess whether structural integration corresponds with perceived service improvement. While IPHC emphasizes systemic coordination and policy-level reform, SERVQUAL captures patient-level perceptions, thereby bridging policy design and service experience. This intersection enables a more comprehensive evaluation of primary healthcare transformation.

This study is designed as a problem-solving inquiry aimed at evaluating IPHC implementation through empirical assessment of service quality dimensions and their influence on patient satisfaction. Using a quantitative cross-sectional approach and binary logistic regression analysis, this study investigates whether each SERVQUAL dimension significantly predicts patient satisfaction in the context of IPHC implementation at Sikumana Public Health Center in Kupang City. Furthermore, this study seeks to identify the dimension that demonstrates the most dominant practical tendency in shaping patient satisfaction (Wu et al., 2025; Larivière et al., 2025; Winata & Rolando, 2025).

The development of hypotheses in this study is grounded in established service quality theory and empirical evidence. It is theoretically expected that improvements in reliability, assurance, tangibles, empathy, and responsiveness will positively influence patient satisfaction (Parasuraman et al., 1988; Batbaatar et al., 2017). Additionally, based on contextual considerations of infrastructure visibility and structural readiness within primary healthcare reform, it is hypothesized that one dimension, particularly tangibles or reliability, may exert a more dominant influence compared to the others in shaping patient satisfaction within the IPHC framework (Narayan et al., 2025; Sharma, 2025; Van et al., 2026).

By examining these relationships, this study contributes to the growing body of literature on primary healthcare transformation and service quality evaluation. The findings are expected to provide evidence-based insights for policymakers and health administrators in optimizing IPHC implementation, particularly in eastern Indonesian regions where structural and contextual challenges persist. Ultimately, aligning systemic integration efforts with patient-perceived quality improvements remains essential to achieving sustainable and people-centered primary healthcare reform (World Health Organization, 2020; Kruk et al., 2018).

Methods

This study employed a quantitative explanatory design with a cross-sectional approach to analyze the relationship between service quality dimensions and patient satisfaction in the implementation of Integrated Primary Health Care (IPHC) at Sikumana Public Health Center, Kupang City, Indonesia. Data were collected from October to November 2025.

The study population consisted of 13,188 patients who received IPHC-based services at Sikumana Public Health Center within a six-month period. The sample size was determined using the Slovin formula with a 10% margin of error, resulting in 100 respondents. A proportional stratified random sampling technique was applied to ensure representation from six administrative service areas, namely Sikumana, Belo, Oepura, Naikolan, Kolhua, and Fatukoa. The number of respondents in each stratum was allocated proportionally based on the number of service users in each area. Respondents within each stratum were then selected randomly. The inclusion criteria were patients aged 17 years and above, patients who had received IPHC-based services, and patients who agreed to participate in the study.

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The independent variables were service quality dimensions based on the SERVQUAL/RATER framework, consisting of reliability, assurance, tangibles, empathy, and responsiveness. Each dimension was measured using five questionnaire items with a three-point Likert scale: 1 = poor, 2 = fair, and 3 = good. The total score for each service quality dimension ranged from 5 to 15 and was categorized into three groups: poor (5–9), fair (10–12), and good (13–15).

The dependent variable was patient satisfaction, which was measured using ten questionnaire items with the same three-point Likert scale. The total satisfaction score ranged from 10 to 30 and was categorized into three groups: poor (10–15), fair (16–22), and good (23–30). For binary logistic regression analysis, patient satisfaction was dichotomized into two categories: not satisfied and satisfied. The not satisfied category included respondents with poor and fair satisfaction scores, while the satisfied category included respondents with good satisfaction scores.

Data analysis was conducted in three stages. First, univariate analysis was used to describe respondent characteristics and the distribution of each service quality dimension. The results were presented in frequencies and percentages. Second, bivariate analysis was conducted using the Chi-Square test to examine the relationship between each service quality dimension and patient satisfaction. A significance level of 0.05 was used. Third, multivariate analysis was performed using binary logistic regression to examine the simultaneous effect of reliability, assurance, tangibles, empathy, and responsiveness on patient satisfaction. Model fit was assessed using the Omnibus Test of Model Coefficients, the Hosmer–Lemeshow goodness-of-fit test, and Nagelkerke R Square. The strength of association was presented using odds ratios (OR) with 95% confidence intervals.

Participation in this study was voluntary. Respondents were informed about the purpose of the study before data collection, and confidentiality of all respondent information was maintained throughout the research process.

Result and Discussion

A total of 100 respondents participated in this study. The respondents were patients who received services at Sikumana Public Health Center. Based on age, most respondents were in the 36–45-year age group, accounting for 45 respondents (45.0%), followed by the 26–35-year age group with 27 respondents (27.0%), the 17–25-year age group with 18 respondents (18.0%), and those aged above 45 years with 10 respondents (10.0%). Based on sex, most respondents were female, with 66 respondents (66.0%), while male respondents accounted for 34 respondents (34.0%). In terms of educational background, most respondents had completed junior high school, with 49 respondents (49.0%), followed by senior high school with 37 respondents (37.0%), and higher education with 14 respondents (14.0%). Based on occupation, most respondents worked as farmers, with 48 respondents (48.0%), followed by entrepreneurs with 31 respondents (31.0%), and civil servants with 21 respondents (21.0%).

Table 1. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage
Age	17–25 years	18	18.0
	26–35 years	27	27.0
	36–45 years	45	45.0
	>45 years	10	10.0
Sex	Male	34	34.0
	Female	66	66.0
Education	Junior high school	49	49.0
	Senior high school	37	37.0
	Higher education	14	14.0

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Occupation	Farmer	48	48.0
	Entrepreneur	31	31.0
	Civil servant	21	21.0

Descriptive analysis was conducted to describe respondents' perceptions of service quality based on the five SERVQUAL dimensions: reliability, assurance, tangibles, empathy, and responsiveness. The results showed that the reliability dimension was mostly rated as fair by 53 respondents (53.0%), followed by good by 43 respondents (43.0%), and poor by 4 respondents (4.0%). The assurance dimension was mostly rated as good by 55 respondents (55.0%), followed by fair by 43 respondents (43.0%), and poor by 2 respondents (2.0%). The tangibles dimension was rated as good by 51 respondents (51.0%), fair by 46 respondents (46.0%), and poor by 3 respondents (3.0%). Meanwhile, empathy was mostly rated as fair by 58 respondents (58.0%), followed by good by 41 respondents (41.0%), and poor by 1 respondent (1.0%). For responsiveness, most respondents rated it as good, with 55 respondents (55.0%), followed by fair with 42 respondents (42.0%), and poor with 3 respondents (3.0%).

Table 2. Distribution of Service Quality Dimensions

Service Quality Dimension	**Category**	**Frequency**	**Percentage**
Reliability	Poor	4	4.0
	Fair	53	53.0
	Good	43	43.0
Assurance	Poor	2	2.0
	Fair	43	43.0
	Good	55	55.0
Tangibles	Poor	3	3.0
	Fair	46	46.0
	Good	51	51.0
Empathy	Poor	1	1.0
	Fair	58	58.0
	Good	41	41.0
Responsiveness	Poor	3	3.0
	Fair	42	42.0
	Good	55	55.0

Patient satisfaction was categorized into two groups for logistic regression analysis, namely not satisfied and satisfied. The results showed that 93 respondents (93.0%) were categorized as satisfied, while 7 respondents (7.0%) were categorized as not satisfied. This finding indicates that most respondents perceived the services provided at Sikumana Public Health Center positively.

Bivariate analysis was conducted using the Chi-Square test to examine the relationship between each service quality dimension and patient satisfaction. The results showed that only reliability had a statistically significant relationship with patient satisfaction, with a p-value of 0.034. Meanwhile, assurance (p = 0.284), tangibles (p = 0.091), empathy (p = 0.235), and responsiveness (p = 0.658) did not show statistically significant relationships with patient satisfaction.

Table 3. Bivariate Analysis of Service Quality Dimensions and Patient Satisfaction

Service Quality Dimension	**p-value**	**Interpretation**
Reliability	0.034	Significant
Assurance	0.284	Not significant
Tangibles	0.091	Not significant
Empathy	0.235	Not significant

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Responsiveness	0.658	Not significant

Multivariate analysis was conducted using binary logistic regression to examine the simultaneous effect of reliability, assurance, tangibles, empathy, and responsiveness on patient satisfaction. The Omnibus Test of Model Coefficients showed a p-value of 0.019, indicating that the regression model was statistically significant. The Hosmer–Lemeshow test showed a p-value of 0.636, indicating that the model had a good fit with the observed data. The Nagelkerke R Square value was 0.317, meaning that 31.7% of the variation in patient satisfaction could be explained by the five service quality dimensions, while the remaining variation was explained by other factors outside the model.

Table 4. Model Fit of Binary Logistic Regression

Model Fit Indicator	Value	Interpretation
Omnibus Test of Model Coefficients	p = 0.019	The model was statistically significant
Hosmer–Lemeshow Test	p = 0.636	The model fit the data
Nagelkerke R Square	0.317	The model explained 31.7% of the variance in patient satisfaction

The results of the binary logistic regression showed that none of the five service quality dimensions had a statistically significant partial effect on patient satisfaction after being analyzed simultaneously. Reliability had a very large coefficient value but was not statistically significant (B = 18.52; p = 0.997), indicating an unstable estimate. Assurance showed a positive but non-significant association with patient satisfaction (B = 0.82; p = 0.388; OR = 2.27; 95% CI = 0.35–14.65). Tangibles also showed a positive but non-significant association (B = 1.31; p = 0.266; OR = 3.72; 95% CI = 0.37–37.57). Empathy showed a negative but non-significant association (B = -1.39; p = 0.133; OR = 0.25; 95% CI = 0.04–1.60). Responsiveness showed a positive but non-significant association (B = 0.78; p = 0.368; OR = 2.20; 95% CI = 0.39–12.39).

Table 5. Binary Logistic Regression Analysis of Service Quality Dimensions and Patient Satisfaction

Variable	B	p-value	Odds Ratio / Exp(B)	95% CI
Reliability	18.52	0.997	-	-
Assurance	0.82	0.388	2.27	0.35–14.65
Tangibles	1.31	0.266	3.72	0.37–37.57
Empathy	-1.39	0.133	0.25	0.04–1.60
Responsiveness	0.78	0.368	2.20	0.39–12.39

Although none of the dimensions showed a statistically significant partial effect in the multivariate model, the tangibles dimension had the highest odds ratio. This indicates that respondents who perceived the physical aspects of service delivery positively tended to have a higher likelihood of being satisfied compared with those in the reference category. Therefore, tangibles can be interpreted as the dimension with the strongest practical tendency in shaping patient satisfaction in the implementation of Integrated Primary Health Care at Sikumana Public Health Center.

The findings revealed that none of the five service quality dimensions: reliability, assurance, tangibles, empathy, and responsiveness, showed statistically significant partial effects on patient satisfaction after controlling for other variables ($p > 0.05$). However, differences in the magnitude of the Odds Ratios indicate varying practical tendencies among the dimensions. This result supports the theoretical understanding that patient satisfaction is a multidimensional

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construct influenced by the interaction of several quality components rather than a single dominant factor (Parasuraman, Zeithaml, & Berry, 1988; Batbaatar et al., 2017).

Among the five dimensions, tangibles demonstrated the highest Odds Ratio (OR = 3.72), suggesting that patients who perceived the physical aspects of service delivery as good were approximately 3.7 times more likely to report satisfaction compared to those in the reference category. Although this association did not reach statistical significance, the magnitude of the Odds Ratio indicates a strong practical tendency. The prominence of tangibles aligns with the SERVQUAL framework, which identifies physical facilities and equipment as visible indicators of service quality (Parasuraman et al., 1988). In healthcare settings, structural quality elements often shape patient perceptions of institutional credibility and readiness (Donabedian, 1988).

This finding is consistent with previous studies in primary healthcare contexts that identified tangibles as a dominant predictor of patient satisfaction, particularly in developing regions (Novitasari et al., 2023; Isthiyaq et al., 2023; Fristiohady et al., 2020). In resource-constrained areas such as East Nusa Tenggara, improvements in infrastructure and service environment may generate stronger perceptual impacts compared to interpersonal dimensions, as patients often associate physical readiness with overall service reliability (Starfield, Shi, & Macinko, 2005).

The reliability dimension, which reflects consistency and accuracy of service delivery, showed a positive but non-significant association with patient satisfaction in the multivariate model. While reliability demonstrated significance in bivariate analysis, its effect diminished after simultaneous testing with other dimensions. This suggests that reliability may function as a baseline expectation rather than a distinguishing factor when minimum service standards are perceived as generally adequate (Batbaatar et al., 2017; Alhassan et al., 2015). When basic procedural consistency is assumed, variations in reliability may not strongly differentiate satisfaction levels.

Similarly, assurance did not demonstrate a statistically significant influence on patient satisfaction. Professional competence and trustworthiness of health personnel may be perceived as normative expectations in public healthcare settings. Studies in publicly funded health systems indicate that assurance often operates as a foundational requirement rather than a competitive advantage (Alhassan et al., 2015; Batbaatar et al., 2017). Patients may assume that healthcare providers possess adequate technical competence unless evidence suggests otherwise.

The empathy and responsiveness dimensions also did not show significant effects in the regression model. These findings suggest that interpersonal aspects of service delivery were not primary determinants of satisfaction in this context. One possible explanation is that patients in public health centers may prioritize structural and procedural aspects of service over relational dimensions, especially in high-demand environments with limited workforce capacity. According to Donabedian (1988), structural readiness and process efficiency can heavily influence outcome perceptions, particularly when service systems operate under resource constraints. This interpretation is consistent with broader primary care literature emphasizing the importance of system organization and accessibility in shaping patient experiences (Starfield et al., 2005; Kruk et al., 2018).

Although no single dimension demonstrated statistical dominance, the moderate explanatory power of the model (31.7%) indicates that patient satisfaction within IPHC implementation is influenced by multiple interacting determinants. Previous research suggests that additional factors such as waiting time, accessibility, communication clarity, and organizational culture may significantly affect patient satisfaction beyond core SERVQUAL dimensions (Batbaatar et al., 2017; Kruk et al., 2018). Therefore, service quality improvement within IPHC should be

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viewed as part of a broader system-strengthening effort rather than a dimension-specific intervention.

From a policy perspective, these findings imply that improving IPHC implementation requires a comprehensive and context-sensitive approach. While systemic integration is a central objective of IPHC (World Health Organization, 2020; Kementerian Kesehatan Republik Indonesia, 2023), patient satisfaction ultimately depends on how such integration is translated into tangible improvements at the facility level. Given the relatively stronger practical tendency of the tangibles dimension, prioritizing facility infrastructure, environmental cleanliness, equipment adequacy, and service flow organization may yield more visible improvements in patient satisfaction. Strengthening these structural components can reinforce public trust and enhance perceived quality of integrated primary healthcare services.

Overall, the results demonstrate that while IPHC implementation at Sikumana Public Health Center has established foundational service standards, further enhancement, particularly in physical infrastructure and integrated service delivery systems is necessary to optimize patient satisfaction outcomes. These findings provide empirical evidence to support strategic improvements in primary healthcare reform, especially in regions facing structural and resource limitations. Aligning structural integration efforts with patient-perceived quality improvements remains essential for achieving sustainable and people-centered primary healthcare transformation (World Health Organization, 2018; Kruk et al., 2018).

Conclusion

This study concludes that IPHC-based service quality at Sikumana Public Health Center is associated with patient satisfaction as a multidimensional construct. In the bivariate analysis, reliability showed a significant relationship with patient satisfaction. However, in the multivariate logistic regression analysis, none of the five SERVQUAL/RATER dimensions reliability, assurance, tangibles, empathy, and responsiveness showed a statistically significant partial effect after being analyzed simultaneously. The overall regression model was statistically significant and demonstrated good model fit, with the five service quality dimensions explaining 31.7% of the variation in patient satisfaction. Among the dimensions, tangibles showed the highest odds ratio, indicating the strongest practical tendency in shaping patient satisfaction. These findings suggest that improving patient satisfaction in the context of Integrated Primary Health Care should not rely on a single service quality dimension, but should be addressed through comprehensive service improvement. Particular attention should be given to strengthening physical facilities, equipment adequacy, environmental cleanliness, and service readiness, as these aspects are more visible to patients and may contribute to better perceived quality of primary health care services.

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