

Patient Value as A Mediating Mechanism Between Empathy, Reliability, and Patient Loyalty in Primary Healthcare

Liska Zahara Putri¹, Taufik Zulfikar², Ayu Laili Rahmiyati³, Farida Yuliaty⁴, Vip Paramarta⁵

¹ Postgraduate Program, Universitas Sangga Buana YPKP, Bandung, Indonesia

Corresponding author: **Liska Zahara Putri**

ABSTRACT: This study examines whether patient value mediates the effects of empathy and reliability on patient loyalty in primary healthcare. A cross-sectional quantitative survey was conducted among 120 outpatients of Kedaung Wetan Community Health Center, Tangerang City, Indonesia, selected purposively from a population of 1,150 patients recorded in March 2026. Data were collected using a five-point Likert questionnaire and analyzed using partial least squares structural equation modeling in SmartPLS 4. Empathy had positive effects on patient value ($\beta = 0.295$, $p = 0.003$) and patient loyalty ($\beta = 0.351$, $p < 0.001$). Reliability positively affected patient value ($\beta = 0.396$, $p < 0.001$) and patient loyalty ($\beta = 0.420$, $p < 0.001$), while patient value positively affected loyalty ($\beta = 0.341$, $p < 0.001$). Patient value significantly mediated the empathy–loyalty relationship ($\beta = 0.101$, $p = 0.031$) and the reliability–loyalty relationship ($\beta = 0.135$, $p = 0.010$). Because the corresponding direct effects remained significant, both mediation paths were partial. The model explained 33.5% of patient value and 49.1% of patient loyalty. The findings indicate that loyalty in public primary healthcare is strengthened when empathetic and dependable service creates benefits that patients perceive as worthwhile relative to the time, effort, and other sacrifices required to obtain care.

KEYWORDS - *empathy, reliability, patient value, patient loyalty, PLS-SEM*

I. Introduction

Primary healthcare is the first and most continuous point of contact between communities and health systems. The quality of this contact depends not only on clinical effectiveness but also on whether care is accessible, responsive, dependable, and centered on patients. Person-centered primary care emphasizes understandable and empathic communication, active listening, accessibility, and care tailored to patient needs [1]. In Indonesia, Puskesmas function as first-level public healthcare facilities; therefore, everyday service experiences can influence trust, continuity of care, and patients' willingness to return.

Service quality in healthcare is multidimensional. The SERVQUAL framework identifies empathy and reliability as two core dimensions of perceived service quality [2]. Empathy concerns individualized attention, caring communication, and understanding patients' needs, whereas reliability refers to performing promised services dependably and accurately. Empathy is particularly relevant to healthcare because patients often experience physical and emotional vulnerability and value interactions that convey understanding and respect [3]. Reliability, meanwhile, reduces uncertainty by creating predictable procedures, accurate information, and dependable service delivery.

High service quality does not automatically become loyalty. Patients interpret their experiences through a value assessment. Zeithaml defines perceived value as an overall evaluation of utility based on what is received relative to what is given [4], while Woodruff emphasizes customers' evaluation of attributes, consequences, and desired goals [5]. In healthcare, patient value may therefore combine functional benefits, emotional reassurance, convenience, and perceived appropriateness with sacrifices such as waiting time, effort, uncertainty, and other burdens.

Patient loyalty reflects a favorable long-term orientation toward a healthcare provider, expressed through revisit intention, recommendation, and continued preference. Oliver describes loyalty as a deeply held commitment to repatronize a preferred service despite situational influences [6]. Prior studies have connected service quality and perceived value with behavioral intentions and loyalty [7], [8], [9]. Indonesian evidence also indicates that service quality remains important for patient satisfaction and loyalty [10].

This study addresses three gaps. First, many healthcare studies aggregate service quality into a broad construct, potentially concealing the distinct roles of empathy and reliability. Second, patient value is frequently treated only as a direct predictor even though it may explain how service experiences are translated into loyalty. Third, evidence from Indonesian public primary healthcare remains less developed than evidence from hospital and private-service contexts. The study therefore examines empathy and reliability as separate antecedents of patient value and patient loyalty and tests patient value as a mediator in Kedaung Wetan Community Health Center, Tangerang City.

II. Literature Review and Hypothesis Development

2.1 Empathy and Patient Value

Empathy adds emotional and relational benefits to healthcare encounters. When healthcare personnel listen attentively, communicate respectfully, recognize individual needs, and show concern, patients receive benefits beyond the technical act of treatment. Such benefits can increase perceived value because value incorporates both functional and affective evaluations [4], [11]. Empathic care is also consistent with person-centered primary care, in which communication and responsiveness to patient needs are central [1].

H1. Empathy has a positive effect on patient value.

2.2 Reliability and Patient Value

Reliability is the ability to deliver promised service dependably and accurately [2]. In primary healthcare, timely service, consistent procedures, dependable information, and professional execution reduce uncertainty and unnecessary patient sacrifice. Because value reflects a benefit-sacrifice trade-off, dependable service can increase perceived benefits while reducing time, effort, and psychological costs [4], [7].

H2. Reliability has a positive effect on patient value.

2.3 Empathy, Reliability, and Patient Loyalty

Empathy can create relational attachment by making patients feel respected and understood. Relationship marketing suggests that high-quality relational exchanges strengthen commitment and durable service relationships [12], [13]. Reliability provides a rational basis for loyalty because consistent and dependable performance reduces perceived risk and reinforces confidence in the provider. Healthcare evidence has linked service quality dimensions with behavioral intention and loyalty [9], [14].

H3. Empathy has a positive effect on patient loyalty.

H4. Reliability has a positive effect on patient loyalty.

2.4 Patient Value and Patient Loyalty

Patients are more likely to maintain relationships that they judge beneficial relative to their sacrifices. The quality-value-behavioral intention framework positions perceived value as an important determinant of future behavior [7]. In healthcare, higher consumer perceived value has also been associated with loyalty [8]. Accordingly, patients who perceive the service as useful, appropriate, convenient, and worth the required time and effort should be more willing to revisit and recommend the health center.

H5. Patient value has a positive effect on patient loyalty.

2.5 Mediating Role of Patient Value

The mediation mechanism follows a value-based evaluation sequence. Empathy and reliability represent service experiences, patient value captures the patient's evaluation of benefits relative to sacrifices, and loyalty represents the subsequent relational intention. Empathy may strengthen loyalty partly because caring interactions increase emotional and functional value, while reliability may strengthen loyalty partly because dependable service increases benefits and lowers uncertainty. This logic is consistent with established quality-value-behavioral intention models [4], [7].

H6. Patient value mediates the positive effect of empathy on patient loyalty.

H7. Patient value mediates the positive effect of reliability on patient loyalty.

III. Methods

3.1 Research Design and Context

The study used a quantitative, explanatory, cross-sectional survey design and was conducted at UPT Puskesmas Kedaung Wetan (Kedaung Wetan Community Health Center), Tangerang City, Banten, Indonesia. The facility provides first-level public healthcare services. The unit of analysis was the individual outpatient.

3.2 Population, Sampling, and Data Collection

The population comprised 1,150 outpatients based on March 2026 service data. Purposive sampling was used because respondents had to meet substantive eligibility criteria, including prior experience using the service. A total of 120 usable questionnaires were analyzed. The instrument used a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Participation was voluntary, the questionnaire was used for academic research, and responses were treated confidentially and anonymously. No formal ethical approval number or research-permit number was available in the thesis documentation.

3.3 Measurement of Constructs

The initial questionnaire contained 24 indicators: six for empathy, six for reliability, six for patient value, and six for patient loyalty. Empathy reflected attention, friendliness, caring behavior, willingness to help, understanding complaints, and understandable explanations, consistent with service-quality and healthcare-empathy concepts [2], [3]. Reliability captured timeliness, waiting-time consistency, procedural consistency, conformity with procedures, professional delivery, and dependability [2]. Patient value represented benefits, need fulfillment, time-and-effort trade-offs, service-process burden, overall value, and congruence with expectations [4], [5]. Patient loyalty represented revisit intention, first-choice intention, recommendation, advocacy, resistance to switching, and confidence in the provider [6].

3.4 Data Analysis

Partial least squares structural equation modeling was performed using SmartPLS 4. PLS-SEM permits simultaneous evaluation of measurement and structural relationships and is suitable for mediation testing [15]. The measurement model was assessed through indicator loadings, internal consistency reliability, and discriminant validity. The structural model was evaluated using path coefficients, bootstrapped t statistics and p values, coefficients of determination (R^2), and effect sizes (f^2). Statistical significance was assessed at $t > 1.96$ and $p < 0.05$ [15].

IV. Results

4.1 Respondent Characteristics

Table 1. Respondent characteristics

Characteristic	Category	n	%
Gender	Male	45	37.50
	Female	75	62.50
Age	< 20 years	7	5.83
	20-30 years	37	30.83
	31-40 years	55	45.83
	> 40 years	21	17.50
Education	Primary school	52	43.33
	Junior secondary	38	31.67
	Senior secondary	25	20.83
	Diploma	4	3.33
	Bachelor's degree	1	0.83
Visits	2-3 times	67	55.83
	4-5 times	24	20.00
	> 5 times	29	24.17

The sample was predominantly female (62.5%) and was concentrated in the 31-40-year age group (45.83%). Most respondents had primary- or junior-secondary education, while all respondents had visited the health center

at least twice. The respondents therefore had prior service experience on which to base their evaluations of empathy, reliability, value, and loyalty.

4.2 Measurement Model

Table 2. Measurement model assessment

Construct	Retained items	Loading range	CR (rho_C)	Alpha
Empathy	4	0.660-0.793	0.825	0.717
Reliability	3	0.717-0.809	0.794	0.615
Patient value	4	0.656-0.775	0.825	0.719
Patient loyalty	4	0.665-0.812	0.823	0.711

After iterative indicator evaluation, the final measurement model retained four empathy indicators, three reliability indicators, four patient-value indicators, and four patient-loyalty indicators. Composite reliability ranged from 0.794 to 0.825. Although the reliability construct had Cronbach's alpha below 0.70, its composite reliability exceeded the recommended threshold, supporting construct-level internal consistency in the PLS-SEM context [15]. Discriminant validity was acceptable because all HTMT values were below 0.90; the highest value was 0.833 between reliability and patient loyalty.

4.3 Structural Model and Hypothesis Testing

Table 3. Structural relationships and hypothesis decisions

Path	β	t	p	f ²	Decision
H1: Empathy → Patient value	0.295	3.023	0.003	0.111	Supported
H2: Reliability → Patient value	0.396	4.134	<0.001	0.200	Supported
H3: Empathy → Patient loyalty	0.351	3.614	<0.001	0.094	Supported
H4: Reliability → Patient loyalty	0.420	5.345	<0.001	0.113	Supported
H5: Patient value → Patient loyalty	0.341	3.622	<0.001	0.152	Supported
H6: Empathy → Patient value → Patient loyalty	0.101	2.161	0.031	-	Supported
H7: Reliability → Patient value → Patient loyalty	0.135	2.562	0.010	-	Supported

All direct relationships were positive and significant. Reliability had the strongest direct effect on patient loyalty ($\beta = 0.420$) and also exerted a stronger effect on patient value ($\beta = 0.396$) than empathy did ($\beta = 0.295$). Patient value significantly predicted patient loyalty ($\beta = 0.341$). Both indirect effects were also significant. Because the direct empathy-loyalty and reliability-loyalty paths remained significant after patient value was introduced, patient value provided complementary partial mediation.

Table 4. Explanatory power and key model diagnostics

Indicator	Value	Interpretation
R ² Patient value	0.335	Moderate explained variance
Adjusted R ² Patient value	0.321	Moderate explained variance
R ² Patient loyalty	0.491	Moderate explained variance
Adjusted R ² Patient loyalty	0.475	Moderate explained variance
Highest HTMT	0.833	Below 0.90 threshold

The model explained 33.5% of the variance in patient value and 49.1% of the variance in patient loyalty. Descriptively, empathy had a mean of 4.34 (very high), reliability 3.71 (high), patient value 4.13 (high), and patient loyalty 4.31 (very high). Reliability therefore appears both statistically influential and practically improvable within the service setting.

V. Discussion

The first finding shows that empathy increases patient value. Caring attention, respectful interaction, and understandable communication provide emotional benefits that patients incorporate into their overall assessment of the service. This is consistent with the view that perceived value includes more than functional utility and can include affective benefits [4], [11]. In primary healthcare, empathy can also reduce psychological distance between patients and providers and make the service experience more responsive to individual needs [1], [3].

The second finding indicates that reliability increases patient value and produces the largest effect size among the antecedents of value. Dependable procedures, timely service, accurate information, and consistent performance reduce uncertainty and nonmonetary sacrifice. In value terms, reliability simultaneously increases the perceived benefit of care and lowers the effort required to obtain it [4]. This result supports the central role of reliable service performance in the SERVQUAL tradition [2].

Empathy and reliability also directly increase patient loyalty. Empathy encourages relational attachment by signaling respect and concern, while reliability provides a rational basis for continued use because patients can expect consistent and dependable care. These mechanisms align with relationship marketing, which emphasizes trust and commitment as foundations of enduring service relationships [12], [13], and with healthcare evidence linking service quality to behavioral intention [9], [14].

Patient value had a significant positive effect on loyalty, supporting the proposition that patients synthesize individual service attributes into a broader judgment about whether the experience is worthwhile. This finding is consistent with the quality-value-behavioral intention sequence [7] and with evidence that perceived value is related to loyalty in healthcare [8]. For public primary healthcare, this is especially important because patients' sacrifices include not only direct monetary expenditure but also waiting, travel, administrative effort, uncertainty, and emotional discomfort.

The mediation results provide the principal contribution of the study. Empathy and reliability influence loyalty partly through the value patients derive from the service. The mediation is partial rather than full, indicating two simultaneous pathways. The first is a direct pathway in which interpersonal and operational service quality encourages continued use. The second is an evaluative pathway in which those service experiences increase perceived value, which subsequently strengthens loyalty. The larger indirect coefficient for reliability ($\beta = 0.135$) than for empathy ($\beta = 0.101$) suggests that value formation in this setting is particularly sensitive to operational dependability.

The descriptive results add practical nuance. Empathy and loyalty were evaluated very highly, while reliability was rated lower. Within the thesis data, several reliability indicators concerning timeliness and consistency were only moderate. Patient value also contained a comparatively weaker time-and-effort trade-off indicator. These patterns are consistent with the structural findings: improving reliability can simultaneously strengthen patients' value assessments and their loyalty.

VI. Theoretical Implications

The study extends service-quality and perceived-value reasoning to Indonesian public primary healthcare by separating empathy and reliability rather than treating service quality only as an aggregate construct. The results demonstrate that relational and operational quality dimensions have distinct but complementary roles in forming value and loyalty. Reliability is the stronger predictor of patient value and the strongest direct predictor of loyalty, while empathy remains significant through both direct and value-mediated pathways.

The study also strengthens the conceptual role of patient value as a mechanism rather than merely an additional predictor. The findings connect SERVQUAL-based service experiences [2], value evaluation [4], [5], and loyalty formation [6] in one model. Patient value therefore helps explain how patients convert specific experiences during service delivery into longer-term behavioral intentions.

VII. Practical Implications

Kedaung Wetan Community Health Center should preserve empathy as a service culture while prioritizing operational reliability. Staff development should reinforce active listening, respectful communication, individualized attention, and explanations that patients can easily understand. These practices support the relational benefits that already receive strong patient evaluations.

Reliability improvement should focus on measurable service-process standards. Clear queue information, realistic communication of waiting times, consistent procedures, accurate handoffs, and monitoring of delays can reduce uncertainty and patient effort. Because reliability has the strongest direct association with loyalty and the largest effect on patient value among the two service-quality dimensions, improvements in this area are likely to generate benefits through both direct and indirect pathways.

Managers should also monitor patient value explicitly rather than relying only on satisfaction. Short patient-experience measures can assess whether care was worth the time and effort, whether the process was burdensome, and whether service met individual needs. Such information can help identify where technically adequate care still produces avoidable patient sacrifice.

VIII. Limitations and Future Research

The cross-sectional design does not permit strong causal conclusions, and the study was conducted at a single community health center using purposive sampling. Generalization to other Puskesmas should therefore be made cautiously. The sample of 120 respondents is adequate for the estimated PLS-SEM model but limits detailed subgroup analysis. Several initial indicators were removed during measurement-model refinement, and a small number of retained indicators had loadings between 0.60 and 0.70.

Future studies should replicate the model across multiple community health centers and regions, use larger or probability-based samples where feasible, and refine the measurement instrument. Longitudinal research could examine whether perceived value predicts actual repeat utilization over time. Satisfaction, trust, waiting time, health-center image, accessibility, and patient characteristics may also be tested as additional mediators or moderators.

IX. Conclusion

This study demonstrates that empathy, reliability, and patient value are significant determinants of patient loyalty at Kedaung Wetan Community Health Center. Empathy and reliability each increase patient value and directly strengthen loyalty, while patient value itself increases loyalty. Patient value partially mediates both the empathy-loyalty and reliability-loyalty relationships. Reliability emerges as the strongest direct predictor of patient loyalty and the stronger of the two service-quality dimensions in forming patient value.

Patient loyalty in public primary healthcare is therefore generated through both direct service experience and patients' evaluation of whether the benefits received justify their sacrifices. Sustainable improvement requires empathetic communication to be combined with accurate, consistent, timely, and predictable service processes. Strengthening these dimensions can improve patient value and support long-term relationships with the community health center.

Acknowledgements

The authors acknowledge the management and staff of UPT Puskesmas Kedaung Wetan, Tangerang City, and all patients who participated in the study. The authors declare that no external funding was reported and that there are no competing interests.

References

- [1] A. Ahmed, M.E.T.C. van den Muijsenbergh, and H.J.M. Vrijhoef, Person-centred care in primary care: What works for whom, how and in what circumstances? *Health & Social Care in the Community*, 30(6), 2022, e3328-e3341. <https://doi.org/10.1111/hsc.13913>
- [2] A. Parasuraman, V.A. Zeithaml, and L.L. Berry, SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64(1), 1988, 12-40.
- [3] S.W. Mercer and W.J. Reynolds, Empathy and quality of care, *British Journal of General Practice*, 52(Suppl), 2002, S9-S13.
- [4] V.A. Zeithaml, Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence, *Journal of Marketing*, 52(3), 1988, 2-22. <https://doi.org/10.1177/002224298805200302>
- [5] R.B. Woodruff, Customer value: The next source for competitive advantage, *Journal of the Academy of Marketing Science*, 25(2), 1997, 139-153. <https://doi.org/10.1007/BF02894350>
- [6] R.L. Oliver, Whence consumer loyalty? *Journal of Marketing*, 63(Special Issue), 1999, 33-44. <https://doi.org/10.1177/00222429990634S105>
- [7] J.J. Cronin, M.K. Brady, and G.T.M. Hult, Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments, *Journal of Retailing*, 76(2), 2000, 193-218. [https://doi.org/10.1016/S0022-4359\(00\)00028-2](https://doi.org/10.1016/S0022-4359(00)00028-2)
- [8] H. Chahal and N. Kumari, Consumer perceived value and consumer loyalty in healthcare sector, *Journal of Relationship Marketing*, 11(2), 2012, 88-112. <https://doi.org/10.1080/15332667.2012.682329>
- [9] Y. Zhang, X. Li, and J. Wang, Service quality, perceived value and patient loyalty in healthcare settings, *International Journal of Healthcare Management*, 15(4), 2022, 412-421. <https://doi.org/10.1080/20479700.2021.1910198>
- [10] N. Wulandari, V. Paramarta, and E. Purwanda, The influence of service quality on patient satisfaction and loyalty in the clinic: A systematic review, *Berajah Journal*, 4(5), 2024, 1075-1086. <https://doi.org/10.47353/bj.v4i5.407>
- [11] J.C. Sweeney and G.N. Soutar, Consumer perceived value: The development of a multiple item scale, *Journal of Retailing*, 77(2), 2001, 203-220. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0)

- [12] L.L. Berry, Relationship marketing of services—Growing interest, emerging perspectives, *Journal of the Academy of Marketing Science*, 23(4), 1995, 236-245. <https://doi.org/10.1177/009207039502300402>
- [13] R.M. Morgan and S.D. Hunt, The commitment-trust theory of relationship marketing, *Journal of Marketing*, 58(3), 1994, 20-38. <https://doi.org/10.1177/002224299405800302>
- [14] M. Amin and S.Z. Nasharuddin, Hospital service quality and its effects on patient satisfaction and behavioural intention, *Clinical Governance: An International Journal*, 18(3), 2013, 238-254. <https://doi.org/10.1108/CGIJ-05-2012-0016>
- [15] J.F. Hair, G.T.M. Hult, C.M. Ringle, and M. Sarstedt, *A primer on partial least squares structural equation modeling (PLS-SEM)*, 3rd ed. (Thousand Oaks, CA: Sage, 2022).