



ANALYSIS OF THE EFFECTS OF WAITING TIME FOR MEDICATION DISPENSING AND SERVICE QUALITY ON PATIENT LOYALTY WITH PATIENT SATISFACTION AS A MEDIATOR AT THE PHARMACY DEPARTMENT OF SANJIWANI GENERAL HOSPITAL GIANYAR

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Abstract

The acceleration of globalization compels hospitals to enhance patient loyalty through high-quality services. This study aims to analyze the effect of prescription waiting time and service quality on patient loyalty mediated by patient satisfaction at the Outpatient Pharmacy Department of RSUD Sanjiwani Gianyar. This research design is an explanatory quantitative study rooted in the positivistic paradigm with a developmental research approach. The population comprised all outpatients, averaging 7,836 visits over a six month baseline. A sample of 381 respondents was selected using a non probability purposive sampling technique. Data were collected via structured questionnaires and analyzed using Variance-Based Structural Equation Modeling (SEM) via SmartPLS 4.0. The structural path analysis revealed that waiting time had no significant effect on patient satisfaction or patient loyalty thus, the mediating role of satisfaction on this path was rejected. Conversely, service quality exerted an exceptionally strong, positive, and significant effect on patient satisfaction and directly driven patient loyalty. Furthermore, patient satisfaction significantly and strongly mediated the relationship between service quality and loyalty. Establishing a partial mediation model. The empathy dimension emerged as the primary catalyst that psychologically buffered technical waiting time deficits. Hospital management should heavily focus on emotional care and interpersonal staff interactions to secure sustainable, long-term patient loyalty.

Keywords: Patient Satisfaction, Patient Loyalty, Service Quality



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INTRODUCTION

The advancement of globalization and trade liberalization has created increasingly intense and competitive business competition, including in the healthcare industry, such as both public and private hospitals. In response to this situation, hospitals are required to operate professionally and adaptively, and to be able to enhance patient loyalty by providing superior and measurable service quality. Based on Social Exchange Theory, the relationship between hospitals and patients is grounded in a process of social exchange; patients will feel satisfied and loyal if the benefits and quality of care they receive are commensurate with or even exceed the time, cost, and sacrifices they have made.

The pharmacy department is a strategic unit within the hospital's service system that interacts directly with outpatients to ensure the optimal use of pharmaceutical preparations to improve their quality of life. However, patient visit data at the Pharmacy Department of Sanjiwani Gianyar Regional General Hospital for the period June–November 2025 shows a fluctuating and unstable pattern, indicating that patient loyalty to pharmaceutical services remains inconsistent. This phenomenon is reinforced by previous research showing early indications of declining loyalty, in which the majority of respondents had a poor perception of service quality and were not interested in returning for follow-up visits.

There is an academic debate (research gap) regarding the factors that influence patient loyalty, particularly concerning the relationship between service quality, satisfaction, and loyalty. Some researchers have found that service quality has a significant effect on satisfaction, and that satisfaction acts as a strong mediator toward patient loyalty, supported by the dimensions of staff communication, duration of service, medication availability, and the environment. Conversely, other studies have shown contradictory results, in which service quality does not have a direct, positive, and significant influence on patient loyalty; thus, this inconsistency in results makes it a very interesting topic for further research.

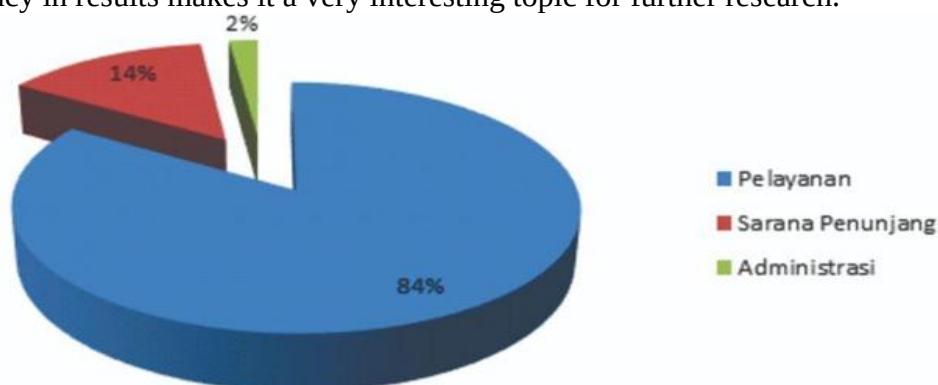


Figure 1. Customer Complaints by Type at Sanjiwani Regional General Hospital, Gianyar

In addition to complaints regarding long wait times for medication, patient complaint data also shows that the most common complaints relate to service quality. Based on the classification of patient complaints, 84% of complaints stemmed from service quality, while 14% were related to supporting facilities and only 2% to administrative issues. These findings indicate that the primary issues experienced by patients are not limited to technical or administrative aspects, but primarily concern the quality of interactions and the service processes provided by the hospital. The dominance of complaints regarding service quality indicates that service quality is a crucial factor that significantly influences patients' perceptions and experiences. Suboptimal service has the potential to cause dissatisfaction, erode trust, and reduce patients' interest in returning for follow-up visits. This situation can ultimately lead to a decline in patient loyalty toward the hospital.

On the other hand, patient satisfaction is an emotional response and a crucial indicator for evaluating the performance of healthcare services relative to prior expectations. These

determinants of satisfaction and loyalty are significantly influenced by tangible factors, assurance, empathy, and waiting time. Regarding service efficiency, Minister of Health Decree No. 129 of 2008 on Minimum Service Standards (SPM) has specifically set limits on pharmacy service waiting times, namely a maximum of 30 minutes for ready-to-use medications and a maximum of 60 minutes for compounded medications, to ensure the effectiveness and quality of pharmaceutical services.

However, there is a significant gap between administrative achievements and on-the-ground realities at the Pharmacy Department of Gianyar Sanjiwani Regional General Hospital. Although the hospital's internal data indicates that all service quality indicators have met the SPM target of 100 percent, media reports in 2025 revealed public complaints regarding patients' families having to wait in line for hours due to electronic system malfunctions and high prescription volumes. This gap indicates that the administrative achievement of quality standards does not fully reflect the actual quality of service experienced by patients; therefore, further research is needed to examine the impact of service quality and waiting times on patient satisfaction and loyalty.

RESEARCH METHOD

Research Design

A conceptual framework is a logical structure of thought designed to explain the variables to be studied (Nisma Iriani et al., 2022). The conceptual framework aims to assist researchers in conducting their studies in a more focused and objective manner (Siregar et al., 2022). In this study, the conceptual framework provides the basis for explaining how waiting time for medication pickup and service quality influence patient satisfaction, which is ultimately expected to lead to increased patient loyalty. Therefore, this section explains the rationale and logical relationships among the variables that form the research framework. Based on the description of the relationships among the variables above, the conceptual framework of this study is illustrated in the diagram below.

This study employs an explanatory quantitative approach based on the positivist paradigm to test hypotheses and analyze causal relationships among variables objectively. The research design is developmental research that adapts a previous model by examining the influence of Medication Pickup Wait Time (X1) and Service Quality (X2) on Patient Loyalty (Y) through Patient Satisfaction (M) as a mediating variable.

Overall, this study is based on the premise that efficient wait times and high-quality service will increase patient satisfaction, and ultimately, that satisfaction will foster patient loyalty to the hospital. By understanding the relationships among these variables, this study is expected to provide empirical and practical insights to help improve the quality of pharmacy services and maintain patient loyalty at Sanjiwani Gianyar Regional General Hospital.

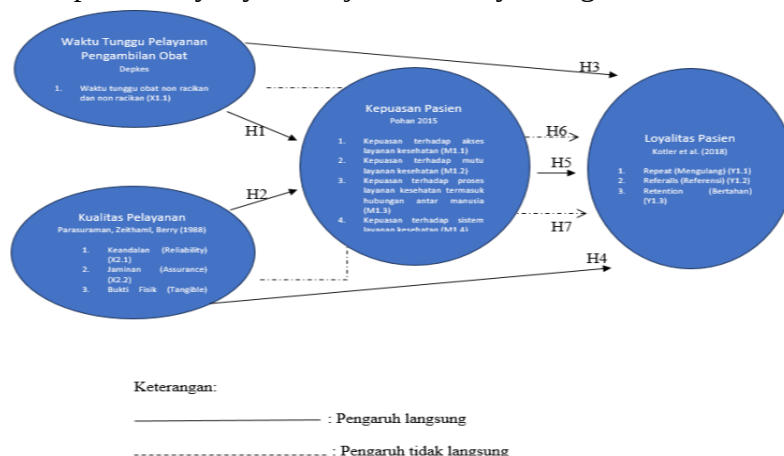


Figure 2. Conceptual Framework.

Data analysis was conducted descriptively and inferentially using the Variance-Based Structural Equation Modeling (SEM) method with a Partial Least Squares (PLS) approach via the SmartPLS 4.0 program. The PLS method was chosen because it is powerful, uses bootstrapping techniques that do not require a normal data distribution, and is adaptive for processing models with reflective/formative constructs in relatively small sample sizes. The focus of this study is directed at specific subjects, objects, and locations in the healthcare sector.

Research Target/Subject

The research subjects were outpatients receiving services at the Pharmacy Department of Sanjiwani Gianyar Regional General Hospital, located at Jalan Ciung Wanara-Gianyar No. 2, Bali Province. Meanwhile, the research objective was a comprehensive analysis of the relationship and influence between waiting time for medication pickup, service quality, and patient satisfaction on patient loyalty to the hospital's pharmacy department. The determination of these components was aligned with the needs of scientific analysis to ensure that the data collected in the field is truly relevant and capable of addressing the issues under study.

The population in this study includes all outpatients at the Pharmacy Department of Sanjiwani Gianyar Regional General Hospital, with an average of 7,836 patient visits over the past six months. Sampling was conducted using non-probability sampling with a purposive sampling method, in which respondents were selected based on specific criteria and considerations, namely outpatients who had received pharmacy services at that location and were willing to complete a structured questionnaire. To ensure data representativeness and obtain a representative sample size from the total population, the minimum sample size in this study was calculated mathematically using the Slovin formula with a tolerable margin of error.

Instruments, and Data Collection Techniques

Model evaluation in Partial Least Squares (PLS) is conducted in two main stages: the outer model (measurement model) and the inner model (structural model). In the outer model with reflective indicators, the assessment focuses on convergent validity through factor loading values between item scores and construct scores, where values above 0.70 are considered high, although values of 0.50 to 0.60 are still tolerable in early-stage scale development research (Chin, 1998). Additionally, discriminant validity is evaluated using cross-loading values, where the correlation between a construct and its measure must be greater than that with other constructs, as well as the Fornell-Larcker method, which requires that the square root of the AVE for a construct be greater than its correlation with other constructs (Fornell & Larcker, 1981).

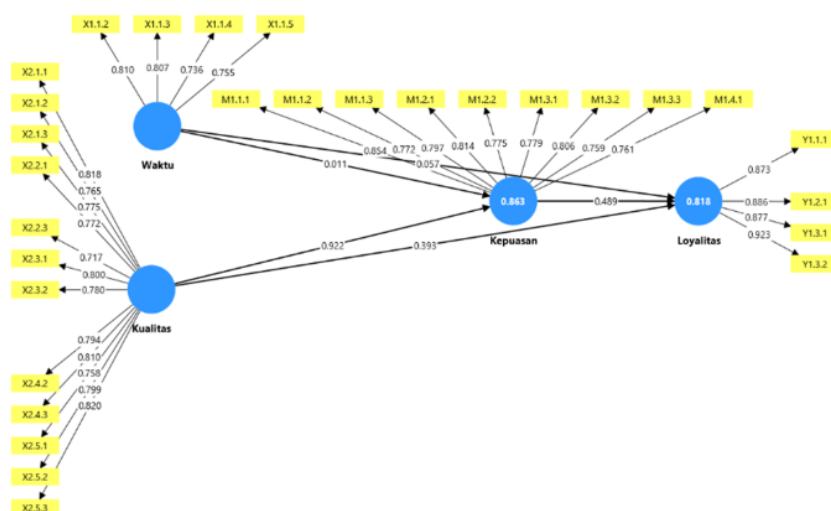


Figure 3. PLS data processing by Researchers 2026

Meanwhile, the inner model was evaluated to assess the percentage of variance and the model's predictive ability through the R^2 (R-square) value for the dependent variable, the f^2 (effect size) value to measure the relative contribution of independent variables (Chin, 1998), and the Stone-Geisser Q^2 (Q-square) test for predictive relevance. Finally, the stability of the estimates and the significance of the structural path coefficients are tested using t-statistics obtained through the bootstrapping procedure.

RESULTS AND DISCUSSION

The characteristics of the respondents in this study include (1) Characteristics of Respondents by Gender: the majority of respondents in this study were women, totaling 210 (55.10%), while male respondents numbered 171 (44.90%). This indicates that service users at the Pharmacy Department of Sanjiwani Gianyar Regional General Hospital are predominantly women. (2) Respondent Characteristics by Education Level: It was found that respondents with a vocational high school (SMK) education background constitute the largest group, totaling 106 people (27.80%), followed by elementary school (SD) graduates at 81 people (21.30%), and junior high school (SMP) graduates at 77 people (20.20%). Meanwhile, respondents with a higher education background (D3 and S1) totaled 71 people, or approximately 18.60%. (3) Characteristics of Respondents Based on Occupation. It can be seen that the majority of respondents in this study work as self-employed individuals, totaling 140 people (36.70%), followed by the private sector with 84 people (22.00%), and homemakers with 64 people (16.80%). The dominance of respondents with entrepreneurial and private sector backgrounds (totaling 58.70%) indicates that the majority of service users at the Sanjiwani Gianyar Regional General Hospital Pharmacy are members of the productive segment of society who have limited free time.

It was found that the majority of the indicators met the validity criteria. However, there were two items $X_{1.1.1}$, $X_{2.3.3}$, and $Y_{1.1.2}$ that had factor loadings below 0.70. Therefore, in accordance with established statistical principles, these three items were removed from the research model, and a re-test was conducted to ensure that all remaining indicators were valid and reliable. The results of the second-stage outer loading estimation showed that all remaining indicators had values above 0.70.

Table 1. Outer Loading Results of Convergent Validity Test

Statement	Satisfaction	Quality	Loyalty	Time	Result
M1.1.1	0,851				Valid
M1.1.2	0,767				Valid
M1.1.3	0,807				Valid
M1.2.1	0,811				Valid
M1.2.2	0,769				Valid
M1.3.1	0,765				Valid
M1.3.2	0,802				Valid
M1.3.3	0,761				Valid
M1.4.1	0,753				Valid
M1.4.2	0,788				Valid
X1.1.2				0,812	Valid
X1.1.3				0,81	Valid
X1.1.4				0,733	Valid
X1.1.5				0,755	Valid
X2.1.1		0,816			Valid
X2.1.2		0,757			Valid
X2.1.3		0,77			Valid
X2.2.1		0,773			Valid
X2.2.2		0,771			Valid

X2.2.3	0,716	Valid
X2.3.1	0,8	Valid
X2.3.2	0,777	Valid
X2.4.1	0,703	Valid
X2.4.2	0,786	Valid
X2.4.3	0,809	Valid
X2.5.1	0,754	Valid
X2.5.2	0,797	Valid
X2.5.3	0,814	Valid
Y1.1.1	0,873	Valid
Y1.2.1	0,886	Valid
Y1.3.1	0,877	Valid
Y1.3.2	0,923	Valid

It can be seen that all indicators for the variables Waiting Time for Medication Dispensing, Service Quality, Patient Satisfaction, and Patient Loyalty at the Pharmacy Unit of Sanjiwani Gianyar Regional General Hospital have loading factor values ranging from 0.703 to 0.923. Thus, all indicators in this study are declared convergent valid, as they have met the criterion of a correlation value above 0.70 with their respective constructs. This indicates that these indicators have a high level of accuracy in measuring the latent variables under study.

Table 2. Cross Loading

Instrumen	Satisfaction	Quality	Loyalty	Time	Result
M1.1.1	0,854	0,802	0,78	0,543	Valid
M1.1.2	0,722	0,69	0,637	0,513	Valid
M1.1.3	0,797	0,75	0,779	0,519	Valid
M1.2.1	0,814	0,781	0,753	0,485	Valid
M1.2.2	0,775	0,734	0,659	0,485	Valid
M1.3.1	0,779	0,702	0,662	0,463	Valid
M1.3.2	0,806	0,752	0,73	0,505	Valid
M1.3.3	0,759	0,716	0,657	0,479	Valid
M1.4.1	0,761	0,677	0,657	0,435	Valid
X2.1.1	0,756	0,818	0,747	0,536	Valid
X2.1.2	0,706	0,765	0,73	0,557	Valid
X2.1.3	0,711	0,775	0,697	0,477	Valid
X2.2.1	0,707	0,772	0,667	0,522	Valid
X2.2.3	0,664	0,717	0,598	0,52	Valid
X2.3.1	0,76	0,8	0,716	0,509	Valid
X2.3.2	0,73	0,78	0,678	0,492	Valid
X2.4.2	0,754	0,794	0,663	0,51	Valid
X2.4.3	0,752	0,81	0,732	0,517	Valid
X2.5.1	0,693	0,758	0,653	0,556	Valid
X2.5.2	0,757	0,799	0,687	0,492	Valid
X2.5.3	0,75	0,82	0,784	0,561	Valid
Y1.1.1	0,832	0,821	0,873	0,568	Valid
Y1.2.1	0,759	0,764	0,886	0,545	Valid
Y1.3.1	0,756	0,75	0,877	0,528	Valid
Y1.3.2	0,814	0,812	0,923	0,572	Valid
X1.1.2	0,43	0,452	0,461	0,81	Valid
X1.1.3	0,4	0,439	0,435	0,807	Valid
X1.1.4	0,583	0,622	0,556	0,736	Valid
X1.1.5	0,48	0,506	0,453	0,755	Valid

Based on the results of the second-stage cross-loading test, it was found that each indicator now has a higher correlation value with its original construct (variable) than with other constructs in the research model. The consistency of the results in the convergent and discriminant validity tests confirms that each remaining indicator is valid in accurately representing its respective variable.

After all indicators were declared valid through convergent and discriminant validity testing, the next step was to conduct reliability testing. Reliability testing was performed to demonstrate the consistency and stability of the instrument in repeatedly measuring latent constructs. In PLS-SEM, reliability is assessed based on three main criteria: Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability.

Tabel 3. Recapitulation of Construct Validity and Reliability

Variabel	Cronbach's alpha	Composite reliability	AVE	Results
Satisfaction	0,925	0,927	0,621	Reliabel
Quality	0,943	0,944	0,601	Reliabel
Loyalty	0,912	0,914	0,792	Reliabel
Time	0,784	0,785	0,605	Reliabel

It can be seen that all research variables met strict reliability criteria. All variables had Cronbach's Alpha and Composite Reliability values above 0.70, supported by AVE values above 0.50. This indicates that all research instruments used to measure patient perceptions at the Pharmacy Unit of Sanjiwani Gianyar Regional General Hospital possess excellent levels of internal consistency and reliability. With all criteria in the Outer Model met, this research model is deemed valid and reliable, making it suitable to proceed to the Inner Model (Structural Model) testing and hypothesis testing stages.

Tabel 4. Path Coefficient Bootstrapping Direct Effect Results

Path Coefficient	Original sample	Standard deviation	T statistics	P values	Ket.
Satisfaction -> Loyalty	0,551	0.064	8,557	0.000	Reliabel
Quality -> Satisfaction	0,923	0.020	46,831	0.000	Reliabel
Quality -> Loyalty	0,337	0.072	4,7	0.000	Reliabel
Time -> Satisfaction	0,021	0.028	0,736	0,462	Unreliable
Time -> Loyalty	0,05	0.031	1,609	0,108	Unreliable

Hypothesis testing indicates that the waiting time for medication pickup does not have a significant effect on patient satisfaction ($t = 0.736 < 1.96$; $p = 0.462 > 0.05$) or on patient loyalty directly ($t = 1.609 < 1.96$; $p = 0.108 > 0.05$; coefficient = 0.050). Consequently, Patient Satisfaction does not mediate the effect of waiting time on loyalty (H_6 rejected; $t = 0.726$; $p = 0.468$; coefficient = 0.011), indicating that waiting time is not a strategic factor at Sanjiwani Gianyar General Hospital and is inconsistent with the studies by Yulia et al. (2025) or Santosa & Purnama (2025). This lack of significance is influenced by the profile of the majority of respondents who work as entrepreneurs (36.70%) and have independent time flexibility, as well as the dominance of lower secondary education levels (a cumulative 69.3% comprising vocational high school, junior high school, and elementary school graduates), who tend to be more tolerant and understanding of queues at government referral hospitals with high patient

Psychologically, waiting time does not reduce satisfaction because the speed with which staff accept prescriptions at the initial counter is rated highly (mean 3.84), thereby fostering a positive perception that patients are "already being served" (in progress). Furthermore, in the context of public healthcare, patient satisfaction is more determined by the final outcome namely, the certainty of medication availability and recovery than by the speed of the process; this is why patient satisfaction levels remain very high (mean 4.18) even though the average

waiting time falls into the “Fairly Good” category (mean 3.36). Nevertheless, there are technical obstacles that patients perceive as significant regarding the indicator of prescription issue resolution speed, which recorded the lowest score (mean 2.92), which linearly explains why the repeat purchase dimension is the lowest loyalty component (mean 3.78).

Conversely, Service Quality was found to have a very strong, positive, and significant influence on Patient Satisfaction, with a path coefficient approaching perfect linearity (0.923), a t -value of $46.831 > 1.96$, and $p = 0.000 < 0.05$. These findings reinforce the studies by Defnni et al. (2023), Rao et al. (2025), and the ServQual model (Zeithaml et al., 1988), which state that satisfaction is created when service performance exceeds expectations. Based on descriptive data, the Empathy dimension recorded the highest score (mean 4.01), demonstrating that the respondent group dominated by women (55.10%) and those with lower secondary education or below highly values the human touch, friendliness, warm greetings, and patience of pharmacy staff in explaining medication labels, which effectively compensates for shortcomings in waiting time.

On the other hand, there is consistency in the objectivity of respondents' assessments, where the lowest score for the Service Quality variable specifically the Responsiveness dimension (3.81) correlates directly with the lowest score for the Patient Satisfaction variable, namely the Quality of Healthcare Services (3.81). This figure indicates that although patients are satisfied with the friendliness of the staff, they still offer critical feedback that the staff's readiness in handling technical issues still requires improvement. However, thanks to the ease of procedures reflected in the satisfaction score for access to healthcare services of 4.01, the basic expectations of this group of respondents have been well met, so that service quality remains the most dominant determinant that raises their overall satisfaction to 4.18.

Statistical testing also confirmed that Service Quality has a positive and significant direct effect on Patient Loyalty ($t = 4.700 > 1.96$; $p = 0.000 < 0.05$; coefficient = 0.337), which is consistent with the findings of Andriyani et al. (2025) and Nuryanti et al. (2021). This relationship is reinforced by the alignment of the mean value of the Service Quality variable at 3.89 (Good) with the mean value of Patient Loyalty at 4.01 (Good). The personal touch within the Empathy dimension (4.01) successfully transformed functional satisfaction into emotional bonds and trust, so that patients who felt humanized were committed to maintaining a long-term relationship (relationship marketing) with the hospital and drove the high verbal recommendation (referrals) indicator to 4.22.

Furthermore, patient satisfaction was found to have a positive and significant effect on patient loyalty, with a strong relationship ($t = 8.557 > 1.96$; $p = 0.000 < 0.05$; coefficient = 0.551), supporting the theory of Griffin (2010) as well as the studies by Rahman et al. (2021) and Gul et al. (2023). The high level of patient satisfaction (mean 4.18), driven by satisfaction with service access (4.01), serves as the primary foundation for fostering loyal behavior. The loyalty structure at Sanjiwani General Hospital tends to be word-of-mouth loyalty rather than purely behavioral, given that the referral score reached its peak (4.22) due to the emotional attachment of female patients and entrepreneurs who felt highly valued by the staff's treatment, which then converted that sense of satisfaction into loyalty to recommend the hospital.

Finally, the results of the indirect effect test indicate that Patient Satisfaction significantly mediates the relationship between Service Quality and Patient Loyalty (H7 accepted; $t = 8.532 > 1.96$; $p = 0.000 < 0.05$) with a strong mediation coefficient of 0.509. This phenomenon is categorized as partial mediation because the direct path from quality to loyalty remains significant. However, since the coefficient value through the satisfaction mediation path (0.509) is much larger than that of the direct path (0.337), this finding provides a crucial managerial lesson for the management of Gianyar Sanjiwani Regional General Hospital: merely providing technically high quality service is not enough; pharmacy staff must ensure that this quality is experienced as a satisfying emotional experience in order to significantly increase patients' long-term loyalty.

CONCLUSION

Based on the results of data analysis and discussion, this study concludes that medication waiting time does not have a significant direct effect on patient satisfaction or patient loyalty. This phenomenon indicates that waiting time duration is not a primary determining factor for patients at the Pharmacy Unit of Sanjiwani Gianyar Regional General Hospital, likely due to patients' expectations having been calibrated to the characteristics of a government referral hospital with high queue volumes. Consequently, Patient Satisfaction was found to be unable to mediate the effect of Medication Service Waiting Time on Patient Loyalty. Since the waiting time variable did not initially affect patients' functional satisfaction levels, the mediation pathway leading to the formation of long-term loyalty behavior was also not statistically significant.

Conversely, Service Quality and Patient Satisfaction have proven to be strategic tools that have a positive and significant impact on building Patient Loyalty. Improvements in service quality particularly in the dimensions of empathy, staff friendliness, and ease of access can linearly boost satisfaction while simultaneously building direct trust in long term relationships with patients. Furthermore, Patient Satisfaction was found to have a significant effect on Patient Loyalty and acts as a strong mediating variable (partial mediation) in bridging the influence of Service Quality on Patient Loyalty. This mediation pathway is the strongest route in the study's structural model, confirming that strategies to improve technical service quality will be far more effective in multiplying patient loyalty and positive referrals if they can first be converted into satisfying emotional experiences.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization, Data curation, Investigation, Formal analysis, Methodology, Software, Writing - original draft.

Author 2: Supervision, Conceptualization, Funding acquisition, Resources, Validation,

Author 3: Supervision, Validation, Investigation.

Author 4: Validation, Formal analysis, Critical review.

Author 5: Validation, Critical review.

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