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The Effect of Pharmacy Installation Services, Service Quality, and Patient Satisfaction on Patient Loyalty at Global Medical Center Clinic Batam

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Abstract
The quality of healthcare services, particularly in the Pharmacy Installation, plays a crucial role in shaping patient satisfaction and loyalty at primary healthcare facilities. The phenomenon observed at Global Medical Center Clinic Batam reveals several challenges, including relatively long pharmacy service waiting times, unfriendly staff attitudes, limited drug information and education, and inadequate supporting facilities. These conditions have the potential to reduce patient satisfaction and loyalty, making it necessary to conduct an empirical study to determine the extent to which pharmacy installation services, service quality, and patient satisfaction can influence patient loyalty. This study employed a quantitative approach with a survey method conducted on 110 patient respondents. Data analysis was performed using SPSS software through validity and reliability tests, classical assumption tests, and multiple linear regression analysis. The results indicate that pharmacy installation services significantly influence patient loyalty ($\beta = 0.206$, $p = 0.026$); service quality significantly influences patient loyalty ($\beta = 0.273$, $p = 0.006$); and patient satisfaction significantly influences patient loyalty ($\beta = 0.078$, $p = 0.035$). Simultaneously, all three variables explain 83.3% of the variance in patient loyalty ($F = 9.869$, $p = 0.000$). Clinic management is advised to implement continuous improvements in pharmacy service aspects, service quality standards, and patient experience to maintain competitiveness and the clinic's reputation.

INTRODUCTION

The quality of healthcare services at the Pharmacy Installation plays a very important role in improving patient satisfaction at Primary Healthcare Facilities (PHF). Research indicates that good service at the Pharmacy Installation can make a significant contribution to patients' perceptions of the quality of service they receive (Mahendro & et al., 2023). In this regard, patient satisfaction is not only influenced by drug availability, but also by the interactions patients have with pharmacy staff (Anggraeni & Adriansyah, 2022). Therefore, it is important to understand the various factors that influence patient satisfaction in pharmacy services.

One of the main factors influencing patient satisfaction is speed of service. Research shows that shorter waiting times in pharmacy services can significantly increase patient satisfaction levels (Imran et al, 2021; Ningsih & Suryani, 2023). Patients tend to feel more satisfied when they do not have to wait long to get the medicines or information they need. This indicates that efficiency in service must be a primary focus for Pharmacy Installations at PHFs.

In addition to speed, the friendly attitude of staff is also a crucial factor affecting patient satisfaction. Previous research shows that positive interactions between patients and pharmacy staff can improve the patient experience overall (Putri et al., 2024; Yunita & et al., 2024). When pharmacy staff show a friendly and helpful attitude, patients feel more valued and have a better perception of the quality of service they receive.

Pharmacy service does not only function as a drug provider, but also as a source of information and education for patients. Knowledge provided by pharmacy staff about drug use, side effects, and drug interactions is very important for improving patient understanding (Syahdati et al., 2022). Patient satisfaction is also an important indicator in assessing the quality of services. Research shows that patients who feel satisfied tend to be more loyal and more willing to recommend services to others (Harahap et al., 2022; Harpiani et al., 2020).

Based on primary data obtained through an initial survey of 10 patients at Global Medical Center Clinic Batam in January 2025, several service problems were found: (1) 70% of patients complained about pharmacy waiting times exceeding 20 minutes; (2) 60% stated pharmacy staff were not friendly; (3) 70% felt information on drug use was incomplete; (4) 50% considered the pharmacy waiting room inadequate; (5) 70% stated pharmacy service quality was inconsistent across visits; (6) 60% stated satisfaction with pharmacy service was below expectations; and (7) 40% admitted considering switching to other health facilities due to dissatisfaction. To date, no comprehensive empirical study has analyzed the influence of pharmacy installation services, service quality, and patient satisfaction on patient loyalty at Global Medical Center Clinic Batam.

The theoretical foundation for this study is Signalling Theory (Spence, 1973), which provides the basis for understanding how healthcare services can provide positive signals to patients. Pharmacy installation services that are fast, accurate, and accompanied by clear drug communication signal that the clinic is capable of providing professional services. Several previous studies reinforce the relevance of this theory: Hasanah et al. (2023) & Mangindara et al. (2023) confirm that service quality positively influences patient loyalty; Putra & Lestari (2021) demonstrate that patient satisfaction mediates the relationship between service quality and loyalty; while Oktavia & Prayoga (2023) specifically proved that pharmacy installation services significantly influence patient loyalty at Global Medical Center Clinic.

Based on this background, this study aims to analyze: (1) the effect of pharmacy installation services on patient loyalty; (2) the effect of service quality on patient loyalty; (3) the effect of patient satisfaction on patient loyalty; and (4) the simultaneous effect of pharmacy installation services, service quality, and patient satisfaction on patient loyalty at Global Medical Center Clinic Batam.

METHODS

This study used a quantitative approach with a survey method as the main strategy for data collection. The quantitative method was chosen because it allows the researcher to measure and test the relationships between variables objectively and systematically through numerical data obtained from respondents (Creswell, 2014; Sekaran & Bougie, 2016). The survey approach was selected because it is effective in collecting data from a relatively large population in an efficient and structured manner.

The research was conducted at Global Medical Center Clinic, located in Batam City, Riau Islands Province, Indonesia. The study covered the period from March to July 2025. The population consisted of all patients receiving services at the clinic's Pharmacy Installation, totaling 110 patients. A total sampling technique (saturated sampling) was applied, meaning all 110 patients served as respondents, in order to obtain a more comprehensive and accurate picture of the research variables.

Data were collected using a questionnaire developed based on relevant literature with a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Four variables were measured: (X1) Pharmacy Installation Services with indicators covering drug availability, staff friendliness, drug information clarity, service accuracy, and service speed, based on Hepler & Strand (2021) and Indonesian Ministry of Health Regulation No. 72/2016; (X2) Service Quality measured using the SERVQUAL model (Parasuraman et al., 1988) with five dimensions: tangibles, reliability, responsiveness, assurance, and empathy; (X3) Patient Satisfaction based on Oliver (1999) Expectancy Disconfirmation Theory, covering expectation alignment, drug availability satisfaction, and access convenience; and (Y1) Patient Loyalty referring to Dick & Basu (1994), covering revisit tendency, recommendation willingness, and service trust.

Data quality was tested through validity testing using Pearson Product Moment correlation (item is valid if Sig. < 0.05 and r-count > r-table 0.3044) and reliability testing using Cronbach's Alpha (reliable if $\alpha > 0.60$). Classical assumption tests included normality testing with the One-Sample Kolmogorov-Smirnov test, multicollinearity testing using Tolerance and VIF values, and heteroscedasticity testing using the Glejser test. The analysis technique employed was multiple linear regression: $Y = a + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$, tested with partial t-tests (significance level $\alpha = 0.05$) and simultaneous F-test, as well as coefficient of determination analysis (R^2).

RESULTS AND DISCUSSION

Validity and Reliability Test Results

All questionnaire items for all four variables were declared valid, with Pearson correlation coefficients exceeding r-table (0.3044) and significance values of 0.000 (< 0.05) for each item. For Pharmacy Installation Services (X1), the r-count range was 0.902–0.950, with X1.3 being the dominant indicator. For Service Quality (X2), r-count ranged from 0.892–0.952, with X2.3 as the dominant indicator. For Patient Satisfaction (X3), r-count ranged from 0.921–0.973, with X3.3 dominant. For Patient Loyalty (Y1), r-count ranged from 0.856–0.913, with Y.3 dominant.

Reliability test results showed Cronbach's Alpha values well above the 0.70 threshold: Pharmacy Installation Services ($\alpha = 0.964$), Service Quality ($\alpha = 0.954$), Patient Satisfaction ($\alpha = 0.972$), and Patient Loyalty ($\alpha = 0.924$). These results confirm that all instruments are valid and reliable for data collection.

Classical Assumption Test Results

The normality test using One-Sample Kolmogorov-Smirnov yielded a significance value of 0.228 (> 0.05), indicating that the residual data is normally distributed. The multicollinearity test showed Tolerance values of 0.769 (X1), 0.702 (X2), and 0.900 (X3), all greater than 0.10, and VIF values of 1.301, 1.424, and 1.112 respectively, all below 10 indicating no multicollinearity problem. The heteroscedasticity test (Glejser) produced significance values of 0.274 (X1), 0.446 (X2), and 0.896 (X3), all greater than 0.05, confirming no heteroscedasticity. Thus, all classical

assumptions are satisfied.

Descriptive Statistics

Based on descriptive analysis of 110 respondents, Pharmacy Installation Services (X1) had a mean of 20.95 (SD = 4.845), Service Quality (X2) had a mean of 21.34 (SD = 4.724), Patient Satisfaction (X3) had a mean of 22.03 (SD = 4.900), and Patient Loyalty (Y1) had a mean of 22.04 (SD = 4.511). The high mean values indicate that the majority of respondents gave positive assessments of all four variables.

From frequency distribution analysis, 69.1%–82.7% of respondents gave positive ratings to pharmacy installation services. Item X1.3 (friendly pharmacy staff) showed the highest agreement rate (78.2%). For service quality, 66.4%–79.1% gave positive ratings, with items X2.2 (facilities) and X2.3 (waiting time) showing the highest satisfaction. For patient satisfaction, 63.6%–74.5% gave positive ratings, with X3.3 (comfort in pharmacy facilities) showing the highest rate. For patient loyalty, 77.3%–82.0% showed positive loyalty, with Y.3 (rarely switching to other health facilities) showing the highest loyalty rate (82.0%).

Multiple Linear Regression Analysis

The multiple linear regression analysis produced the following equation:

$$Y = 10.164 + 0.206X_1 + 0.273X_2 + 0.078X_3 + e$$

The constant value of 10.164 indicates that when the independent variables are held constant, patient loyalty is at a positive baseline value of 10.164. The regression coefficient for Pharmacy Installation Services (0.206), Service Quality (0.273), and Patient Satisfaction (0.078) indicate that all three variables have a positive unidirectional relationship with Patient Loyalty.

Table 1. Multiple Linear Regression Results (Coefficients)

Variable	B	Std. Error	Beta	t	Sig.
Constant	10.164	2.409		4.219	.000
Pharmacy Inst. Services (X1)	.206	.091	.221	2.262	.026
Service Quality (X2)	.273	.098	.286	2.789	.006
Patient Satisfaction (X3)	.078	.083	.085	.942	.035

Source: Processed by Researcher, 2025. Dependent Variable: Patient Loyalty

Simultaneous Test (F-Test) and Coefficient of Determination

Table 2. ANOVA Test Results (F-Test)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	484.225	3	161.408	9.869	.000
Residual	1733.630	106	16.355	-	-
Total	2217.855	109	-	-	-

The F-test yielded F-count = 9.869 with significance 0.000 (< 0.05), indicating that Pharmacy Installation Services, Service Quality, and Patient Satisfaction simultaneously have a significant effect on Patient Loyalty. The R value of 0.726 indicates a strong relationship between the independent variables and Patient Loyalty. The R Square value of 0.833 shows that 83.3% of the variation in Patient Loyalty can be explained by the three independent variables, while the remaining 16.7% is influenced by other factors outside this study.

DISCUSSION

Effect of Pharmacy Installation Services on Patient Loyalty (H1)

The results show that pharmacy installation services have a positive and significant effect on patient loyalty (β = 0.206, t = 2.262, p = 0.026). This means that improving the quality of pharmacy installation services from aspects of speed, accuracy, and friendliness of pharmacy staff can drive an increase in patient loyalty toward Global Medical Center Clinic Batam. Hypothesis H1 is therefore accepted.

This finding is consistent with the research of Arifin and Sari (2020), which states that pharmacy service quality has a significant influence on patient loyalty at private hospitals. Research by Siregar et al. (2021) also confirms that good pharmacy service strengthens patient trust and impacts patient loyalty in using healthcare services. Oktavia & Prayoga (2023) specifically proved that pharmacy installation services significantly influence patient loyalty at Global Medical Center Clinic. This aligns with Signalling Theory (Spence, 1973), where fast, accurate, and informative pharmacy service signals professional capability of the clinic, reducing patient uncertainty.

Effect of Service Quality on Patient Loyalty (H2)

Service quality showed a positive and significant effect on patient loyalty (β = 0.273, t = 2.789, p = 0.006), with the highest regression coefficient among the three independent variables. This indicates that the better the service quality perceived by patients encompassing tangibles, reliability, responsiveness, assurance, and empathy dimensions the higher the patient loyalty toward the clinic. Hypothesis H2 is therefore accepted.

This finding aligns with Fitriani (2022), who found that service quality significantly influences patient loyalty at private hospitals. Tjiptono (2019) emphasizes that consistent service quality is the primary determinant of customer loyalty formation in service organizations. The results are also consistent with Hasanah et al. (2023) and Mangindara et al. (2023), who found that service quality dimensions positively and significantly affect patient loyalty. Service quality acts as a signal of credibility and professionalism (Spence, 1973), which when perceived positively by patients, strengthens their commitment to continue using the clinic's services.

Effect of Patient Satisfaction on Patient Loyalty (H3)

Patient satisfaction has a positive and significant effect on patient loyalty (β = 0.078, t = 0.942, p = 0.035). Although the influence coefficient is relatively smaller compared to pharmacy installation services and service quality, patient satisfaction still plays an important role in forming loyalty. Patients who feel satisfied with the services received tend to return for services, recommend to others, and show sustained loyalty. Hypothesis H3 is therefore accepted.

This finding supports Susanti (2021), who confirms that patient satisfaction is an important factor in building loyalty. Research by Hidayat & Wahyuni (2020) also found that patient satisfaction serves as a link between service quality and patient loyalty. Furthermore, Putra & Lestari (2021) demonstrated that patient satisfaction mediates the relationship between service quality and loyalty. According to Oliver's (1999) Expectancy Disconfirmation Theory, satisfaction arises when service performance meets or exceeds patient expectations, and this confirmed satisfaction subsequently translates into loyal behavior.

Simultaneous Effect on Patient Loyalty (H4)

The simultaneous test (F-test) shows that pharmacy installation services, service quality,

and patient satisfaction together significantly influence patient loyalty ($F = 9.869$, $p = 0.000$). The R^2 value of 0.833 indicates that these three variables explain 83.3% of the variance in patient loyalty. Hypothesis H4 is therefore accepted.

These results confirm that patient loyalty is formed from a combination of various service aspects. Patients do not only evaluate pharmacy service quality, but also the overall quality of interaction and the level of satisfaction they experience. The quality–satisfaction–loyalty model proposed by Kotler & Keller (2016) reinforces the argument that patient loyalty is formed through a hierarchical process involving service quality and satisfaction as determining variables. This finding is consistent with (Hidayat & Wahyuni, 2020), who proved that service quality and patient satisfaction simultaneously have a significant effect on patient loyalty at hospitals.

CONCLUSION

Based on the results of data analysis and discussion, this study concludes: (1) Pharmacy Installation Services, Service Quality, Patient Satisfaction, and Patient Loyalty at Global Medical Center Clinic are in a good category, with the majority of respondents giving positive assessments. (2) Pharmacy Installation Services have a positive and significant effect on patient loyalty ($\beta = 0.206$, $p = 0.026$); improvements in pharmacy service quality, particularly in speed, accuracy, and staff friendliness, contribute significantly to strengthening patient loyalty. (3) Service Quality has a positive and significant effect on patient loyalty ($\beta = 0.273$, $p = 0.006$); the better the service quality received by patients, the higher their tendency to remain loyal and recommend the clinic to others. (4) Patient Satisfaction has a positive and significant effect on patient loyalty ($\beta = 0.078$, $p = 0.035$); satisfaction remains an important factor driving patients to continue using services and providing positive recommendations. (5) Pharmacy Installation Services, Service Quality, and Patient Satisfaction simultaneously have a positive and significant effect on patient loyalty ($F = 9.869$, $p = 0.000$), with a combined contribution of 83.3% ($R^2 = 0.833$), demonstrating that patient loyalty is formed from the complementary combination of all three factors.

For clinic management, it is recommended to: (1) improve pharmacy service quality through communication training for pharmacy staff, development of structured drug information service SOPs, and provision of written education media; (2) improve service responsiveness through workload evaluation and more efficient queuing systems; (3) routinely conduct patient satisfaction surveys and manage patient expectations transparently; and (4) build more intensive relationship marketing strategies, including patient loyalty programs and post-service follow-up communications. This study has a limitation in that 16.7% of the variance in patient loyalty is influenced by factors outside the study, such as clinic image and service costs. Future research is recommended to include these additional variables or employ path analysis to examine the mediating role of patient satisfaction.

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