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Antecedents and Consequences of Outpatient Patient Satisfaction In The Pharmacy Installation of XYZ Hospital

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Abstract: This study aims to identify the factors that influence the satisfaction levels of outpatients in the Pharmacy Department at XYZ Hospital and their impact on patient loyalty. The study involved 208 outpatients. Data was collected through a questionnaire containing 38 questions using a 1-5 Likert Scale based on a judgemental sampling method. The data was analyzed using the SEM method based on PLS. The results indicate that communication and the attitude of pharmacy staff have a positive and significant influence on patient satisfaction. Timeliness in providing services also contributes positively and significantly to patient satisfaction. The availability of medications in a timely and adequate manner, a clean and comfortable pharmacy environment, and prices perceived as reasonable also have a positive and significant impact on patient satisfaction. Furthermore, patient satisfaction positively and significantly affects patient loyalty in the Pharmacy Department at XYZ Hospital, with satisfied patients tending to return for services and recommend them to others.

Keyword: communication and attitude of pharmacy staff, service speed, medication availability, pharmacy environment, medication prices, patient satisfaction, patient loyalty

INTRODUCTION

The global pharmaceutical market growth is very promising, with a projected increase of 4.7% CAGR over the next five years, reaching USD 1.5 trillion by 2023. The major developed markets remain the largest contributors, while pharmerging countries such as China, India, Brazil, Russia, South Africa, Mexico, Indonesia, and Turkey will account for nearly 35% of global sales growth. Indonesia, as one of the pharmerging countries, has a significant contribution. With a population of 260 million and a market value of IDR 141.6 billion (USD 10.11 billion) in 2021, Indonesia has become the largest pharmaceutical market in ASEAN (Indonesian International Institute for Life Science, 2023).

The increasing number of hospitals in Indonesia, both government and privately managed, demands hospitals to provide the highest levels of care, professionalism, and competence to reflect the best quality of service (Septiani et al., 2023). As an integral part of social and health organizations, hospitals play a crucial role in providing comprehensive health services, covering both curative and preventive aspects for society. Additionally, hospitals

serve as training centers for healthcare professionals and medical research centers (World Health Organization).

Pharmacy services in hospitals are an inseparable element of the healthcare system, with a primary focus on patient-oriented services. These services include the provision of quality and affordable medicines, medical devices, and consumables to all levels of society, including clinical pharmacy services. Based on the Ministry of Health Regulation No. 58 of 2014, pharmaceutical services aim to identify, prevent, and resolve problems related to the use of medicines.

The hospital pharmacy installation (IFRS) is an important part that significantly affects the professionalism, economics, and operational costs of the hospital. Pharmaceutical services are one of the key services, as almost all patient care is related to pharmaceutical supplies. IFRS is fully responsible for the management and control of all pharmaceutical supplies and health supplies, from planning, selection, procurement, storage, and distribution, to monitoring drug effects and providing information. However, many hospitals in Indonesia have not yet optimized their pharmacy services, hindered by the capabilities of pharmaceutical staff, management policies, and limited knowledge about pharmacy services (Ihsan et al., 2018). As a result, services are still focused on the provision and distribution of drugs (drug-oriented), and have not yet shifted to patient-oriented care as required by the increasing demands for quality pharmaceutical care (Minister of Health Decree, 2014).

Competition in the healthcare industry is currently becoming more intense, especially among hospitals. XYZ Hospitals, part of the XYZ Hospitals Group located in an elite area of South Jakarta, has faced similar challenges. As a large hospital with many patients, XYZ also faces similar issues regarding pharmacy service speed, which has not yet met the target. Based on interviews with ten visitors waiting for medication at the outpatient pharmacy, six of them complained that the waiting time exceeded the hospital standard of 15 minutes for ready-to-use drugs and 30 minutes for compounded medications. Some patients had to wait more than 30 minutes. Meanwhile, four other patients expressed satisfaction, with an average waiting time of around 15 minutes. Patients redeeming more medication tended to wait longer. Interviews with two pharmacists at the outpatient pharmacy installation confirmed that pharmacy service waiting times did not meet the hospital's target. XYZ’s service standard sets a maximum waiting time of 15 minutes for ready-to-use drugs and 30 minutes for compounded medications, in line with the standards set by the Ministry of Health of the Republic of Indonesia. However, complaints about the long process from receiving the prescription to dispensing the medication still frequently occur.

Further research is needed to explore the factors that influence satisfaction and loyalty towards sustainable pharmacy services provided by hospitals. This is important because, in pharmacy regulations, service improvement, continuity, and the development of good pharmacy practice are top priorities (Gül et al., 2023). Patient satisfaction itself is an emotional response that can change over time, depending on the quality of service received at a particular time (Bastos & Gallego, 2008). Furthermore, patient satisfaction is often considered a key indicator of the overall success of healthcare services and serves as an effective tool for improving the quality of services provided (Márquez-Peiró & Pérez-Peiró, 2008).

Patient loyalty is also a crucial aspect of healthcare services, as loyalty plays a role in building long-term relationships between patients and service providers. Factors influencing loyalty include service quality, trust in the service provider, and received satisfaction (Rosa & De Muñoz, 2008; Gül et al., 2023). Conversely, patient satisfaction can be influenced by various aspects such as service speed, interaction with healthcare personnel, and pharmacy service accessibility (Levana & Antonio, 2022). Understanding the relationship between satisfaction and loyalty will greatly assist hospitals in improving the continuity of better pharmacy services in the future.

Understanding patients' expectations and preferences is crucial to uncovering their level of satisfaction, enhancing it, and improving services (Panvelkar et al., 2009). Patients in the pharmacy installation expect pharmacy staff to have a good attitude and effective communication skills. Patients respond more positively to pharmacy staff who respond to their needs with empathy, patience, and attention, especially during the first encounter (Do et al., 2021).

In the pharmacy installation, patients demand faster service and shorter waiting times to receive their medications. Since patients' waiting time is a measurable outcome, patients compare this with their previous shopping experiences. As such, patients' perceptions of satisfaction or dissatisfaction are formed (Kesumahati & Jurnali, 2020; Levana & Antonio, 2022).

Physical elements, design, and visuality shape patients' perceptions of the pharmacy installation (Gül et al., 2023). Pharmacy installation managers improve the pharmacy environment by changing the layout and design of the pharmacy installation, as well as redesigning the lighting (Levana & Antonio, 2022).

Timely provision of prescribed medications and other medical pharmaceutical products is a key factor in patient satisfaction (Khudair & Raza, 2013). If all prescribed medications are not available, patients must return to the pharmacy installation a second time (Barghouth et al., 2021).

Another important aspect often observed in pharmacy installations to attract customers is medication pricing strategies. This has been found to be a strong factor influencing repeat purchases, customer commitment, or customer loyalty across various business types, including traditional pharmacy installations (Do et al., 2021). However, customers' decisions to continue purchasing from a specific pharmacy installation do not depend solely on the price of medication but also on the quality of service (Nitadpakorn et al., 2017). In terms of pharmacy installations, service quality is divided into two aspects: perceived quality of the pharmacy installation's structure and perceptions of the pharmacist, to distinguish between physical aspects and human aspects (Hari et al., 2022).

Patient loyalty refers to the expected behavior regarding products or services (Goodman, 2009). This behavior includes the likelihood of continuing to purchase in the future or switching to another service provider. Customer loyalty to an institution depends on how satisfied they are with the services or products from that institution (Levana & Antonio, 2022).

This study aims to identify the factors affecting outpatient satisfaction at the pharmacy installation of XYZ Hospitals, which impacts patient loyalty. These factors include communication and attitude, service promptness, medicine supply, and pharmacy environment (Gül et al., 2023; Barghouth et al., 2021). Additionally, this study includes the price factor (Cakici et al., 2019).

Based on the above explanation, this research will investigate the Antecedents and Consequences of Outpatient Satisfaction in the Pharmacy Installation of Hospital XYZ.

Through the explanation of the background provided, it is clear that the variables in the research model are related to the phenomenon or event being studied. The following format can be useful as a formulation of research questions.

1. Does communication and attitude of pharmacists positively influence outpatient satisfaction at XYZ Hospital?
2. Does the speed of service at the Pharmacy Installation positively affect the satisfaction of outpatients at XYZ Hospital?
3. Does the availability of drugs positively affect the satisfaction of outpatients at XYZ Hospital?
4. Does the pharmacy environment positively influence outpatient satisfaction at XYZ Hospital?
5. Does drug price positively affect outpatient satisfaction at XYZ Hospital?

6. Does outpatient satisfaction positively affect patient loyalty at XYZ Hospital?

METHOD

This type of study refers to its type, namely quantitative research with surveys. Quantitative research is classified as a study that uses a measurable data analysis process with clear and detailed stages, and uses certain statistical calculations to draw conclusions objectively.(Sekaran & Bougie, 2020). Survey research is a non-interventional study: no special treatment or subjects are not intervened in the research period/ data is simply obtained from surveys, namely observing respondents, data is obtained from questionnaires as data collection instruments. This research is also a case study, focusing on the analysis of outpatient services at the XYZ Hospital Pharmacy Installation.

The population determined in this study, namely outpatients at the Pharmacy Installation of XYZ Hospital. This study uses a nonprobability sampling approach: individuals in the population do not have the same opportunity to become research samples.(Sekaran & Bougie, 2020). This was done because of technical difficulties in obtaining a sampling frame which is a requirement for probability sampling research. Samples were obtained through a population using purposive sampling techniques, where there are a number of criteria that have been determined in advance.(Sekaran & Bougie, 2020). The criteria include respondents being outpatients related to the XYZ Hospital Pharmacy Installation.

This study uses an a priori approach with power analysis, with the consideration that it is easier and can be confirmed with PLS-SEM output. In determining the minimum number of samples, it is necessary to do it using G * Power 3.1. Through this calculation, it is necessary to determine the value determination first, namely the medium f2 value of 0.15 with a power of 95%, alpha ($\alpha = 0.05$), and the number of predictors is three variables. The results of the calculation using power analysis are as shown in Figure 3.1. through calculations using power analysis supported by G * Powero 3.1, the minimum sample size required or a total sample size of 138 respondents is obtained. The researcher used 208 respondents who met the standards during the questionnaire distribution stage, and all 208 respondents were included as the sample in this study.

Data processing is done by testing the validity and reliability using Convergent Validity and Composite Reliability analysis. The data is then analyzed using Smart PLS 3.9.2 software to test the structural and measurement models. The analysis technique used is Partial Least Squares (PLS), which allows the analysis of causal relationships between independent, dependent, and intervening variables and hypothesis testing. Researchers test the causal relationship between independent, dependent, and intervening variables using the coefficient of determination (R2) and predictive relevance (Q2). In addition, they also test the validity and reliability of the construct through convergent validity, discriminant validity, composite reliability, and average variance extracted (AVE). Researchers also use t-statistics and p-values to determine the acceptance or rejection of the hypothesis with the criteria of t-statistics> 1.96 and p <0.05.

RESULTS AND DISCUSSION

This study involved 208 respondents who were outpatients at the Pharmacy Department of XYZ Hospital. The respondents can be categorized based on gender, age, residence, last educational attainment, occupation, the number of times they purchased medicine at XYZ Hospital Pharmacy in the past year, and how long they have been patients at XYZ Hospital.

Table 1. Respondent Demographic Profile

Item	Description	Count (n)	Percentage (%)
Gender	Male	59	28.4%
	Female	149	71.6%
Total		208	100,0%
Age	18-27 years	34	16.3%

Item	Description	Count (n)	Percentage (%)
	28-43 years	151	72.6%
	44-59 years	21	10.1%
	> 59 years	2	1.0%
Total		23	11,1%
Residence	Bekasi	7	3.4%
	Bogor	10	4.8%
	Depok	20	9.6%
	Jakarta	154	74.0%
	Sukabumi	1	0.5%
	Tangerang	15	7.2%
	South Tangerang	1	0.5%
Total		208	100,0%
Last Education	Diploma	31	14.9%
	Postgraduate (Master/Doctorate)	24	11.5%
	Undergraduate	114	54.8%
	High School or equivalent	37	17.8%
	Middle School	2	1.0%
Total		208	100,0%
Occupation	Doctor	1	0.5%
	Housewife	10	4.8%
	Private Employee	160	76.9%
	Part-time Worker	4	1.9%
	Student	1	0.5%
	Teacher	1	0.5%
	Retired	1	0.5%
	Nurse	2	1.0%
	Civil Servant/BUMN	6	2.9%
	Professional	14	6.7%
	Entrepreneur	8	3.8%
Total		208	100,0%
How many times have you purchased medicine at XYZ Hospital Pharmacy in the past year?	1x	16	7.7%
	2x	38	18.3%
	More than 3x	154	74.0%
Total		208	100,0%
How long have you been a patient at XYZ Hospital?	Less than 1 year	25	12.0%
	1-3 years	44	21.2%
	3-5 years	57	27.4%
	More than 5 years	82	39.4%
Total		208	0,0%

The presentation of descriptive data from the seven latent variables along with their indicators is outlined as follows.

Tabel 2. Descriptive Analysis

Variable	Code	Indicator	Mean	Median	Min	Max	SD	Kategori
Communication and Attitude	CA	CA1	4,07	4	1	5	0,83	Agree
		CA2	3,96	4	1	5	0,91	Agree
		CA3	4,41	5	1	5	0,72	Strongly Agree
		CA4	4,43	5	1	5	0,68	Strongly Agree
		CA5	4,38	4	3	5	0,65	Strongly Agree
		CA6	4,44	5	3	5	0,62	Strongly Agree
		CA7	4,38	4	1	5	0,70	Strongly Agree
Service Promptnes	SP	SP1	3,73	4	1	5	0,97	Agree
		SP2	3,98	4	1	5	0,88	Agree
		SP3	3,88	4	1	5	1,02	Agree

Variable	Code	Indicator	Mean	Median	Min	Max	SD	Kategori
		SP4	4,00	4	1	5	0,89	Agree
Medicine Supply	MS	MS1	4,19	4	1	5	0,95	Agree
		MS2	4,27	4	1	5	0,88	Strongly Agree
		MS3	4,26	4	1	5	0,89	Strongly Agree
		MS4	4,22	4	1	5	0,96	Strongly Agree
		MS5	4,28	4	2	5	0,81	Strongly Agree
Pharmacy Environment	PE	PE1	3,33	3	1	5	1,12	Neutral
		PE2	3,29	3	1	5	1,17	Neutral
		PE3	3,88	4	1	5	0,86	Agree
		PE4	3,88	4	1	5	0,84	Agree
		PE5	3,25	3	1	5	1,18	Neutral
		PE6	3,72	4	1	5	1,00	Agree
		PE7	3,24	3	1	5	1,24	Neutral
		PE8	4,13	4	2	5	0,66	Agree
		PE9	3,97	4	2	5	0,76	Agree
Price	PR	PR1	3,55	4	1	5	0,99	Agree
		PR2	3,45	4	1	5	1,02	Agree
		PR3	3,63	4	1	5	0,98	Agree
Patient Satisfaction	SAT	SAT1	4,08	4	1	5	0,81	Agree
		SAT2	4,20	4	1	5	0,75	Agree
		SAT3	4,23	4	2	5	0,72	Strongly Agree
		SAT4	4,12	4	1	5	0,77	Agree
		SAT5	4,09	4	1	5	0,80	Agree
		SAT6	4,08	4	1	5	0,79	Agree
Patient Loyalty	LY	LY1	4,04	4	2	5	0,84	Agree
		LY2	4,04	4	2	5	0,78	Agree
		LY3	3,98	4	1	5	0,92	Agree
		LY4	4,04	4	1	5	0,77	Agree

Outer Model (Measurement Model)

The outer model evaluates the relationship between the variables and the indicators being studied. In addition, at this stage, validity and reliability tests are also conducted. This test was previously conducted by conducting a pretest on a minimum of 208 respondents and then compared with the total number of respondents as an actual test, with the following description:

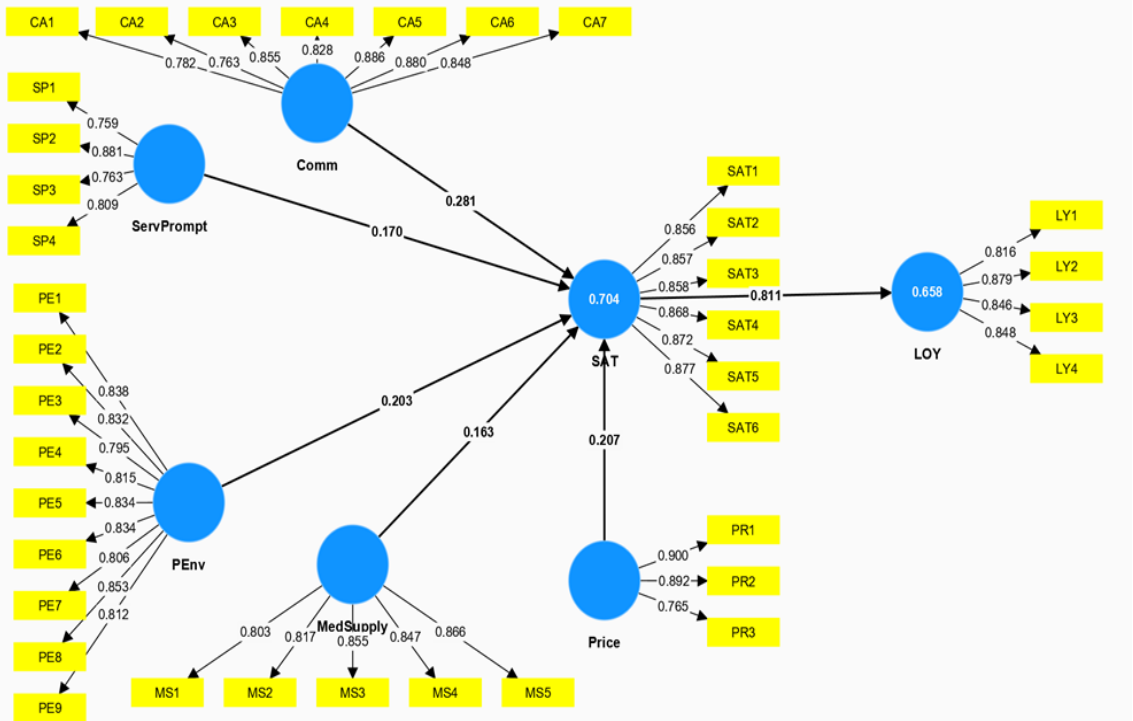

Figure 1. Measurement Model (outer model)
Source: Research Results Data (2024)

According to Ghozali (2018) to find out the results of the validity test, it can be seen in the image of the results of the algorithm model where the indicator can be said to meet the convergent validity requirements if it has a value > 0.6. There are three criteria in the use of data analysis techniques with SmartPLS to assess the outer model, namely Convergent Validity, Discriminant Validity, and Composite Reliability. The following are the results of the outer model in this study

Indicator Validity (Outer Loading)

The results of the Outer Loadings can be seen in table 1 as follows:

Table 3. Validity Testing

Variables	Indicator	Loading Factor	Conclusion
Communication and Attitude	CA1	0.782	Valid
	CA2	0.763	Valid
	CA3	0.855	Valid
	CA4	0.828	Valid
	CA5	0.886	Valid
	CA6	0.880	Valid
	CA7	0.848	Valid
Patient Loyalty	LY1	0.816	Valid
	LY2	0.879	Valid
	LY3	0.846	Valid
	LY4	0.848	Valid
Medicine Supply	MS1	0.803	Valid
	MS2	0.817	Valid
	MS3	0.855	Valid
	MS4	0.847	Valid
	MS5	0.866	Valid
Pharmacy Environment	PE1	0.838	Valid
	PE2	0.832	Valid
	PE3	0.795	Valid
	PE4	0.815	Valid
	PE5	0.834	Valid
	PE6	0.834	Valid
	PE7	0.806	Valid
	PE8	0.853	Valid
	PE9	0.812	Valid
Price	PR1	0.900	Valid
	PR2	0.892	Valid
	PR3	0.765	Valid
Patient satisfaction	SAT1	0.856	Valid
	SAT2	0.857	Valid
	SAT3	0.858	Valid
	SAT4	0.868	Valid
	SAT5	0.872	Valid
	SAT6	0.877	Valid
Service Promptness	SP1	0.759	Valid
	SP2	0.881	Valid
	SP3	0.763	Valid
	SP4	0.809	Valid

According to the results of the outer loading test, all indicators show an outer loading value greater than 0.7, so the indicators above are said to be valid.

Construct Reliability

Table 4. Results of Construct Reliability Test

	Cronbach's Alpha	Composite Reliability	Result
Communication and Attitude	0,928	0,934	Reliable
Patient Loyalty	0,870	0,884	Reliable
Medicine Supply	0,898	0,918	Reliable
Pharmacy environment	0,942	0,949	Reliable
Price	0,814	0,830	Reliable
Patient satisfaction	0,932	0,933	Reliable
Service Promptnes	0,825	0,854	Reliable

From the table above, it can be seen that the Cronbach's alpha values for all variables are greater than 0.7, which meets the criteria outlined by Hair et al. (2019, 2020).

Construct Validity

Table 5. Average Variance Extracted (AVE)

Variables	Average Variance Extracted (AVE)	Results
Communication and Attitude	0.699	Valid
Patient Loyalty	0.718	Valid
Medicine Supply	0.702	Valid
Pharmacy environment	0.680	Valid
Price	0.731	Valid
Patient satisfaction	0.747	Valid
Service Promptness	0.647	Valid

From Table 5, it can be seen that the average variance extracted (AVE) for each variable is appropriate. All values are greater than the predetermined threshold of 0.5. As a result, it can be concluded that all variables have high convergent validity.

Discriminant Validity

Tabel 6. Result Discriminant Validity Heterotrait-Monotrait Ratio (HTMT)

	CA	PL	MS	PE	Pr	PS	SP
Communication and Attitude							
Patient Loyalty	0,727						
Medicine Supply	0,622	0,800					
Pharmacy Environment	0,552	0,584	0,435				
Price	0,643	0,844	0,703	0,745			
Patient satisfaction	0,764	0,884	0,701	0,675	0,799		
Service Promptnes	0,687	0,787	0,775	0,495	0,693	0,744	

Based on the results above, if each construct is below the threshold of 0.90, the variables are considered truly distinct from one another and are effective for measuring their respective constructs.

Inner Model (Structural Model)

This test uses several methodsinner model testwhich is done by one-tailed hypothesis testing with the re-sample or bootstrapping method using the Smart PLS® 4.0.9.6 system. Bootstrapping is a numerical procedure by testing the significance and coefficient through the re-sampling technique (Ringle et al, 2015). The purpose of this structural model is to assess the correlation between latent variables in a research model. There are several stages used in the inner model, namely the multicollinearity test with the Variance inflation factor (VIF), R-Square (R2), f square (f2), CVPAT and importance performance map analysis (IPMA). This stage is needed to explain the explanatory and predictive capacity of the proposed research model. At the end of the data analysis, the importance of each variable is added by using the

total influence it has on the target construct and the average response from the respondent's answers. IPMA analysis can facilitate a practical approach for managers that facilitates the development of priority lists

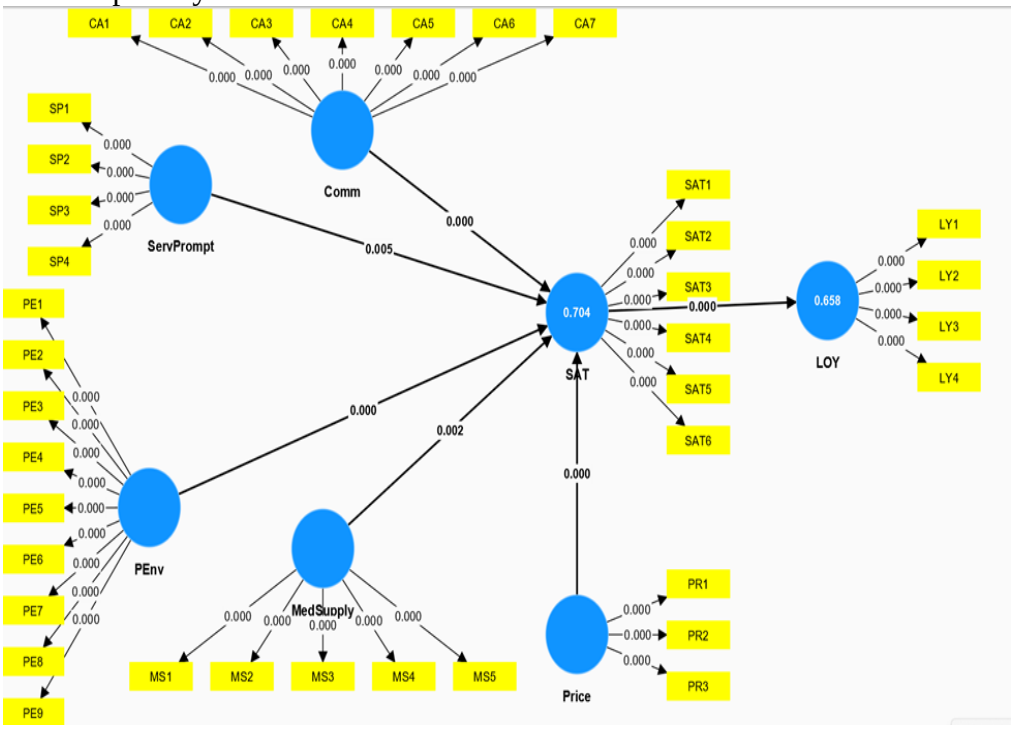

Figure 2. Measurement Model (Inner Model)
Source: Research Results Data (2024)

Multicollinearity with Variance Inflation Factor (VIF)

Table 7. Inner ResultsVIF Value

	CA	PL	MS	PE	Pr	PS	SP
Communication and Attitude						2,060	
Patient Loyalty							
Medicine Supply						2,266	
Pharmacy Environment						1,944	
Price						2,373	
Patient satisfaction		1,000					
Service Promptness						2,285	

From Table 7 it can be concluded that there are four variables with VIF values below 3. Thus, it can be concluded that the four components of the research model have optimal internal VIF values. In addition, there are two variables with VIF values between 3-5, these values are considered as recommended values for multicollinearity tests or are still within an acceptable range. The results of the study above indicate that among the variables in the research model there are no multicollinearity problems.

R-Squared Determination Coefficient (R2)

Table 8. Results of R squared (R2)

Variables	R Square	Results
Patient Loyalty	0.658	Strong
Patient satisfaction	0.704	Strong

Based on the data in Table 8, it can be concluded that the Patient Loyalty variable has an R-Squared value of 0.658, which is considered strong. This means that 65.8% of the

variation in Patient Loyalty can be explained by the independent variables in the research model, while the remaining 34.2% is explained by other factors outside this research model. Likewise, the Patient satisfaction variable has an R-Squared value of 0.704, which is also considered strong. This indicates that 70.4% of the variation in Patient satisfaction can be explained by the independent variables in the research model, while the remaining 29.6% can be explained by other factors outside this model. In this case, Patient satisfaction acts as a mediating variable that can influence the relationship between independent variables such as Communication and Attitude, Medicine Supply, Pharmacy environment, Price, and Service Promptness with Patient Loyalty. The greater the number of relevant predictor variables in the research model, the greater the possibility of increasing the R^2 value.

Effect size f-square (f2

Table 9. Results f-square

Variables	Effect Size	Results
Communication and Attitude -> Patient satisfaction	0.130	Weak
Medicine Supply -> Patient satisfaction	0.040	Weak
Pharmacy environment -> Patient satisfaction	0.071	Weak
Price -> Patient satisfaction	0.061	Weak
Patient satisfaction -> Patient Loyalty	1,927	Strong
Service Promptnes -> Patient satisfaction	0.043	Weak

The results of table 9 above were obtainedpatient satisfactionhas a strong effect size in influencing patient loyalty. While the Medicine Supply variabletoPatient satisfactionhas a weak effect size.

Q2 predictive

Table 10. Results Q2 predictive

Variables	Q^2 prediction	Results
Patient Loyalty	0.630	large predictive relevance
Patient satisfaction	0.682	large predictive relevance

Based on the above testing, it is shown that Patient Loyalty and Patient Satisfaction demonstrate a strong predictive relevance relationship. This indicates that the model is capable of predicting the same output when there is a change or variation in the input data. Therefore, it can be concluded that this research model, using five independent variables, one mediation variable, and one dependent variable, is sufficient to be applied in future research. This model can also be further developed with the same structure but using a larger sample size and more stringent selection criteria to achieve optimal predictive capability.

Cross-Validated Predictive Ability(CVPAT)

Table 11. Cross-Validated Predictive Ability (CVPA) valueT)

Variables	PLS-SEM vs. Average indicator (IA)		PLS-SEM vs. Linear model (LM)	
	Average loss difference	p-value	Average loss difference	p-value
Patient Loyalty	-0.295	0,000	0.009	0.721
Patient Satisfaction	-0.297	0,000	-0.020	0.274
Overall	-0.296	0,000	-0.007	0.672

The interpretation of the results using CVPAT in this research model was conducted in two stages. First, by comparing the PLS-SEM output with the indicator average (IA) of the transformed or out-sample data. The result of this comparison shows a negative average loss difference with a p-value of 0.000, thus indicating that the model has predictive capability. In the next stage, when the PLS-SEM model is compared to the linear model (LM), a negative average loss difference is also obtained. This suggests that the error rate is lower in the PLS-SEM model, indicating that this model has strong predictive power.

Hypothesis testing

The results of the data processing using PLS-SEM for determining the hypothesis test outcomes are presented in Table 12 as follows.

Table 12. Hypothesis Test Results

	Hypothesis	Standard Coefficient	T statistics	P value	Note
H1	Communication and Attitude -> Patient satisfaction	0.281	5,084	0,000	Supported
H2	Service Promptness -> Patient satisfaction	0.170	2,552	0.005	Supported
H3	Medicine Supply -> Patient satisfaction	0.163	2,866	0.002	Supported
H4	Pharmacy environment -> Patient satisfaction	0.203	3,852	0,000	Supported
H5	Price -> Patient satisfaction	0.207	3,397	0,000	Supported
H6	Patient satisfaction -> Patient Loyalty	0.811	27,861	0,000	Supported

Based on Table 12 regarding the results of the hypothesis analysis, it can be seen that all hypotheses are supported. The explanations for each hypothesis are provided below.

The Effect of Communication and Attitude on Patient Satisfaction

The hypothesis test for H1 shows a p-value < 0.05 (0.000), a coefficient interval above 0 (0.281), and a t-statistic above 1.645 (5.084), indicating significance. The standard coefficient obtained is 0.281, demonstrating that Communication and Attitude have a positive direction toward Patient Satisfaction. Therefore, it can be concluded that Communication and Attitude are significant and have a positive effect on Patient Satisfaction. As Communication and Attitude improve, Patient Satisfaction increases.

The Effect of Service Promptness on Patient Satisfaction

The hypothesis test for H2 shows a p-value < 0.05 (0.005), a coefficient interval above 0 (0.170), and a t-statistic above 1.645 (2.552), indicating significance. The standard coefficient obtained is 0.170, indicating that Service Promptness has a positive direction toward Patient Satisfaction. Therefore, it can be concluded that Service Promptness is significant and has a positive effect on Patient Satisfaction. As Service Promptness improves, Patient Satisfaction increases.

The Effect of Medicine Supply on Patient Satisfaction

The hypothesis test for H3 shows a p-value < 0.05 (0.002), a coefficient interval above 0 (0.163), and a t-statistic above 1.645 (2.866), indicating significance. The standard coefficient obtained is 0.163, demonstrating that Medicine Supply has a positive direction toward Patient Satisfaction. Therefore, it can be concluded that Medicine Supply is significant and has a positive effect on Patient Satisfaction. As Medicine Supply improves, Patient Satisfaction increases.

The Effect of Pharmacy Environment on Patient Satisfaction

The hypothesis test for H4 shows a p-value < 0.05 (0.000), a coefficient interval above 0 (0.203), and a t-statistic above 1.645 (3.852), indicating significance. The standard coefficient obtained is 0.203, demonstrating that Pharmacy Environment has a positive direction toward Patient Satisfaction. Therefore, it can be concluded that Pharmacy Environment is significant and has a positive effect on Patient Satisfaction. As Pharmacy Environment improves, Patient Satisfaction increases.

The Effect of Price on Patient Satisfaction

The hypothesis test for H5 shows a p-value < 0.05 (0.001), a coefficient interval above 0 (0.207), and a t-statistic above 1.645 (3.397), indicating significance. The standard coefficient obtained is 0.207, showing that Price has a positive direction toward Patient Satisfaction. Therefore, it can be concluded that Price is significant and has a positive effect on Patient Satisfaction. As Price improves, Patient Satisfaction increases.

The Effect of Patient Satisfaction on Patient Loyalty

The hypothesis test for H6 shows a p-value < 0.05 (0.000), a coefficient interval above 0 (0.811), and a t-statistic above 1.645 (27.861), indicating significance. The standard coefficient obtained is 0.811, demonstrating that Patient Satisfaction has a positive direction toward Patient Loyalty. Therefore, it can be concluded that Patient Satisfaction is significant and has a positive effect on Patient Loyalty. As Patient Satisfaction increases, Patient Loyalty increases.

Importance- Performance Mapping Analysis (IPMA)

Table 13. Test results Importance – Performance Mapping Analysis (IPMA)

Indicator	Indicator Importance	Indicator Performance	Variable	Variable Importance	Variable Performance
CA1	0.041	76,683	**Communication and Attitude**	0.281	78,015
CA2	0.044	74,038			
CA3	0.047	85,216			
CA4	0.044	85,697			
CA5	0.053	68,750			
CA6	0.050	72,115			
CA7	0.057	84,495			
MS1	0.029	79,808	**Medicine Supply**	0.163	79,611
MS2	0.030	81,731			
MS3	0.040	81,611			
MS4	0.047	80,409			
MS5	0.048	76,122			
PE1	0.025	58,293	**Pharmacy Environment**	0.203	65,938
PE2	0.022	57,332			
PE3	0.028	71,995			
PE4	0.030	71,875			
PE5	0.022	56,130			
PE6	0.031	68,029			
PE7	0.022	55,889			
PE8	0.033	70,833			
PE9	0.034	65,545			
PR1	0.090	63,702	**Price**	0.207	63,509
PR2	0.081	61,298			
PR3	0.070	65,745			
SP1	0.040	68,269	**Service Prompts**	0.170	73,126
SP2	0.061	74,519			
SP3	0.042	71,995			
SP4	0.067	75,120			
Mean	**0.044**	**71,544**	**Mean**	**0.205**	**72,040**

The explanation above shows the mean or average of both importance and performance for each indicator and variable. The average values of the importance and performance variables are 0.205 and 72.040, respectively. These two values facilitate the association of the four quadrants on the mapping graph, as illustrated in Figure 3. This helps to easily identify which variables have achieved good performance and need to be maintained, as well as which aspects still need improvement. By understanding the position of the variables in each quadrant,

recommendations can be made regarding what should be prioritized by the pharmacy department at XYZ Hospital.

Based on this average value, two lines are then drawn to divide it into four quadrants as shown in the following image.

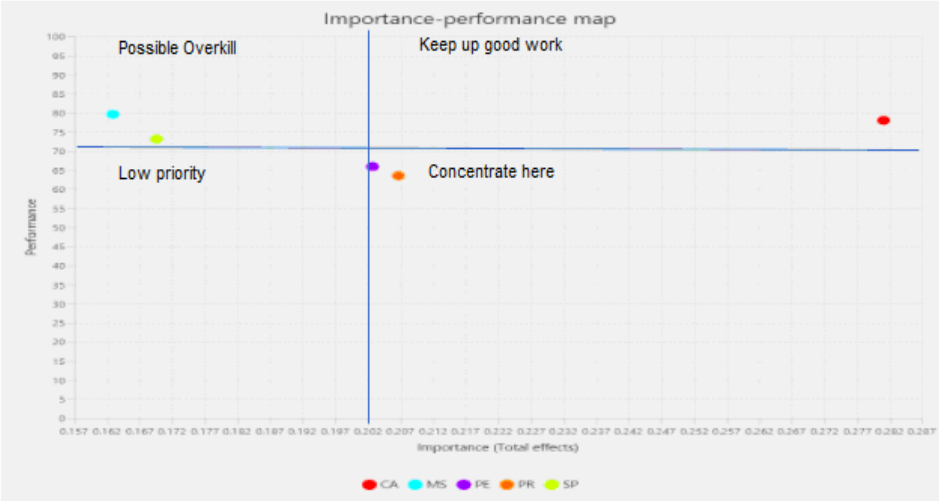

Figure 3. IPMA Variable Results

According to the figure, it can be seen that Medicine Supply and Service Promptness fall into Quadrant A, where they are considered most important and already perform well, indicating they should be maintained moving forward. Next, Communication and Attitude fall into Quadrant B**,** which is important but currently has low performance, making it the top priority for improvement to enhance patient satisfaction. Finally, Pharmacy Environment and Price are included in Quadrant D, where they are less important but already perform well.

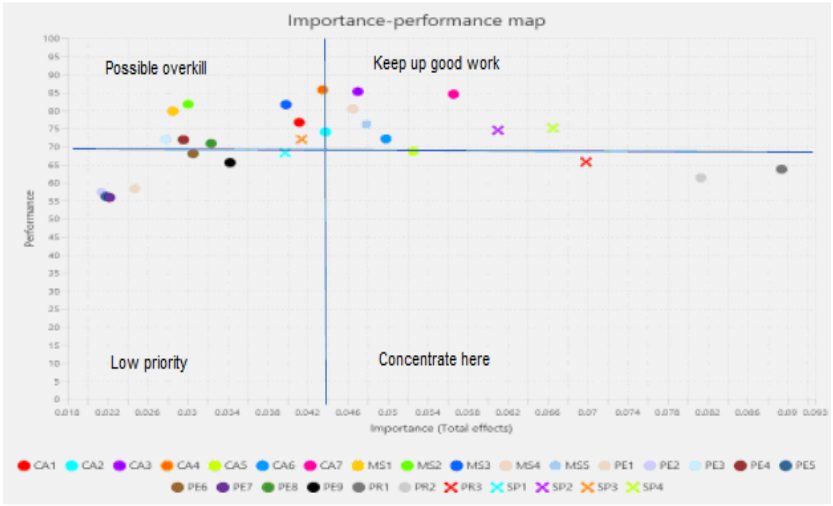

Figure 4. IPMA Results indicator

The explanation highlights the mean values of the importance and performance indicators. The average values for the indicator importance and performance are 0.044 and 71.544, respectively. Based on these averages, two lines were drawn to divide the plot into four quadrants, as shown in the figure above. According to the diagram, the following indicators fall into the respective quadrants: Quadrant A: MS1, MS2, MS3, MS5, CA1, CA2, CA4, SP3, PE4, and PE8, which are highly important and already performing well, so they should be maintained. Quadrant B: CA3, CA5, CA6, CA7, MS4, SP2, SP4, and PE3, which are important but underperforming, making them the top priority for improvement. Quadrant C: SP1, PE1, PE2, PE4, PR5, PE6, PE7, and PE9, where performance is low, but their importance is also relatively low. Quadrant D: PR1, PR2, and PR3, which are not particularly important but are

performing well.This categorization helps to identify which indicators need to be prioritized for improvement and which ones should be maintained at their current performance levels.

Discussion

The focus of this research is to examine the impact of various aspects of pharmacy services on patient satisfaction and loyalty. The proposed research model includes six hypotheses that test the relationships between several independent variables: Communication and Attitude, Service Promptness, Medicine Supply, Pharmacy Environment, and Price on the dependent variable, Patient Satisfaction, and the effect of Patient Satisfaction on Patient Loyalty. All hypotheses tested in this study showed significant results.

The Effect of Communication and Attitude on Patient Satisfaction

The results of this study indicate that pharmacy staff communication and attitude have a significant positive effect on patient satisfaction, with a standard coefficient of 0.281. This means that effective, informative communication and a friendly attitude from pharmacy staff are crucial in enhancing the patient experience. From a theoretical perspective, this aligns with service theory, which posits that good interactions between service providers and customers can strengthen trust, comfort, and satisfaction. Therefore, investing in communication training and soft skills development for pharmacy staff is highly recommended to improve service quality and patient satisfaction.

This finding is supported by several previous studies, which affirm the positive relationship between pharmacy staff communication and attitude with patient satisfaction. For instance, Do et al. (2021) found that good attitudes and effective communication skills from pharmacy staff are critical in influencing patient satisfaction, especially during initial encounters. Research by Olsson et al. (2014) also showed that empathetic interaction can improve health outcomes and patient satisfaction. Additionally, Castaldo et al. (2016) emphasized that staff communication skills significantly contribute to patients' perceptions.

The Effect of Service Promptness on Patient Satisfaction

Service Promptness, or timeliness in delivering services, also has a significant positive impact on patient satisfaction, with a standard coefficient of 0.170. This finding suggests that efficiency in serving patients, including quick prescription processing and minimal waiting times, is a crucial factor in shaping positive patient experiences. This aligns with service management theory, which states that speed and accuracy in service are key to creating customer satisfaction. Hence, XYZ Hospital should continue improving systems and processes to enhance pharmacy service efficiency.

Moreover, service speed in the pharmacy department has been shown to positively impact patient satisfaction. Barghouth et al. (2021) stated that shorter wait times increase satisfaction, and Gül et al. (2023) affirmed that fast and accurate service is a competitive advantage. Khudair & Raza (2013) also found that service speed contributes to patient satisfaction.

The Effect of Medicine Supply on Patient Satisfaction

The effect of Medicine Supply on patient satisfaction is also significant, with a standard coefficient of 0.163. This indicates that the availability and completeness of medications according to patient needs are critical aspects that influence their satisfaction. Good medicine availability reflects effective inventory management, which is essential in a pharmacy environment. This finding highlights the importance of efficient supply chain management to ensure that medications are always available to meet patient demands. Better stock management can reduce patient frustration and improve overall satisfaction.

Timely availability of medications is a key factor in patient satisfaction. Do et al. (2021) emphasized that patients highly expect comprehensive drug availability. Al-Arifi (2013) noted that stock shortages can lead to patient loss, while Elvey et al. (2016) highlighted the importance of accuracy in medication provision.

The Effect of Pharmacy Environment on Patient Satisfaction

The physical environment in the pharmacy also has a positive impact on patient satisfaction, with a standard coefficient of 0.203. This suggests that aspects such as cleanliness, comfort, waiting room design, and accessibility play important roles in shaping patients' perceptions of the services they receive. Service theory suggests that a well-maintained physical environment can improve patient mood and comfort, contributing to higher satisfaction levels. Therefore, paying attention to design elements and maintaining cleanliness and comfort in the pharmacy area is key to creating a positive patient experience.

A comfortable pharmacy environment also plays a role in enhancing patient satisfaction. Gül et al. (2023) showed that physical elements and environment design affect patients' perceptions, and Guhl et al. (2019) emphasized the importance of cleanliness and comfort in waiting areas. Additionally, Gavilan et al. (2014) found that a positive atmosphere can reduce negative patient reactions.

The Effect of Price on Patient Satisfaction

The price of medications, perceived as reasonable and affordable, has a significant impact on patient satisfaction, with a standard coefficient of 0.207. This finding shows that patients' perceptions of price affordability are an important factor that can influence their satisfaction levels. According to the theory of perceived value, patients feel more satisfied when they perceive that the costs they incur are proportional to the quality and services they receive. Therefore, fair and transparent pricing can enhance patients' positive perceptions and encourage them to return to XYZ Hospital’s pharmacy services.

Perceived reasonable pricing also contributes to patient satisfaction. According to Peter & Olson (2010), price perception is closely related to consumers' understanding of quality. Viglia & Abrate (2014) emphasized that patients' perceived reference prices affect satisfaction, while Cakici et al. (2019) found that awareness of others' paid prices can influence perceptions of price fairness.

The Effect of Patient Satisfaction on Patient Loyalty

This study shows that patient satisfaction has a highly significant impact on patient loyalty, with a high standard coefficient of 0.811. This indicates that patients who are satisfied with pharmacy services are more likely to be loyal, meaning they will return to use the same services in the future and may also recommend them to others. This supports customer loyalty theory, which states that satisfaction is a key factor in building long-term loyalty. XYZ Hospital should continue focusing on improving overall patient experiences, as this not only increases satisfaction but also ensures patient retention and loyalty.

Finally, patient satisfaction has a significant impact on loyalty. Márquez-Peiró & Pérez-Peiró (2008) defined satisfaction as an emotional response to the service received, and Bastos & Gallego (2008) stated that understanding patient expectations is essential for improving satisfaction. Liu et al. (2021) also emphasized that satisfied patients are more likely to use the same services again in the future.

The Importance-Performance Mapping Analysis (IPMA) provides valuable insights for the management of the XYZ Hospital Pharmacy to understand the dynamics between the importance of variables and their performance. The analysis results show that the average importance score is 0.205, while the average performance score is 72.040. This indicates variations between what patients consider important and how those aspects are currently

performing. By mapping the variables into four quadrants, management can clearly identify areas that need more attention and improvement strategies.

In the mapping, Medicine Supply and Service Promptness fall into Quadrant A, indicating that these two aspects are highly important to patients and are performing well. Therefore, maintaining the quality and consistency of medicine supply and service speed should be top priorities. This is crucial to ensuring patient satisfaction remains high, as good performance in these areas can strengthen patient loyalty and the reputation of the pharmacy.

On the other hand, Communication and Attitude fall into Quadrant B, indicating that while this aspect is important, its performance is still low. This suggests a need to focus on training and developing pharmacy staff's communication skills. By improving communication and staff attitudes, the pharmacy can provide a better experience for patients, which in turn can increase overall satisfaction.

Meanwhile, Pharmacy Environment and Price fall into Quadrant D, indicating that while these variables are not considered very important by patients, their performance is already good. This signals to management that, although these aspects need to be managed well, there is no urgency for major improvements. As a recommendation, management could consider reallocating resources to more urgent and important aspects, such as communication and attitude, which can have a direct impact on patient satisfaction.

Overall, the results of this study provide important insights into how various factors, such as communication, service promptness, medicine availability, physical environment, and price, affect patient satisfaction. Each hypothesis indicates a significant positive relationship, suggesting that improvements in each of these areas can lead to increased patient satisfaction. Most importantly, the strong relationship between patient satisfaction and loyalty shows that efforts to improve service quality at the XYZ Hospital Pharmacy will directly contribute to long-term success by creating a loyal patient base.

CONCLUSION

Communication and Attitude have a positive and significant impact on Patient Satisfaction at the XYZ Hospital Pharmacy. If the communication by the pharmacy staff and their attitude improves, patient satisfaction will also increase. This shows that effective communication and a friendly attitude from the pharmacy staff play a major role in enhancing patient satisfaction.

Service Promptness has a positive and significant effect on Patient Satisfaction at the XYZ Hospital Pharmacy. When the timeliness of service delivery improves, patient satisfaction also rises. Patients are more likely to be satisfied with services that are quick and efficient.

Medicine Supply has a positive and significant impact on Patient Satisfaction at the XYZ Hospital Pharmacy. When the availability of medications is guaranteed and meets the patients' needs, their satisfaction levels increase. Timely and adequate provision of medications is crucial to support patient satisfaction.

Pharmacy Environment has a positive and significant influence on Patient Satisfaction at the XYZ Hospital Pharmacy. When the pharmacy environment, including cleanliness and comfort, improves, patient satisfaction increases as well. Patients are more satisfied in a clean, comfortable, and well-organized pharmacy environment.

Price has a positive and significant impact on Patient Satisfaction at the XYZ Hospital Pharmacy. When medication prices are considered reasonable and affordable for the patients, their satisfaction also improves. Transparent and affordable pricing will contribute to higher patient satisfaction.

Patient Satisfaction has a positive and significant effect on Patient Loyalty at the XYZ Hospital Pharmacy. As patient satisfaction increases, so does patient loyalty. Satisfied patients are more likely to return to the same pharmacy and recommend its services to others.

This study provides important insights for the development of pharmacy services in hospitals, particularly in enhancing patient satisfaction at the XYZ Hospital Pharmacy. Pharmacy management should focus on improving staff communication and attitude, service promptness, medication availability, the pharmacy environment, and fair pricing to enhance patient satisfaction. Additionally, further research is needed to explore other factors that may directly influence patient loyalty.

The study finds that co`mmunication and staff attitude, service promptness, medication supply, pharmacy environment, and price all have positive effects on patient satisfaction, which is consistent with previous research. Moreover, patient satisfaction significantly influences patient loyalty. These findings highlight the importance of considering various factors that affect patient satisfaction and loyalty when developing pharmacy services in hospitals.

The empirical model of this research shows substantial predictive power (R^2) and significant predictive relevance (Q^2) for Patient Satisfaction as the dependent variable. In this model, all paths from the factors of communication and attitude, service promptness, medication supply, environment, and price to patient satisfaction exhibit a strong effect, indicating that these variables are sufficient to predict patient satisfaction at the XYZ Hospital Pharmacy. These results suggest that the model has adequate predictive ability to forecast patient satisfaction and its impact on patient loyalty.

A new contribution of this study is emphasizing the importance of staff communication and attitude and the pharmacy environment as key factors influencing patient satisfaction. Patient satisfaction refers to the overall experience patients receive from the pharmacy services. In this model, all key factors studied show substantial prediction accuracy (R^2) and significant predictive relevance (Q^2). Therefore, it can be concluded that the five factors studied can adequately predict patient satisfaction. This research model is recommended to be replicated and further tested on larger and more diverse patient populations in future studies.

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