

Association Between Pharmacy Staff Communication Interaction Quality and Outpatient Satisfaction at 'Aisyiyah Bojonegoro Hospital, East Java, Indonesia

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ABSTRACT

Background: The quality of communication interaction between pharmacy staff and patients is a critical component of healthcare service delivery. Effective communication enhances patient understanding, comfort, and trust, which ultimately influence patient satisfaction. A preliminary assessment at 'Aisyiyah Bojonegoro Hospital indicated varying levels of patient satisfaction with pharmaceutical services, suggesting potential gaps in communication quality and service performance.

Subjects and Method: This study aimed to analyze the association between the quality of communication interaction among pharmacy staff and outpatient satisfaction at 'Aisyiyah Bojonegoro Hospital. An analytical quantitative study with a cross-sectional design was conducted. A total of 377 outpatients were selected as the sample. Data were collected using structured questionnaires and analyzed using Spearman rho correlation and multiple logistic regression.

Results: Bivariate analysis showed a significant relationship between communication interaction quality and patient satisfaction ($p < 0.001$; $r = 0.514$), indicating a moderate to strong positive correlation. Multivariate analysis demonstrated that communication quality remained a significant predictor of patient satisfaction ($OR = 0.61$; $95\% CI = 0.39-0.96$; $p = 0.033$), while other variables such as age, education level, gender, and marital status were not statistically significant.

Conclusion: There is a significant association between the quality of communication interaction of pharmacy staff and outpatient satisfaction. Communication quality is a key determinant of patient satisfaction. Therefore, improving interpersonal communication skills through training and continuous evaluation is essential to enhance service quality.

Keywords: communication quality, pharmacy services, outpatient satisfaction

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BACKGROUND

Pharmaceutical services are an integral component of hospital healthcare systems, as regulated in the Indonesian Ministry of Health Regulation No. 72 of 2016 concerning Standards for Pharmaceutical Services in Hospitals (Permenkes, 2016). This regulation emphasizes the importance of improving the quality of pharmaceutical services, which encompass two main components: managerial activities and clinical pharmacy services. Managerial activities include the management of pharmaceutical supplies, medical devices, and consumable medical materials, while clinical pharmacy services focus on direct patient care aimed at improving therapeutic outcomes, minimizing adverse drug reactions, and ensuring patient safety and quality of life.

Effective interaction and communication between pharmacy personnel and patients play a critical role in delivering high-quality pharmaceutical services. Such interactions reflect the ability of pharmacy staff to establish rapport and convey information in a clear, understandable, and patient-centered manner (Pertiwi et al., 2021). Communication is not only essential in clinical practice but also contributes significantly to patient satisfaction. Wilson et al. (2016) highlighted that strong communication skills among healthcare professionals are fundamental for problem-solving and for providing appropriate and professional care to patients.

Patient satisfaction is widely recognized as a key indicator of healthcare quality. Hospitals are required to continuously assess and monitor patient satisfaction as a basis for quality improvement initiatives (Gunawan & Zainaro, 2019). One commonly used framework to evaluate service quality is SERVQUAL, which measures the gap between patient expectations and perceived service performance. In healthcare settings, consistent and high-quality interactions between healthcare providers and patients are crucial in shaping

patient satisfaction and ensuring adherence to established service standards.

Preliminary data from 'Aisiyiyah Bojonegoro Hospital indicate fluctuations in patient satisfaction with pharmaceutical services over time. In July 2024, 28.21% of patients reported being very satisfied, 67.31% satisfied, and 4.51% less satisfied, with no reports of dissatisfaction. In August 2024, satisfaction slightly declined, with only 23.72% reporting being very satisfied and 10.92% reporting being less satisfied. However, a substantial increase was observed in September 2024, where 79.33% of patients reported being very satisfied. These variations suggest inconsistencies in service quality that warrant further investigation.

From a theoretical perspective, patient satisfaction can be explained using the disconfirmation of expectations theory, which posits that satisfaction is determined by the comparison between patients' expectations prior to receiving services and their actual experiences afterward (Pasianus & Kana, 2022). High levels of satisfaction contribute to the development of patient trust and loyalty toward healthcare institutions. Conversely, dissatisfaction may lead to negative consequences, including reduced patient visits, decreased hospital revenue, and deterioration of institutional reputation due to negative word-of-mouth (Yunanda et al., 2024). Several factors have been identified as influencing patient satisfaction, including long waiting times, unfriendly service, delays in medication dispensing, inadequate facilities, and poor coordination among healthcare providers (Al-Sakkaf et al., 2024).

'Aisiyiyah Bojonegoro Hospital, established in 1973 and later developed into a maternal and child hospital in 1996, aspires to become a professional and Islamic-based healthcare institution. The hospital continuously strives to deliver high-quality services by prioritizing patient safety, providing

adequate facilities, and employing competent healthcare personnel. The pharmacy installation serves as a functional unit responsible for organizing and delivering pharmaceutical services within the hospital.

Despite the essential role of pharmaceutical services, limited evidence is available regarding how the quality of communication interactions among pharmacy personnel influences patient satisfaction, particularly in outpatient settings. Therefore, this study aims to analyze the relationship between the quality of communication interactions of pharmacy staff and outpatient satisfaction at 'Aisyiyah Bojonegoro Hospital. Specifically, this study seeks to (1) assess the quality of communication interactions among pharmacy personnel, (2) measure patient satisfaction with outpatient pharmacy services, and (3) examine the effect of communication interaction quality on patient satisfaction. This study also tests the hypothesis that there is a significant relationship between communication interactions of pharmacy staff and patient satisfaction.

SUBJECTS AND METHOD

1. Study Design

This study employed a quantitative approach with an observational analytic design using a cross-sectional method. The study aimed to examine the relationship between the quality of communication interactions among pharmacy personnel (independent variable) and outpatient satisfaction (dependent variable) at 'Aisyiyah Bojonegoro Hospital. Data were collected at a single point in time for each respondent without follow-up. The study was conducted from September 2024 to May 2025 at the outpatient pharmacy unit of 'Aisyiyah Bojonegoro Hospital, East Java, Indonesia.

2. Population and Sample

The study population consisted of all outpatient visits at 'Aisyiyah Bojonegoro Hospital

during May–June 2024, totaling 6,697 patients. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in 377 respondents. A simple random sampling technique was applied, ensuring that each member of the population had an equal probability of being selected.

3. Inclusion Criteria

Inclusion criteria were: (1) patients or patients' family members aged 15–60 years, (2) ability to communicate, read, and write, and (3) willingness to participate by completing the questionnaire.

4. Exclusion Criteria

Exclusion criteria included: (1) respondents who did not complete the questionnaire fully, and (2) outpatients who did not receive pharmacy services.

5. Study Variables

This study involved two main variables. The independent variable was the quality of communication interactions among pharmacy personnel, while the dependent variable was patient satisfaction. The quality of communication interactions was assessed using five indicators: openness, supportive attitude, positive attitude, empathy, and equality. Patient satisfaction was measured using five indicators: service timeliness, staff friendliness, staff knowledge, adequacy of services, and professional appearance

6. Operational Definition

The quality of communication interactions refers to the ability of pharmacy personnel to clearly convey information, actively listen to patients' concerns, and demonstrate empathy during service delivery.

Patient satisfaction refers to patients' perceptions of the quality of services received, particularly in terms of service timeliness and staff friendliness.

7. Instrument

The research instrument was a structured questionnaire using a 4-point Likert scale. The communication interaction items were

adapted from DeVito (2011), covering openness, supportive attitude, positive attitude, empathy, and equality. Patient satisfaction items were based on the SERVQUAL dimensions proposed by Parasuraman and Zeithaml (1988), including service timeliness, staff friendliness, staff knowledge, adequacy of services, and professional appearance.

8. Data Analysis

Data analysis was conducted in three stages. First, univariate analysis was performed to describe the frequency distribution and characteristics of respondents. Second, bivariate analysis was conducted using the Spearman rho test, a non-parametric correlation test suitable for ordinal data, to examine the relationship between variables. Correlation coefficients were interpreted as follows: very weak (0.00–0.20), weak (0.21–0.40), moderate (0.41–0.70), and strong (0.71–1.00). Third, multivariate analysis was performed using ordinal logistic regression to assess the effect of each communication interaction indicator (openness, supportive attitude, positive attitude, empathy, and equality) on patient satisfaction levels. The results were presented as odds ratios (ORs), 95% confidence intervals (CIs), and p-values, with statistical significance set at $p < 0.05$.

9. Research Ethics

This study received ethical approval from the Ethics Committee of 'Aisyiyah Bojonegoro Hospital (No. 002/KE.RSA/2025). All respondents were provided with informed consent and received a clear explanation of the study objectives and benefits prior to participation. The researchers ensured anonymity and confidentiality of all collected data throughout the study process.

RESULTS

1. Sample Characteristics

Table 1 presents the frequency distribution of respondent characteristics. The majority of respondents were aged 26–35 years (29.7%), while the smallest proportion was in the 46–60 years age group (19.9%). In terms of educational level, most respondents had no formal education (26.0%), followed by junior high school graduates (22.3%) and senior high school graduates (19.4%). The smallest proportion was categorized as “others” (5.2%). Based on gender, female respondents accounted for a slightly higher proportion (53.9%) compared to males (46.1%). Regarding marital status, most respondents were married (61.3%), while 38.7% were unmarried.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Age		
≤ 35 years	210	55.7
≥ 36 years	167	44.3
Educational Level		
≤ Senior high school	337	89.4
Higher education	40	10.6
Gender		
Female	203	53.9
Male	174	46.1
Marital Status		
Married	231	61.3
Unmarried	146	38.7

2. Bivariate Analysis

The cross-tabulation results in Table 2 show that the majority of respondents (55.2%) perceived the quality of communication interactions as good, and most patients (61.3%) reported being satisfied with the

services. However, the Chi-square test indicated that there was no statistically significant association between communication quality and patient satisfaction ($p = 0.858$; $p > 0.05$).

Table 2. Cross-tabulation of Communication Interaction Quality and Outpatient Satisfaction at ‘Aisyiyah Bojonegoro Hospital

Communication Interaction Quality	Moderately Satisfied n (%)	Satisfied n (%)	r	p
Very poor	0 (0.0)	1 (0.3)	0.62	<0.001
Poor	0 (0.0)	0 (0.0)		
Good	50 (13.3)	91 (24.1)		
Very good	27 (7.1)	45 (11.9)		

Further analysis using the Spearman rho test (Table 3) revealed a significant relationship between communication quality and outpatient satisfaction ($p < 0.001$). The

correlation coefficient ($r = 0.618$) indicates a strong and positive relationship, suggesting that better communication quality is associated with higher patient satisfaction.

Table 3. Logistic Regression of Respondent Characteristics and Communication Quality on Patient Satisfaction

Variable	Category (Ref = Low)	OR	95% CI (Lower–Upper)	p-value
Communication quality	Appropriate vs Low	0.99	0.00 – 8.21	0.261
	Moderate vs Low	0.61	0.39 – 0.96	0.033*
Age	≤ 35 years (Ref)	1.00	—	—
	≥ 36 years	0.79	0.57 – 1.10	0.164
Educational level	≤ Senior high school (Ref)	1.00	—	—
	Higher education	0.97	0.75 – 1.27	0.836
Gender	Female (Ref)	1.00	—	—
	Male	0.92	0.54 – 1.56	0.747
Marital status	Married (Ref)	1.00	—	—
	Unmarried	1.11	0.58 – 2.11	0.758

The results of ordinal logistic regression are presented in Table 3. The findings indicate that the “moderate” category of communication quality was significantly associated with patient satisfaction (OR = 0.61; 95% CI: 0.39–0.96; $p = 0.033$). In contrast, other variables—including age, educational level, gender, and marital status—were not significantly associated with patient satisfaction ($p > 0.05$).

DISCUSSION

Patient satisfaction is a key indicator in assessing the quality of healthcare services, reflecting the comparison between patients’ expectations and the services they receive. Previous studies have shown that satisfaction is closely related to how well healthcare services meet patients’ expectations, needs, and preferences (Gunawan & Zainaro, 2019).

In addition, satisfaction is influenced by direct service experiences, including physical facilities, healthcare providers' attitudes, service timeliness, and clarity of information (Siregar, 2025).

The findings of this study indicate that although most patients reported being satisfied, a proportion of respondents still fell into the "moderately satisfied" and "dissatisfied" categories. This condition may be explained by several challenges identified in pharmaceutical services, such as long waiting times, limited information regarding medication use, and variability in staff attitudes. These issues may reduce the quality of patient experience and highlight the need for service improvement.

The results of this study are consistent with previous research by Surasdiman et al. (2019), which demonstrated that service quality has a positive effect on patient satisfaction, accounting for 58% of its variance. Similarly, Hermanto (2019) emphasized that patient satisfaction is influenced by communication skills, accuracy of information, and interpersonal attitudes of healthcare providers. Effective, empathetic, and patient-centered communication enhances patient comfort and contributes significantly to satisfaction levels. Furthermore, Syahida (2020) highlighted that interactions between healthcare providers and patients represent a central component of healthcare experiences, where communication quality plays a crucial role in shaping patient perceptions of service quality.

In the context of pharmaceutical services, communication quality includes clear explanations of medication use, polite behavior, responsiveness to patient inquiries, and the ability to listen actively to patient concerns. The findings of this study confirm that better communication interactions among pharmacy staff are associated with higher levels of outpatient satisfaction. When communication meets or exceeds patient expectations,

patients feel valued, respected, and well cared for during the service process. This is consistent with the concept of expected and perceived service, where satisfaction is achieved when the delivered service matches or exceeds expectations. Conversely, unmet expectations may lead to lower satisfaction levels, as also supported by Ameliah et al. (2023), who found that interaction quality significantly influences patient satisfaction in healthcare settings.

The results of the Spearman rho analysis further strengthen the evidence that communication quality among pharmacy personnel plays a significant role in determining patient satisfaction. These findings imply that healthcare institutions, particularly hospitals, should prioritize improving interpersonal communication competencies among pharmacy staff through structured training programs, continuous supervision, and regular performance evaluations. Strengthening communication skills not only enhances service quality but also fosters positive patient experiences and long-term trust in healthcare services.

However, this study has several limitations that should be considered when interpreting the findings. The use of a cross-sectional design limits the ability to establish causal relationships and only reflects conditions at a single point in time. In addition, the data were based on patients' self-reported perceptions, which may introduce response bias. Furthermore, the study was conducted in a single hospital, which may limit the generalizability of the findings to other healthcare settings with different characteristics.

Considering these limitations, future research is recommended to adopt longitudinal designs to better capture changes in communication and patient satisfaction over time. Expanding the study to multiple hospitals or healthcare facilities would improve the generalizability of the results.

Moreover, combining quantitative and qualitative approaches, such as in-depth interviews, may provide a more comprehensive understanding of factors influencing patient satisfaction. Future studies are also encouraged to include additional variables, such as facility quality, queue management systems, and medication availability, to obtain a more holistic perspective on the determinants of patient satisfaction.

AUTHOR CONTRIBUTION

All authors made significant contributions to data analysis, interpretation of results, and the preparation of the final manuscript. The authors were actively involved in every stage of the research process, including problem formulation, data collection, statistical analysis, and the writing and finalization of the thesis document.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this study. The entire research process was conducted independently without any influence from external parties that could affect the study results.

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