

Original Article

Patient Satisfaction with Outpatient Pharmaceutical Services Under the National Health Insurance Scheme in Indonesia: A Cross-Sectional Study



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ABSTRACT

Background: The utilization of Indonesia's National Health Insurance Scheme has increased. However, evidence on patient satisfaction with pharmaceutical services under national health insurance schemes in low- and middle-income countries, particularly using the SERVQUAL framework, remains limited. This gap is important, as Indonesia's National Health Insurance Scheme patient characteristics may shape perceptions of service quality and inform targeted service improvement strategies. This study aimed to analyze the relationship between Indonesia's National Health Insurance Scheme patient characteristics and satisfaction with outpatient pharmaceutical services.

Methods: A quantitative cross-sectional study was conducted and reported in accordance with the STROBE guidelines. The study involved Indonesia's National Health Insurance Scheme outpatients at the Pharmacy Installation of Dr. Suyoto Hospital, Jakarta, in 2023, who met the inclusion criteria (aged ≥ 18 years, received pharmaceutical services, and provided informed consent). Data were collected using a SERVQUAL questionnaire assessing five dimensions of service quality: tangible, reliability, responsiveness, assurance, and empathy. Patient characteristics (gender, age, education, and occupation) were analyzed as independent variables, while satisfaction served as the dependent variable. Associations were examined using Spearman's rank correlation test.

Results: Significant and strong correlations were found between patient satisfaction and age ($\rho = 0.71$; $p < 0.001$) as well as education level ($\rho = 0.70$; $p < 0.001$). Gender and occupation demonstrated statistically significant but weak associations with satisfaction.

Conclusion: Satisfaction with outpatient pharmaceutical services among Indonesia's National Health Insurance Scheme patients is significantly associated with specific demographic characteristics, particularly age and education. These findings underscore the importance of patient-centered service improvement strategies, with an emphasis on enhancing responsiveness and pharmaceutical communication to improve the quality of Indonesia's National Health Insurance Scheme services sustainably.

Keywords: Hospital; National Health Insurance; Outpatients; Pharmaceutical Services; Patient Satisfaction.

Implications for Practice:

- Strengthening patient-centered pharmaceutical communication and counseling in outpatient pharmacy services can improve patient satisfaction, particularly by addressing variations in expectations related to age and educational background.
- Health policy and hospital management should prioritize system-level improvements in pharmaceutical service reliability and responsiveness, including medicine availability, streamlined service workflows, and clear medication-use information.
- In resource-constrained environments commonly found in low- and middle-income countries, optimizing pharmacy service processes and strengthening communication competencies among

Introduction

Pharmaceutical services are activities related to the manufacture, quality control of pharmaceutical preparations, management of pharmaceutical supplies (planning, procurement, receipt, storage, distribution, recording, reporting, destruction/disposal), prescription services, drug information services, counseling, pharmacy clinics in the room (Dreischulte et al., 2022; Ogbuagu et al., 2023). Pharmaceutical services in hospitals aim to improve the quality of health services, ensure legal certainty for pharmaceutical personnel and protect patients and the public from irrational use of drugs in the context of patient safety (Jayanto et al., 2024).

Patient satisfaction is one of the key indicators in evaluating the quality of healthcare services, including hospital pharmaceutical services. Globally, numerous studies have demonstrated that the quality of pharmacy services plays an important role in improving medication adherence, patient safety, and the sustainability of health systems. In Saudi Arabia, patient satisfaction with outpatient pharmaceutical services has generally been reported with a mean score of 2.50 out of a

maximum score of 3 (Salamatullah et al., 2021).

However, there is more variation in the factors and trends of patient satisfaction with pharmaceutical services in regional and low- and middle-income country (LMIC) contexts (Setiawan et al., 2022). Pharmaceutical services are often subject to systemic pressures due to high patient volumes, limited public funding, and unequal access to healthcare services. These conditions make the evaluation of patient satisfaction not merely a measure of individual perception, but also a reflection of overall health system performance (Pettifor & Saloojee, 2025; Phelan et al., 2022; Sriram et al., 2024).

Several previous studies have examined patient satisfaction with pharmaceutical services by highlighting various determinants of service quality. A study by Gül et al. (2023) demonstrated that communication and attitude of pharmacy personnel ($\beta = 0.22$; $t = 3.90$), availability of medicines ($\beta = 0.43$; $t = 7.62$), and the pharmacy environment ($\beta = 0.26$; $t = 4.23$) had positive and significant effects on patient satisfaction in community pharmacies, while service accuracy did not show a significant effect ($\beta = 0.07$; $t = 1.18$). These findings indicate that medicine availability is the most dominant factor influencing patient satisfaction. Furthermore, the study confirmed that patient satisfaction has a very strong influence on patient loyalty toward community pharmacies ($\beta = 0.72$; $t = 11.24$).

Similar findings were reported in a study by Kashfi et al. (2022) in Iran, which revealed a statistically significant negative gap between patients' expectations and perceptions of pharmaceutical service quality across all measured dimensions ($p < 0.05$). The largest gap was observed in the access dimension ($G = -0.44 \pm 1.15$), while the smallest gap was found in the reliability dimension ($G = -0.21 \pm 1.30$). These results

suggest that, although pharmaceutical services are being delivered, patient expectations regarding service quality have not yet been fully met.

Meanwhile, a study by [Al Zabadi et al. \(2023\)](#) conducted in public and private hospitals in Palestine found that overall patient satisfaction with pharmaceutical services was moderate, with a mean score of 3.24 out of 5. The study also identified statistically significant differences in patient satisfaction based on service hours, particularly between morning and evening shifts ($p = 0.009$), with higher satisfaction reported during the morning shift. These findings indicate that operational factors and service context play an important role in shaping patient experiences and satisfaction with pharmaceutical services.

Although numerous studies have examined patient satisfaction with pharmaceutical services across various healthcare facilities, the relationship between patient characteristics and specific dimensions of outpatient pharmaceutical service quality, particularly within national health insurance systems in low- and middle-income countries, remains limited explored. Moreover, SERVQUAL-based studies generally assess the performance of individual service quality dimensions in isolation, without systematically integrating patients' sociodemographic factors that shape service expectations and perceptions.

Theoretically, this study is grounded in the SERVQUAL model, which posits that customer satisfaction is formed through the gap between expectations and perceptions of service quality. This model assesses service quality across five key dimensions: tangible, reliability, responsiveness, assurance, and empathy. Each SERVQUAL dimension contributes differently to the formation of patient satisfaction ([Karume et al., 2025](#)). The dimensions of reliability and responsiveness are directly related to service efficiency and medication accuracy,

which greatly determine the patient experience in outpatient services. The dimensions of assurance and empathy play a role in building trust, a sense of security, and a therapeutic relationship between patients and pharmaceutical staff, while the tangible dimension influences patients' initial perceptions of the professionalism and comfort of the service. Patient satisfaction is thus understood as the cumulative result of interactions between these dimensions of service quality, the influence of which may vary according to the socio-demographic characteristics of patients and the context of the service system ([Amos & Aubrey, 2024](#)).

In LMIC contexts such as Indonesia, a conceptual understanding of the relationship between service quality dimensions and patient satisfaction has important implications for improving the quality and policy of health services. SERVQUAL-based evaluations linked to patient characteristics enable the identification of the most crucial service dimensions to be improved under resource constraints and high service loads. Thus, this study not only contributes to the development of patient satisfaction literature but also provides an empirical basis for the formulation of more targeted, equitable, and patient-centred pharmaceutical service quality improvement policies within the framework of national health insurance.

This study aims to determine the level of satisfaction of Indonesia's National Health Insurance Scheme participants with pharmaceutical services covering five dimensions of service quality, including *tangible, reliability, responsiveness, assurance, empathy* and to determine the relationship between respondent characteristics (gender, age, education and occupation) and the level of satisfaction with pharmaceutical services at the outpatient pharmacy installation.

Methods

Study Design

This study employed a quantitative cross-sectional design aimed at analyzing the relationship between patient characteristics and the level of satisfaction with outpatient pharmaceutical services. Data were collected at a single point in time without any intervention involving the study participants. The reporting of this study was prepared in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for observational studies to ensure transparency, completeness, and consistency in the reporting of the study methodology and results.

Participants

The population in this study is all Indonesian National Health Insurance Scheme participants who are treated at Dr. Suyoto and received pharmaceutical services at the pharmacy installation of dr. Suyoto during the month of August 2023. The number of visits by Indonesia's National Health Insurance Scheme patients in the previous month was 1,170 outpatients which were used as research centers. The sample in this study is an outpatient Indonesia's National Health Insurance Scheme patient in the pharmaceutical service of dr. Suyoto for the August 2023 period.

The sample determination technique in this study uses *the accidental sampling* technique, which is a data analysis technique which is sampling by determining respondents who happen to be in a place that is in accordance with the research site with a record of meeting the existing inclusion criteria. To determine the number of samples needed in this study, use the slovin formula (298 patients)

The initial sample size was calculated using Slovin's formula based on the number

of Indonesia's National Health Insurance Scheme outpatient visits in the previous month ($N = 1,170$), with a 5% margin of error, resulting in a minimum required sample of 298 respondents. However, during the data collection process, not all eligible patients agreed to participate or completed the questionnaire. Of the 298 patients approached, 127 were excluded due to refusal to participate, incomplete questionnaire responses, or failure to meet the inclusion criteria. Consequently, a total of 171 respondents completed the questionnaire in full and were included in the final analysis.

The inclusion criteria were: (1) Indonesia's National Health Insurance Scheme outpatient participants, (2) aged ≥ 18 years, (3) having received medication services at the Outpatient Pharmacy Installation, and (4) willingness to participate by providing informed consent. The exclusion criteria were: (1) patients who did not complete the questionnaire, (2) patients with communication or cognitive impairments that hindered questionnaire completion, and (3) questionnaires with incomplete data.

Instruments

Validity test is a measure of the validity or correctness of an instrument. Validity testing refers to the extent to which an instrument can perform a function. This validity test uses a statistical test with *the product-moment Pearson correlation* method. The number of respondents required to conduct the validity test is usually 30. According to [Prakoeswa et al. \(2022\)](#) the r , the table for 30 respondents with a level of 5% is 0.361. If the result r is calculated $> r$ table, then the score of each type of question is significant, so that the instrument is declared valid.

A reliability test is an illustration of how far measurements obtained using instruments (including questionnaires), if

repeated, will produce the same or consistent results (Kennedy, 2022; Kyle et al., 2026). The reliability test in this study uses *Cronbach's Alpha*; if the value of *Cronbach's Alpha* is > 0.6 , then it is reliable.

Intervention (Optional)

The research instrument used in this study was a patient satisfaction questionnaire developed based on the SERVQUAL model. This instrument measures the quality of pharmaceutical services across five core dimensions: tangible, reliability, responsiveness, assurance, and empathy. The questionnaire consisted of 17 items tailored to the context of outpatient pharmaceutical services in a hospital setting (Table 1).

The SERVQUAL instrument underwent content adaptation to ensure its suitability for the local context of pharmaceutical services in Indonesia. The questionnaire was prepared in the Indonesian language, with careful consideration of linguistic clarity and ease of comprehension for respondents. Responses were scored using a five-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Total scores and dimension-specific scores were calculated based on the number of items within each dimension.

Instrument validity was assessed in a pilot test involving 30 respondents using Pearson's product-moment correlation. All items demonstrated correlation coefficients exceeding the critical r -value ($r > 0.361$) and were therefore considered valid. Reliability testing was conducted using Cronbach's alpha, yielding a value of 0.713, which indicates good internal consistency. Validity and reliability were also examined at the dimension level to ensure consistent measurement across each SERVQUAL construct.

Table 1. Patient Satisfaction Questionnaire for Outpatient Pharmaceutical Services (Indonesia's National Health Insurance Scheme Participants)

SERVQUAL Dimension	Indicators
Reliability	<p>Prescribed drugs are always there.</p> <p>The service provided by the officers was very fast</p> <p>Officers are able to provide drug information using language that is easy for patients to understand.</p>
Responsiveness	<p>Fast and responsive officers to patient complaints related to drugs.</p> <p>The officer gave a briefing on how to take the medicine properly.</p> <p>The speed of drug service in hospitals is related to finished drugs ≤ 30 minutes.</p> <p>The speed of drug service in hospitals related to concocted drugs is ≤ 60 minutes.</p>
Assurance	<p>The officer carefully prepares the medicine.</p> <p>The officer was able to answer the patient's questions well</p>
Empathy	<p>The attendants serve in a friendly and polite manner.</p> <p>The staff patiently listens to the patient's questions and complaints.</p> <p>Officers provide health service information without having to be asked by the patient.</p> <p>Officers help solve patient problems.</p>
Tangible	<p>The design of the patient waiting room of the outpatient pharmacy installation looks clean and attractive.</p> <p>Pharmaceutical installation locations are within easy reach.</p> <p>Convenient medicine dispensing room.</p> <p>Groomed-looking officers.</p>

Data Collection

Data collection was conducted in August 2023 at the Outpatient Pharmacy Installation of Dr. Suyoto Hospital, Jakarta, immediately after patients received pharmaceutical services. The data were collected onsite to ensure that respondents

evaluated their service experience while it was still recent and accurately recalled.

Data collection was carried out by the principal investigator and two research assistants with formal educational backgrounds in pharmacy. Prior to data collection, all data collectors received structured training covering the study objectives, inclusion and exclusion criteria, ethical principles, informed consent procedures, standardized instructions for questionnaire administration, and techniques for assisting respondents without influencing their responses.

To ensure data quality control, several procedures were implemented. First, each completed questionnaire was checked on-site for completeness and clarity before being accepted. Second, data entry was performed using a double-entry method by two independent researchers to minimize input errors. Third, consistency checks and range validation were conducted to identify outliers or implausible values. Questionnaires with incomplete or inconsistent responses were excluded from the final analysis.

Missing data were handled using a listwise deletion approach, whereby only questionnaires with complete data across all variables were included in the analysis. This approach was considered appropriate given the relatively small proportion of missing data and the non-parametric nature of the statistical analyses.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics version 26. This study employed several types of analysis, including:

Gap analysis is the value of the gap that occurs between patient perception and patient expectations for the performance of existing drug information services.

Gap = average perception – average expectation

Ideally, the value of the gap between performance and expectations is zero. A negative number will show that customer expectations are not met; the greater the negative value of a gap in a service dimension, the greater the priority of improving services from that dimension. A positive number in the gap will indicate that the customer's expectations have been met

The *Importance and Performance Analysis* (IPA) method is intended to measure the relationship between the priority of improving the quality of products/services, also known as *quadrant analysis*, and the perception of IPA consumers, which has been generally accepted and used in various studies because of the ease of application and the display of analysis results that facilitate performance improvement proposals.

Descriptive analysis to get an overview of respondent characteristics regarding respondents' answers to the dimension of patient satisfaction. The characteristics of the respondents analyzed included age, gender, education level and occupation, the results of which were in the form of percentages and tables.

The statistical analysis employed a non-parametric approach using Spearman's rank correlation test, which is appropriate for examining the presence of an association between two ordinal-scale (ranked) variables, such as the relationship between patient characteristics (gender, age, education level, and occupation) and patient satisfaction. Prior to inferential analysis, data distribution was assessed using the Kolmogorov–Smirnov normality test, which indicated that the data were not normally distributed; therefore, a non-parametric test was selected.

Correlation results were reported as Spearman's correlation coefficient (ρ),

along with the 95% confidence interval (95% CI) and the statistical significance value (p-value). Effect size interpretation was based on the strength of correlation criteria: 0.00–0.25 (very weak), 0.26–0.50 (weak to moderate), 0.51–0.75 (strong), and 0.76–1.00 (very strong). Confidence intervals and correlation effect sizes were calculated using an online statistical calculator as recommended by the reviewer.

Ethical Considerations

This study received ethical approval from the Health Research Ethics Committee of the Faculty of Health Science, Universitas Esa Unggul, Jakarta, Indonesia, with approval Number: 0923-07.033/DPKE-KEP/FINAL-EA/UEU/VII/2023. All research procedures were conducted in accordance with the principles of health research ethics and the Declaration of Helsinki.

Prior to data collection, all potential participants were provided with comprehensive information regarding the study objectives, procedures, benefits, and potential risks. Participation was voluntary, and respondents were required to sign a written informed consent form before completing the questionnaire. The confidentiality and anonymity of respondents' data were strictly maintained, and the data were used solely for research purposes.

Results

Table 2. Characteristics of patients

Characteristic	Category	n (%)
Gender	Men – men	82(48%)
	Woman	89(52%)
Age	Teenager (18 - 25 years old)	45(26%)
	Adults (>25 - 45 years)	50(29%)
	Elderly (>45 - 60 years old)	76(45%)
Education	Elementary School	6(4%)

Characteristic	Category	n (%)
	Junior	7(4%)
	High School/Vocational School	74 (43%)
	College	84 (49%)
Occupation	Student	6 (4%)
	TNI/Polri	4 (2%)
	Self employed	16 (9%)
	PNS	43 (25%)
	Private Employees	44 (26%)
	Housewives	37 (22%)
	Miscellaneous	21 (12%)
Total		171 (100%)

Table 2 indicates that the respondent profile was broadly balanced by gender, with outpatient pharmaceutical services predominantly utilized by older adults. The study population was characterized by a relatively high educational attainment and a diverse employment background, suggesting a mix of economically active and non-working groups. Overall, these characteristics reflect a patient population with potentially varied expectations and evaluative perspectives, which may shape their perceptions of outpatient pharmaceutical service quality under the national health insurance scheme.

Table 3. Gap analysis test

Average score	Hope	Fact	Gap
Reliability dimensions	4,00	4,04	-0,04
Dimension of responsiveness	3,97	4,00	-0,03
Warranty dimensions	4,02	4,08	-0,06
The dimension of empathy	3,96	4,00	-0,04
Appearance dimensions	4,18	4,20	-0,02

Table 3 shows that negative gaps were observed across all SERVQUAL dimensions, indicating that perceived pharmaceutical service performance did not fully meet patient expectations. Although the magnitude of the gaps was relatively small, their consistent presence across

dimensions suggests systemic shortcomings in service delivery rather than isolated issues.

Based on **Figure 1**, the Cartesian diagram shows that there are 8 attributes that are in quadrant II, and 9 attributes that are in quadrant III.

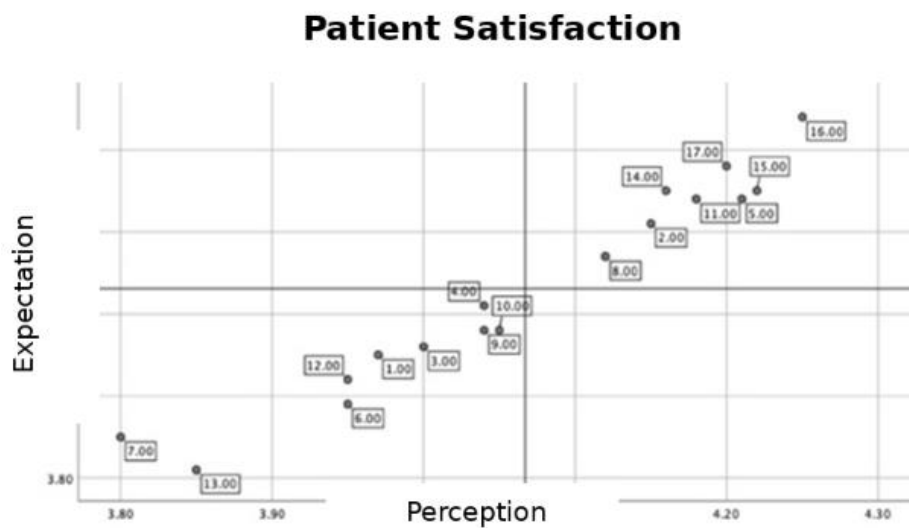


Figure 1. Importance and Performance Analysis (IPA) Test Result

Table 4. Rank Spearman Test

Characteristics of the patient	Spearman Rank Test Results	Satisfaction level
Gender	1. Yield: 0.004 (Related) 2. Correlation value: 0.21 (Very weak relationship)	1. Male: 71% 2. Female: 62%
Age	1. Yield: 0.000 (Relevant) 2. Correlation value: 0.71 (Strong relationship)	1. Teens: 59% 2. Adult: 70% 3. Elderly: 76%
Education	1. Yield: 0.000 (Relevant) 2. Correlation value: 0.70 (Strong relationship)	1. Elementary School: 75% 2. Junior High School: 70% 3. High School: 65% 4. College: 58%
Work	1. Yield: 0.004 (Related) 2. Correlation value: 0.31 (Very weak relationship)	1. Student/Students: 70% 2. International standard Military / Police: 63% 3. Self-employed: 65% 4. Civil servants: 61% 5. Private Employees: 55% 6. Housewives: 73% 7. Others (not working/retired): 75%



Table 4 demonstrates that patient satisfaction with outpatient pharmaceutical services was significantly associated with several patient characteristics, although the strength of these relationships varied. Gender showed a statistically significant but very weak correlation with satisfaction ($\rho = 0.21$), indicating minimal practical influence, despite higher satisfaction observed among male patients compared with females. Age exhibited a strong and significant positive relationship with satisfaction ($\rho = 0.71$), with satisfaction levels increasing progressively from younger to older age groups, suggesting that older patients tend to report greater satisfaction with pharmaceutical services. Similarly, education level showed a strong and significant correlation with satisfaction ($\rho = 0.70$), where patients with lower educational attainment reported higher satisfaction than those with higher education, reflecting differing expectations and critical appraisal of service quality. Occupation was also significantly associated with satisfaction, although the relationship was weak ($\rho = 0.31$), with higher satisfaction reported among non-working, retired, and housewife groups compared with formally employed patients. Overall, these findings indicate that age and education are the most influential demographic factors shaping patient satisfaction, while gender and occupation play a more limited role in influencing perceptions of outpatient pharmaceutical service quality.

Discussion

The gap analysis results revealed negative gaps across all SERVQUAL dimensions, indicating that patients' perceptions of pharmaceutical services did not fully meet their expectations. This pattern is consistent with findings from several international studies conducted in low- and middle-income countries (LMICs),

such as Iran, Palestine, and various Asian and Middle Eastern countries, which reported similar gaps, particularly in the reliability and responsiveness dimensions ([Al Zabadi et al., 2023](#); [Kashfi et al., 2022](#); [Salamatullah et al., 2021](#)). However, within the context of Indonesia's National Health Insurance Scheme, these gaps carry a more complex systemic meaning.

Theoretically, the SERVQUAL model emphasizes that customer satisfaction is formed by the discrepancy between expectations and perceptions ([Jonkisz et al., 2023](#); [Siyum, 2024](#)). Among Indonesia's National Health Insurance Scheme patients, expectations of pharmaceutical services are shaped not only by individual experiences but also by social constructs related to the right to healthcare services guaranteed by the state. Consequently, when medication availability, service speed, or clarity of information is suboptimal, the perceived gaps become more pronounced compared to non-subsidized patient groups. These findings help explain why the reliability dimension often exhibits larger gaps in LMIC settings, where limitations in drug supply chains and high patient volumes represent recurring structural challenges.

The results of the Importance-Performance Analysis (IPA) provide important insights into service areas that should be prioritized for improvement. Several pharmaceutical service attributes were located in the "high priority" quadrant (high importance-low performance), primarily related to service timeliness, medication availability, and clarity of medication-use information. These findings reinforce the gap analysis results and indicate that dissatisfaction among Indonesia's National Health Insurance Scheme patients is not random, but rather concentrated in service aspects that directly affect clinical experience and the efficiency of outpatient visits.

In the LMIC context, these IPA findings reflect the limited capacity of health systems to meet patients' increasingly high expectations. The high volume of Indonesia's National Health Insurance Scheme patient visits, the limited number of pharmaceutical personnel, and operational standards that must align with national financing policies all influence the ability of services to achieve optimal performance. Nevertheless, the IPA also identified several service attributes located in the "maintain performance" quadrant, particularly those related to pharmacists' friendliness, politeness, and empathy. This suggests that despite resource constraints, interpersonal aspects of care remain a key strength in sustaining patient satisfaction.

Conceptually, these findings underscore that in resource-limited settings, service quality improvement does not necessarily require large infrastructure investments, but can instead be directed toward process optimization and strengthening pharmacists' communication competencies. This approach is consistent with the LMIC literature, which emphasizes the importance of low-cost, high-impact interventions in improving healthcare service quality ([Karamagi et al., 2022](#)).

The relationship between gender and patient satisfaction in this study shows a relatively weak pattern, indicating that perceptions of satisfaction with pharmaceutical services are fairly similar between male and female patients. This finding is consistent with)'s study reporting that gender differences do not consistently predict patient satisfaction, particularly in pharmaceutical services where procedures are standardized and highly structured.

The relationship between age and patient satisfaction demonstrated a strong association. Elderly patients tended to report higher levels of satisfaction compared with patients of working age.

Theoretically, this can be explained by differences in expectations and service experiences. Older patients generally place greater value on empathy, patience, and clarity of communication, which in this study were SERVQUAL dimensions with relatively better performance. In contrast, working-age patients are often more sensitive to waiting time and service efficiency, making them more prone to dissatisfaction when services do not meet their expectations. These findings are consistent with studies from [Ferreira et al. \(2023\)](#) that have reported a positive correlation between age and patient satisfaction with healthcare services.

The relationship between education level and patient satisfaction observed in this study was strong. Patients with higher educational attainment tended to have greater expectations regarding the quality of information, service speed, and procedural clarity, making them more critical in their evaluation of pharmaceutical services. Conversely, patients with lower levels of education often reported higher satisfaction despite service limitations, likely due to relatively lower baseline expectations. This pattern has also been reported by [Rusnoto et al. \(2019\)](#), who found negative or weak associations between education level and patient satisfaction with pharmacy services.

The relationship between occupation and patient satisfaction observed in this study indicates a statistically significant but relatively weak association, suggesting that employment status plays a limited yet meaningful role in shaping perceptions of outpatient pharmaceutical services. Patients who were not formally employed, such as housewives, retirees, or those in the miscellaneous category, tended to report higher levels of satisfaction compared with formally employed patients. This pattern may be explained by differences in expectations and time sensitivity, as

employed patients often have greater concerns regarding waiting times, service efficiency, and flexibility due to work-related commitments. In contrast, non-working patients may place greater value on interpersonal aspects of care, such as friendliness and empathy, which were identified as service strengths. Similar findings have been reported in previous studies by [Chico et al.](#) (2024), where occupational demands influenced patient expectations and satisfaction with healthcare services.

From an LMIC perspective, the Spearman test findings reinforce the argument that improving patient satisfaction cannot be achieved solely by tailoring services based on patients' demographic characteristics. Instead, systemic improvements in reliability and responsiveness, such as queue management, medicine availability, and clarity of information, have the potential to generate broader impacts across all patient groups. This is consistent with evidence from studies in various LMICs showing that system-based interventions are more effective in enhancing patient satisfaction than individual-focused approaches ([Karamagi et al.](#), 2022).

Overall, the Spearman rank correlation results in this study indicate that although patient characteristics are significantly associated with satisfaction with outpatient pharmaceutical services, their influence is relatively limited. These findings underscore that Indonesia's National Health Insurance Scheme patient satisfaction is primarily determined by the quality and consistency of pharmaceutical services within a resource-constrained health system. Therefore, strategies to improve service quality should prioritize process improvements and strengthening system capacity rather than focusing solely on patient segmentation based on demographic characteristics.

Implications and limitations

The findings of this study have important implications for improving the quality of pharmaceutical services within the national health insurance system. The consistent gaps observed across all SERVQUAL dimensions indicate that efforts to enhance patient satisfaction should focus on systemic service process improvements, particularly in the dimensions of reliability and responsiveness, such as medicine availability, service timeliness, and clarity of medication-use information. These findings support policy approaches that emphasize the optimization of service workflows and the strengthening of pharmacists' communication capacity as realistic and relatively low-cost quality improvement strategies in resource-constrained settings.

Despite its meaningful empirical contributions, this study has several limitations that should be considered when interpreting the findings. The cross-sectional design limits the ability to establish causal relationships between patient characteristics and service satisfaction; therefore, the results should be interpreted as associative rather than causal. In addition, conducting the study at a single hospital means that the findings may reflect specific institutional characteristics and local contexts, thereby limiting their generalizability to other healthcare facilities with different resource availability, patient volumes, and governance structures. The use of accidental sampling may also introduce selection bias, as participating respondents may have different service experiences compared with patients who declined participation or did not complete the questionnaire, potentially affecting sample representativeness and the strength of generalization. Nevertheless, the adequate sample size and the consistency of findings across all SERVQUAL dimensions provide sufficient internal reliability to support the

interpretation of the results within the context of this study.

Relevance to Practice

The findings of this study provide actionable, practical guidance for pharmacists and hospital managers to improve the quality of outpatient pharmaceutical services within the national health insurance system. Given the consistent gaps across all SERVQUAL dimensions, improvement efforts should focus on enhancing reliability and responsiveness through ensuring medicine availability, streamlining prescription service workflows, and strengthening the quality of pharmacists' communication and medication counseling, particularly for older and less-educated patients. From a managerial perspective, optimizing pharmacy workflows, aligning staff schedules with peak outpatient demand, implementing clear service time standards, and using simple queue management systems can improve service efficiency without substantial additional resources. In addition, short, practice-oriented training on communication, empathy, and responsive service, along with integrating patient satisfaction indicators into routine quality assurance and performance evaluation systems, can support sustainable service quality improvement in resource-constrained settings.

Conclusion

This study demonstrates that Indonesia's National Health Insurance Scheme patient satisfaction with outpatient pharmaceutical services remains influenced by gaps between expectations and service performance, particularly in terms of reliability and responsiveness. These findings emphasize that improvements in patient satisfaction are more strongly determined by enhancements in service processes and overall system quality than

by individual patient characteristics. In the context of low- and middle-income countries, pharmaceutical services need to adapt through realistic quality improvement strategies that emphasize efficiency and effective communication. Future research is recommended to involve a broader range of healthcare facilities and adopt longitudinal designs to strengthen the understanding of patient satisfaction dynamics and the impact of service improvement interventions over time.

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CrediT Authorship Contributions Statement

Hermanus Ehe Hurit: Conceptualization, Methodology, Formal Analysis, Supervision, Writing – Review & Editing.

Andini Adinda Putri: Investigation, Data Curation, Resources, Writing – Original Draft.

Nurjannah Bachri: Methodology, Validation, Project Administration, Writing – Review & Editing.

Conflicts of Interest

We, the authors, declare that there are no conflicts of interest related to the research, writing, or publication of this article.

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Supplementary Materials

Supplementary File S1: Research Instrument contains the full questionnaire used for data collection.

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