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BPJS Patient Satisfaction: A Systematic Literature Review on Service Quality, Price, and Facility in Indonesian Hospitals

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ABSTRACT

Background and Aims: Indonesia's 2024-2029 administration prioritizes healthcare quality improvement through BPJS Health, the national health insurer, as part of its Asta Cita President of Indonesia in human capital development agenda. However, declining public trust stems from: (1) bureaucratic claim processes, (2) unaffordable treatment prices, and (3) substandard facilities. This study aims to exploring how service quality, price, and facility affect BPJS patient satisfaction in Indonesian hospitals.
Methods: Using PRISMA 2020, we conducted a qualitative systematic review of Web of Science and Google Scholar articles from 2020-2025 (6 year).
Result: Results demonstrate that service quality, price, and facility affect BPJS patient satisfaction in Indonesian hospitals.
Conclusion: This study's non-empirical nature limits causal inferences, warranting future quantitative validation. Improving these three factors can enhance BPJS patient satisfaction, advancing Indonesia's 2045 Golden goals.

Keywords: BPJS, Service Quality, Price, Facility, Hospital, Indonesia

INTRODUCTION

Under Indonesian Law No. 24 year 2011, the Social Security Administering Body (Badan Penyelenggara Jaminan Sosial/BPJS) operates as a legal entity mandated to implement national social security programs[1]. Comprising BPJS Health and BPJS Employment, this dual-system institution serves as a critical welfare indicator, particularly for assessing healthcare quality standards across the Nusantara region.

The Parakarsa Research Institute (2024) projects BPJS Health's financial insolvency by 2025-2026 due to a 20 trillion IDR deficit, attributing this to: (1) significant healthcare inflation post-pandemic, impacting both public and private insurance sectors; (2) surged healthcare facility utilization during recovery; and (3) inactive participants disproportionately claiming benefits without sustained premium contributions, exacerbating actuarial imbalances[2].

In response to these issues, BPJS Health's President Director, Ali Ghufron Mukti, has categorically refuted insolvency projections, guaranteeing claim settlements through 20253. He emphasized the organization's standardized 15-day payment guarantee for all uncontested claims (i.e., those without disputes or pending requirements) from submission date. Contrary to these assurances, empirical evidence from the East

Java Hospital Association (PERSI) reveals contradictory financial data, documenting approximately IDR 500 billion in delayed BPJS Health claim payments across 12,000 service cases at 439 hospitals in East Java, Indonesia—a direct contradiction to the 15-day processing guarantee[3].

Concurrently, ARSSI Chairman Iing Ichsan Hanafi reported a 20% year-end surge in pending BPJS Health claims from private hospitals[4], corroborated by PERSI's Healthcare Financing Division member Daniel Budi Wibowo, who attributes the growing backlog to recent claim reporting system modifications implemented by BPJS Health[3]. This systematic analysis identifies challenges in Indonesia's national health name it insurance unresolved service quality and cost-effectiveness issues affecting both beneficiaries and healthcare providers nationwide, and further, the probability of inadequate facility standards that frequently fail to support accurate diagnosis or effective treatment for BPJS patients.

Paradoxically, while BPJS represents Indonesia's primary healthcare equalization metric under the national health development framework, systemic implementation gaps persist. The Asta Cita Prabowo as President of Republic Indonesia encompassing human capital development which explicitly includes healthcare improvement - should theoretically enhance this system. This study consequently investigates BPJS patient satisfaction trends as a critical knowledge base for optimizing healthcare human capital development, justifying the urgent need for empirical assessment.

MATERIALS & METHODS

Through a critical synthesis of extant literature, this study delineates the tripartite influence of service quality, price, and facility on satisfaction metrics among BPJS-insured patients across Indonesia's hospital networks.

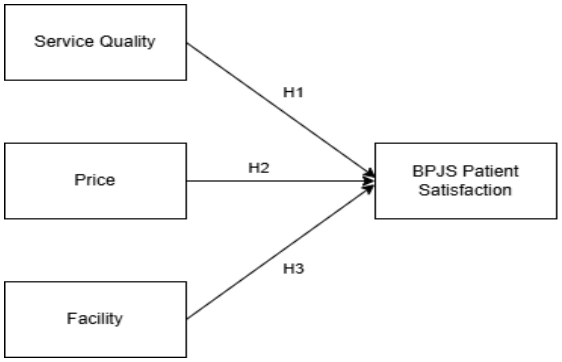

Figure 1. Hypothesize between service quality, price, facility, and BPJS patient satisfaction.

H1: A perceived relationship exists between service quality and BPJS patient satisfaction.

H2: A perceived relationship exists between price and BPJS patient satisfaction.

H3: A perceived relationship exists between facility and BPJS patient satisfaction.

This study employs a qualitative research design through a systematic literature review (SLR) methodology. Following established protocols, SLR constitutes a rigorous process involving systematic identification, evaluation, and synthesis of conceptual and empirical evidence[5]. The review framework adopts the PRISMA 2020 guidelines, utilizing Mendeley Desktop for article retrieval and selection, complemented by VOSviewer for bibliometric network visualization, and JBI assessment as critical appraisal tools. Primary data sources include Web of Science (WoS) and Google Scholar databases. Search strategies incorporated the following keyword combinations in both English and Indonesian: (1) "service quality AND bpjs patient satisfaction"; (2) "price AND bpjs patient satisfaction"; (3) "facility AND bpjs patient satisfaction". The systematic review applied a 6-year inclusion criterion (2020-2025) to all identified literature, prioritizing recent evidence that reflects Indonesia's evolving healthcare landscape under JKN-BPJS implementation. The study selection protocol, documented in Table 1 and Figure 2, strictly complies with PRISMA 2020 reporting standards[6]. This dual-platform approach ensures comprehensive coverage of relevant

literature while maintaining methodological transparency.

Table 1. Articles Database.

Keywords String	Web of Science	Google Scholar
service quality AND bpjs patient satisfaction*	3	2.710
price AND bpjs patient satisfaction*	14	806
facility AND bpjs patient satisfaction*	7	2.180
Total	**24**	**5.696**

Note: The asterisk symbol (*) at the end of every second word is used to ensure that the different diction variations across articles are captured.

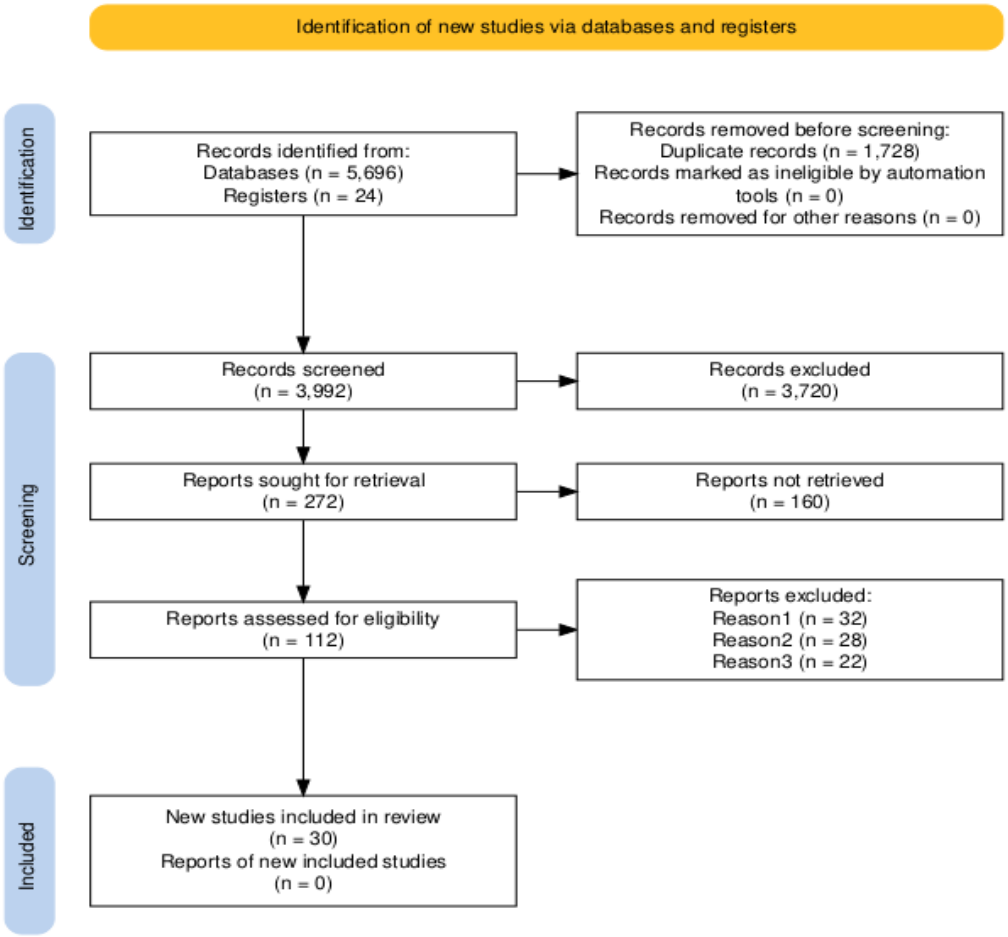

Figure 2. Data retrieval and selection of articles.

Figure 2 presents the final curated dataset of 30 articles, achieving a sample size sufficient for valid theoretical saturation and analytical generalizability[7,8]. The subsequent bibliometric network analysis, visualized in Figure 3 through VOSviewer's clustering algorithms, reveals key conceptual relationships within the literature corpus.

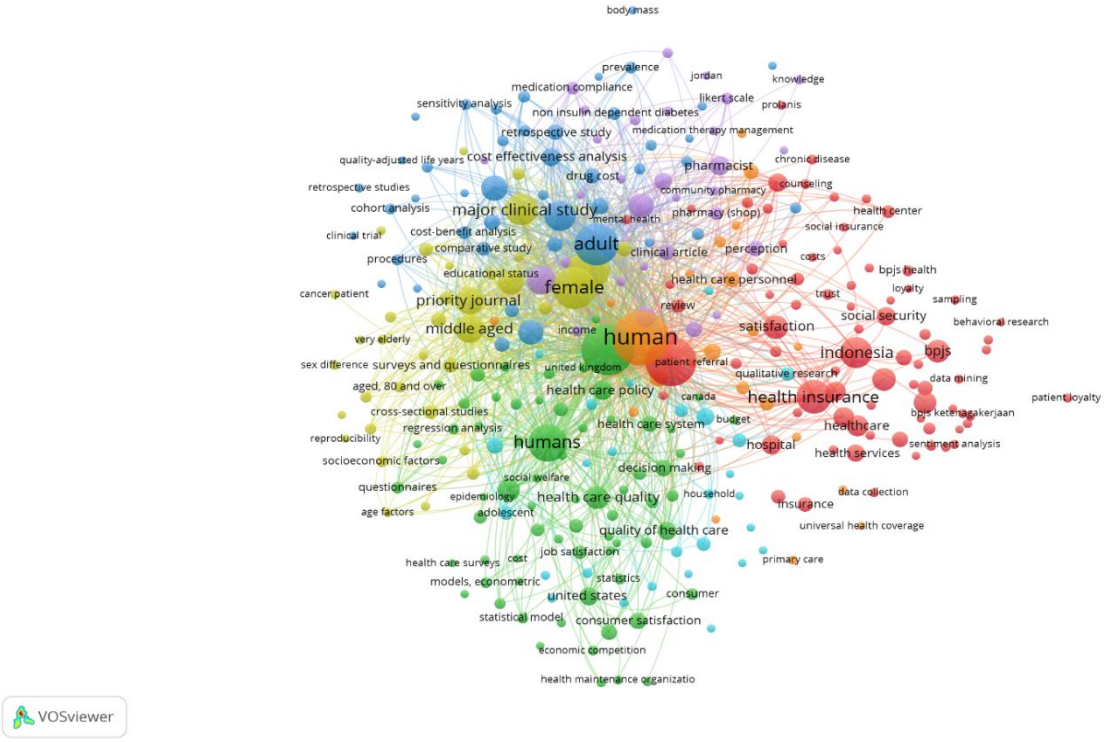

Figure 3. Bibliographic mapping by the co-occurrence of keywords.

The VOSviewer-generated co-word analysis in Figure 3 utilizes a constrained palette of ten chromatic variations, adhering to optimal visualization parameters for bibliometric networks as prescribed in foundational literature[9]. This intentional color limitation enhances cluster discriminability while preventing cognitive overload during pattern interpretation. Thematic analysis reveals three dominant conceptual clusters in the literature - 'human,' 'patient satisfaction,' and 'healthcare' - all directly aligned with this study's research focus on BPJS patient satisfaction. This study acknowledges as its primary limitation the non-empirical nature of variable interrelationships. The research objectives consequently focus on deriving testable theoretical propositions regarding service quality, price, and facility correlations, providing a foundation for future quantitative validation studies in Indonesia's BPJS hospital network.

RESULT

The successfully collected and selected articles are presented in the following Table 2.

Table 2. Article Findings.

No.	Articles' Author	Type
1	Loo (2020)	Quantitative
2	Wirantari et al. (2020)	Quantitative
3	Yusuf et al. (2020)	Quantitative
4	Amary & Suprayitno (2021)	Quantitative
5	Efendi et al. (2022)	Quantitative
6	Miftah (2022)	Quantitative
7	Munggaran & Siregar (2023)	Quantitative
8	Budisulistyo (2024)	Quantitative
9	Hidayat & Bachtiar (2024)	Systematic Literature Review
10	Ibrahim et al. (2024)	Systematic Literature Review
11	Indrawati et al. (2024)	Quantitative
12	Kurnia et al. (2024)	Systematic Literature Review
13	Larasati & Syamiyah (2024)	Systematic Literature Review

14	Lestari et al. (2024)	Quantitative
15	Nasution et al. (2024)	Quantitative
16	Nurlayla et al. (2024)	Quantitative
17	Priyono (2024)	Quantitative
18	Ramadhani et al. (2024)	Systematic Literature Review
19	Rosmawati (2024)	Quantitative
20	Runggandini (2024)	Systematic Literature Review
21	Sinaga et al. (2024)	Quantitative
22	Taufik (2024)	Quantitative
23	Tuzzahra et al. (2024)	Systematic Literature Review
24	Awati & Syamiyah (2025)	Systematic Literature Review
25	Hutabarat et al. (2025)	Quantitative
26	Mustainah et al. (2025)	Quantitative
27	Nur et al. (2025)	Quantitative
28	Putri & Berlianto (2025)	Quantitative
29	Putri et al. (2025)	Quantitative
30	Sultoni et al. (2025)	Quantitative

Relationship between Service Quality and BPJS Patient Satisfaction

Ibrahim et al. (2024) examined the relationship between service quality and BPJS patient satisfaction in Indonesian healthcare facilities by analyzing relevant publications from Google Scholar using keywords "quality", "satisfaction", and "service"[10]. The findings indicate a generally positive correlation between service quality dimensions (particularly physical evidence, responsiveness, assurance, and empathy) and BPJS patient satisfaction levels. However, the study identifies ongoing needs for improvement across all service quality parameters to fully meet patient expectations in the era of globalized healthcare standards. While current services achieve basic satisfaction benchmarks, the research underscores the necessity for continuous quality enhancement to align with evolving patient needs and international healthcare service benchmarks.

Larasati & Syamiyah (2024) study (2015-2020 publications from Google Scholar) compared patient satisfaction between BPJS and non-BPJS healthcare services, revealing significant disparities in perceived service quality[11]. The analysis identified three key dissatisfaction factors among BPJS users: (1) differential treatment from medical staff, (2) complex registration procedures, and (3) non-compliance with service standards (10). While general patients reported adequate satisfaction levels, BPJS users consistently demonstrated lower satisfaction scores across reviewed journals, particularly regarding responsiveness and procedural fairness. These findings highlight systemic inequities in Indonesia's dual healthcare system that require policy interventions to ensure equitable service quality for BPJS beneficiaries.

Nasution et al. (2024) examined BPJS service dimensions (service quality, price, facility) at Inanta General Hospital using questionnaire data from 100 patients collected via probability sampling[12]. Statistical analyses (t-tests, multiple regression) revealed service quality components - particularly responsiveness (t=2.632) and assurance (t=4.802) - significantly enhanced satisfaction (R^2=0.388), while price showed no significant partial effect. The model explained 38.8% of satisfaction variance, with patients emphasizing administrative efficiency and facility adequacy as key satisfaction drivers, though the moderate R^2 suggests additional influential factors beyond the examined variables.

Ramadhani et al. (2024) analyzed BPJS patient satisfaction in Indonesian healthcare facilities by examining recent 5-year publications from Google Scholar and Sinta databases[13]. The study revealed significant patient dissatisfaction with overall service quality and facility conditions, though

medical staff attentiveness (doctor/nurse interactions) received relatively positive feedback. Key complaints included inadequate consultation durations and perceived inequities in service delivery, suggesting systemic gaps in implementing the SJSN principles of social justice and benefit equality. While acknowledging some satisfactory interpersonal aspects, findings emphasize the need for operational reforms to align BPJS services with its humanitarian mandate and improve consultation time management.

Sinaga et al. (2024) examined the relationship between service quality dimensions (tangibility, responsiveness, empathy, assurance, reliability) and BPJS patient satisfaction at Doloksanggul Regional General Hospital, utilizing questionnaire data from 100 outpatient respondents selected via accidental sampling[14]. Univariate analysis revealed high satisfaction ratings across all service quality parameters: tangibility (85% positive), responsiveness (87%), empathy (84%), assurance (88%), and reliability (87%). Bivariate analysis using Chi-Square tests demonstrated statistically significant associations ($p<0.05$) between each service quality variable and patient satisfaction, with particularly strong correlations for assurance ($p=0.000$) and reliability ($p=0.000$). While current service quality levels are generally satisfactory, the study recommends continuous improvement efforts from healthcare providers to maintain and enhance BPJS service standards. These findings underscore the critical role of multidimensional service quality in achieving optimal patient satisfaction within Indonesia's national health insurance system.

Awati & Syamiyah (2025) analyzed three selected studies from Google Scholar and research journals to examine the impact of healthcare service quality on BPJS patient satisfaction (2016-2021)[15]. The findings consistently demonstrated a significant positive relationship between service quality dimensions and BPJS user satisfaction levels, confirming that superior service quality directly enhances patient satisfaction in Indonesia's national health insurance system. While the reviewed studies showed methodological variations, they collectively emphasized that BPJS healthcare providers must prioritize service quality improvements to maintain patient satisfaction. The limited sample size (3 articles) suggests the need for more comprehensive research to further validate these findings across diverse healthcare settings.

Hutabarat et al. (2025) research 2023-2024 cross-sectional study evaluated service quality and patient satisfaction at Tarutung Hospital's outpatient unit ($n=96$)[16]. While 72.9% reported satisfaction, significant gaps existed in responsiveness (10.5% poor) and reliability (9.4%). All five SERVQUAL dimensions (tangible=6.3%, assurance= 6.1%, empathy=5.2%) significantly influenced satisfaction ($p<0.05$). Findings highlight critical areas for improvement, particularly staff responsiveness and service reliability, to enhance patient experiences in Indonesia's regional healthcare system.

Mustainah et al. (2025) examined JKN (BPJS) participant satisfaction at Undata Hospital's Internal Medicine Polyclinic (Central Sulawesi) through field observations and surveys of 96 purposively sampled respondents[17]. Quantitative analysis (validity, reliability, and regression tests) demonstrated that service quality dimensions - particularly tangible facilities ($\beta=3.795$), reliability ($\beta=2.366$), and assurance ($\beta=2.151$) - collectively explained 83.2% of satisfaction variance ($R^2=0.832$). While responsiveness ($\beta=2.129$) and empathy ($\beta=2.067$) showed significant effects, the remaining 16.8% variance suggests additional unmeasured factors influence satisfaction. Patients notably emphasized facility quality as the strongest satisfaction predictor, though all service quality components exceeded minimum significance thresholds.

Nur et al. (2025) examined BPJS patient satisfaction at Prima Inti Medika Hospital (North Aceh) using questionnaire data from 95 outpatients (accidental sampling from

1,120 population) and hospital records[18]. Multivariate analysis revealed significant associations between service quality dimensions and satisfaction: responsiveness (p=0.001), reliability (p=0.000), assurance (p=0.002), and empathy (p=0.000), with empathy being the strongest predictor (Exp(B)=4.781). While physical evidence (p=0.060) showed no significant relationship, patients particularly valued thorough examinations, complete information, medication availability, and staff attentiveness. The findings suggest that non-physical service quality elements - especially empathetic care and prompt responsiveness - are crucial determinants of BPJS patient satisfaction. Healthcare providers should prioritize staff training in patient-centered communication and equitable service delivery to enhance satisfaction levels.

Putri & Berlianto (2025) using SEM-PLS analyzed 450 BPJS outpatients at XYZ Private Hospital via judgmental sampling (45-item Likert questionnaire)[19]. Results revealed empathy (β=+0.32, $p<0.01$), insurance system (β=+0.28, $p<0.05$), and staff sincerity (β=+0.35, $p<0.01$) significantly enhanced satisfaction, while reliability negatively impacted satisfaction (β=-0.18, $p<0.05$). Satisfaction positively influenced trust (β=+0.41) and loyalty (β=+0.39), though tangible assets reduced loyalty (β=-0.22). Assurance/responsiveness showed no significant effects, suggesting resource reallocation. Future research should expand to government hospitals and include diagnostic data for comprehensive analysis.

Putri et al. (2025) examined promotion and service quality impacts on BPJS patient satisfaction at Clinic X (n=63) using multiple linear regression[20]. Results revealed both factors significantly influenced satisfaction ($Y=1.245+0.077X_1+0.844X_2$), with service quality (β=0.844) demonstrating stronger effects than promotion (β=0.077). The findings underscore the critical role of continuous service improvement and strategic marketing by primary healthcare facilities to enhance BPJS patient experiences in Indonesia's national health insurance system.

Sultoni et al. (2025) study at Fahmi Husada Clinic (Madiun) analyzed BPJS patient satisfaction among 30 outpatients using quantitative methods and chi-square tests[21]. Results revealed significant associations between service quality dimensions - responsiveness (p=0.024) and empathy (p=0.034) - with patient satisfaction, while tangible (p=0.053), reliability (p=1.000), and assurance (p=0.988) showed no significant relationships. The findings suggest clinic managers should prioritize staff responsiveness and empathetic care to enhance satisfaction, rather than over-emphasizing physical facilities or service guarantees. This study provides empirical evidence for targeted quality improvements in Indonesia's primary healthcare system.

Relationship between Price and BPJS Patient Satisfaction

Wirantari et al. (2020) analyzed 219 congenital heart disease (CHD) patients undergoing cardiac catheterization at Sanglah Hospital (2009-2018)[22], predominantly BPJS participants. Medical records revealed most cases were cyanotic CHD (tetralogy of Fallot), with significant cost discrepancies between INA-CBG reimbursement rates and actual hospital charges (up to 107% underfunding for mild interventions). The findings highlight financial strains in Indonesia's universal healthcare system when covering advanced cardiac diagnostics, particularly for complex CHD cases requiring catheterization.

Yusuf et al. (2020) compared BPJS and non-BPJS claim revenues at Andi Makkasau Parepare Hospital, revealing BPJS claims surged to IDR 56.60 billion (86% of total), while non-BPJS accounted for IDR 7.98 billion (14%)[23]. Analysis showed BPJS funds were primarily allocated to non-communicable diseases (cataracts: IDR 376M, cancer: IDR 371M, heart disease: IDR 219M). Despite the financial burden, service accessibility improved with growing BPJS

membership, demonstrating the program's expanding healthcare coverage in Indonesia.

Hidayat & Bachtiar (2024) analyzed BPJS Health inpatient cost management through literature review, identifying a tripartite collaboration between the Health Ministry, BPJS, and healthcare facilities. Findings reveal BPJS employs dual quality-cost control principles to maintain high service standards while ensuring cost-effectiveness[24]. The management system encompasses quality control, cost containment, health commitments, and supervision, demonstrating the program's systematic approach to balancing financial sustainability with healthcare quality in Indonesia's national health insurance system.

Nurlayla et al. (2024) examined service quality and price impacts on BPJS patient satisfaction at Adam Malik Hospital using primary data from 30 respondents[25]. Multiple linear regression analysis (SPSS 29) revealed price significantly positively influenced satisfaction (β=0.42, $p<0.05$), while service quality showed no significant effect (β=0.18, $p>0.05$). The findings suggest financial accessibility outweighs service dimensions in determining BPJS patient satisfaction at this facility, highlighting the importance of affordable healthcare pricing in Indonesia's national insurance system.

Taufik (2024) examined BPJS patient satisfaction at Siloam Hospital Purwakarta, analyzing inpatient rates and minimum service standards through descriptive analysis[26]. Results demonstrated both factors significantly influenced satisfaction individually ($p<0.05$) and collectively (R^2=0.906), with service standards particularly impacting comfort, staff competence, and patient-provider relationships. The 90.6% explained variance highlights these variables' dominance, while 9.4% remains attributable to external factors. Recommendations include tariff transparency initiatives and continuous patient education about service standards to optimize satisfaction within Indonesia's national health insurance framework.

Tuzzahra et al. (2024) research a qualitative case study at RSUD Majenang identified key factors in BPJS Health claim rejections through interviews with verification and coding officers[27]. Findings revealed administrative errors (inaccurate diagnostic coding and incomplete documentation) as primary causes, stemming from recording discrepancies, guideline misinterpretations, and interdepartmental coordination gaps. The study highlights the need for staff training, documentation improvements, and procedural evaluations to enhance claim accuracy and service quality in Indonesia's national health insurance system.

Relationship between Facility and BPJS Patient Satisfaction

Loo (2020) exploring quantitative study at Insani Stabat Hospital analyzed BPJS patient satisfaction determinants, finding service quality (X_1) and facility conditions (X_2) significantly influenced satisfaction (Y) both partially and collectively (R^2=0.805)[28]. The remaining 19.5% variance was attributed to unexamined factors like pricing and administrative systems. Results demonstrate that maintaining superior service quality and modern facilities serves as competitive differentiators in Indonesia's healthcare market while directly enhancing patient satisfaction and hospital visitation rates.

Amary & Suprayitno (2021) research about cross-sectional study at UPT Puskesmas Segiri examined BPJS patient satisfaction (n=94) using accidental sampling and questionnaires[29]. Chi-square analysis revealed a significant association between healthcare facilities and satisfaction levels ($p=0.00<\alpha=0.05$). The findings demonstrate that facility quality substantially impacts BPJS patient experiences in primary healthcare settings, providing valuable insights for improving public health center services within Indonesia's national health insurance system.

Efendi et al. (2022) study at RSU Mina Padi (Simalungun) demonstrated service quality and facility conditions significantly explain 63.1% of BPJS patient satisfaction variance

(R=0.631)[30]. Both factors showed positive partial and simultaneous impacts ($p<0.05$), highlighting needs for: (1) expanded inpatient capacity, (2) increased specialist staffing, (3) waste odor management, and (4) BPJS medication availability. These findings emphasize infrastructure and human resource investments as critical drivers for enhancing patient satisfaction in Indonesia's regional hospitals.

Miftah (2022) examined service quality, staff performance, and facility impacts on patient satisfaction at ABC Hospital (n=80) using PLS-SEM analysis (PLS 3.0)[31]. Results revealed employee performance ($\beta=0.38$, $p<0.05$) and facility quality ($\beta=0.42$, $p<0.05$) significantly enhanced satisfaction, while service quality showed no significant effect ($\beta=0.12$, $p>0.05$). The findings suggest hospital administrators should prioritize workforce training and facility upgrades over service enhancements to optimize patient satisfaction in Indonesia's healthcare sector.

Munggaran & Siregar (2023) research a quantitative study at Karawang District Hospital (n=100 BPJS inpatients) employed descriptive-verificative methods with stratified random sampling and path analysis[32]. Results showed strong correlations between service quality (69.77% partial effect) and facilities (16.19%) with patient satisfaction, collectively explaining 85.96% variance ($R^2=0.860$). While current service quality and facilities rated "good", the remaining 14.04% unexplained variance suggests additional factors influence satisfaction in Indonesia's Class 3 BPJS inpatient services.

Budisulistyo (2024) analyzed Indonesia's National Health Insurance (JKN) system, identifying significant delays in BPJS's tiered referral system ($p<0.05$) and lower satisfaction among BPJS (48.1%) versus non-BPJS patients[33]. While laws mandate quality-controlled managed care (PMK No.1/2012) and health rights (UUD 1945), implementation gaps persist. Findings reveal tension between regulatory restrictions on patient-initiated referrals and constitutional healthcare rights, underscoring needs for equitable referral ecosystems and enhanced provider competencies under Consumer Protection Law (UU No.8/1999).

Indrawati et al. (2024) analyzed 38,277 COVID-19 hospitalizations from BPJS Health records, revealing an 18.9% mortality rate (7,226 deaths)[34]. Multivariate analysis identified significant mortality risks: advanced age (aOR=13.75 for ≥65 years), male sex (aOR=1.13), ICU care without ventilation (aOR=5.84), and respiratory comorbidities (aOR=5.39). Extended hospitalization (>15 days) reduced risk (aOR=0.39). Findings emphasize critical needs for timely interventions and optimized resource allocation in Indonesia's pandemic response, particularly for high-risk demographics.

Kurnia et al. (2024) make a descriptive literature review examines BPJS Health's performance-based capitation (KBK) system implemented since 2019, analyzing its impact on patient welfare through healthcare facility quality (infrastructure, medical services, and treatment rooms)[35]. Findings suggest the referral-based system and KBK mechanism at primary facilities (puskesmas, clinics) aim to enhance service standards, though challenges persist in ensuring equitable access. The study highlights the critical role of adequate social protection policies in Indonesia's healthcare development, as emphasized by ILO (2020) standards.

Lestari et al. (2024) examined service quality's impact on BPJS patient satisfaction at Medan General Hospital (n=56), revealing a significant positive relationship ($t=16.376>1.65$). Service quality explained 51.4% of satisfaction variance ($R^2=0.514$), while 48.6% was attributed to unexamined factors[36]. The findings demonstrate that enhancing service quality substantially improves patient satisfaction in Indonesia's national health insurance system, though additional variables require investigation for comprehensive understanding.

Priyono (2024) study a survey of 100 outpatients at RSU Siaga Medika Banyumas examined service quality, facility conditions,

and trust impacts on satisfaction using multiple linear regression[37]. Results demonstrated all three variables significantly enhanced satisfaction both partially ($p<0.05$) and collectively (F-test $p<0.05$), with rigorous validity/reliability testing and prerequisite analyses (normality, multicollinearity, heteroscedasticity) ensuring robust findings. The study confirms these factors as critical determinants of patient satisfaction in Indonesia's polyclinic services, suggesting multidimensional quality improvements can optimize BPJS healthcare experiences.

Rosmawati (2024) evaluated BPJS Health's Self-Service Queue Machine (APM) implementation at Hermina Lampung Hospital (n=50)[38]. Survey results showed moderate satisfaction levels: content (30% satisfied), format (30% moderately satisfied), accuracy (28% moderately satisfied), timeliness (26% moderately satisfied), and usability (28% satisfied). While overall satisfaction was relatively high, the study recommends regular staff training, user socialization, machine maintenance, and feature upgrades to enhance this digital healthcare service within Indonesia's national insurance system.

Runggandini (2024) examines the correlation between outpatient service quality and patient satisfaction in hospitals and community health centers[39]. Findings indicate that enhanced service quality positively impacts patient satisfaction, subsequently influencing healthcare facility visitation frequency. The study highlights outpatient services as critical entry points that determine patient retention, suggesting that consistent quality improvements can foster greater patient loyalty within Indonesia's healthcare system.

JBI Assessment

The Joanna Briggs Institute (JBI) is an internationally recognized organization dedicated to advancing evidence-based healthcare by facilitating access to, evaluation of, and implementation of high-quality research[40]. It provides specialized critical appraisal tools for diverse study designs, including Analytical Cross-Sectional Studies, Case-Control Studies, Cohort Studies, Diagnostic Accuracy Research, Economic Evaluations, Prevalence Studies, Qualitative Investigations, Quasi-Experimental Designs, Randomized Controlled Trials, Systematic Reviews, and Textual Evidence (Expert Opinion, Narrative, and Policy)[41]. While JBI's quantitative assessment tools—covering Analytical Cross-Sectional, Case-Control, Cohort, Prevalence, Quasi-Experimental, and Randomized Controlled Trials—have undergone iterative revisions to minimize bias risk, an updated question framework remains pending[42,43].

Research results in this study indicates that selected articles typically employ either qualitative (specifically systematic literature reviews) or quantitative methodologies, with JBI's Systematic Reviews tool suitable for the former. In medical sciences, the Analytical Cross-Sectional Studies assessment has been validated for quantitative research[44], justifying its selection for evaluating quantitative articles in this study.

The Joanna Briggs Institute (JBI) employs a standardized checklist-based assessment framework, where each criterion is evaluated using a four-tiered classification system: Yes (Y), No (N), Unclear (U), or Not Applicable (NA)[41]. The evaluation questions comprising the JBI assessment instrument for Systematic Reviews are structured as follows[45]:

Q1. Is the review question clearly and explicitly stated?

Q2. Were the inclusion criteria appropriate for the review question?

Q3. Was the search strategy appropriate?

Q4. Were the sources and resources used to search for studies adequate?

Q5. Were the criteria for appraising studies appropriate?

Q6. Was critical appraisal conducted by two or more reviewers independently?

Q7. Were there methods to minimize errors in data extraction?

Q8. Were the methods used to combine studies appropriate?
Q9. Was the likelihood of publication bias assessed?
Q10. Were recommendations for policy and/or practice supported by the reported data?
Q11. Were the specific directives for new research appropriate?
The JBI critical appraisal tool for systematic literature reviews utilized in this study is presented in Table 3.

Table 3. Critical appraisal of included systematic literature studies (systematic reviews).

Citations	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Ibrahim et al. (2024)	Y	Y	Y	U	N	N	N	N	N	Y	Y
Larasati & Syamiyah (2024)	Y	Y	Y	U	N	N	N	N	N	Y	Y
Ramadhani et al. (2024)	Y	Y	Y	Y	N	N	N	N	N	Y	Y
Awati & Syamiyah (2025)	Y	Y	Y	U	N	N	N	N	N	Y	Y
Hidayat & Bachtiar (2024)	Y	U	U	U	N	N	N	N	N	Y	U
Tuzzahra et al. (2024)	Y	Y	Y	U	N	N	N	N	N	Y	Y
Kurnia et al. (2024)	Y	U	U	U	N	N	N	N	N	Y	U
Runggandini (2024)	Y	U	U	U	N	N	N	N	N	Y	U

Note: Y = Yes, N = No, U = Unclear, NA = Not Applicable.

Analysis of the selected literature reveals that items Q5 through Q9 consistently received "No" (N) ratings, as none of the studies—including those meeting inclusion criteria—employed systematic quality assessment tools in their review methodologies. The evaluation questions comprising the JBI assessment instrument for Analytical Cross-Sectional Studies are structured as follows[46]:
Q1. Were the criteria for inclusion in the sample clearly defined?
Q2. Were the study subjects and the setting described in detail?
Q3. Was the exposure measured in a valid and reliable way?
Q4. Were objective, standard criteria used for measurement of the condition?
Q5. Were confounding factors identified?
Q6. Were strategies to deal with confounding factors stated?
Q7. Were the outcomes measured in a valid and reliable way?
Q8. Was appropriate statistical analysis used?
The JBI critical appraisal tool for quantitative utilized in this study is presented in Table 4.

Table 4. Critical appraisal of included quantitative studies (analytical cross-sectional).

Citations	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Nasution et al. (2024)	Y	Y	Y	U	N	N	Y	Y
Sinaga et al. (2024)	Y	Y	Y	U	N	N	Y	Y
Hutabarat et al. (2025)	Y	Y	Y	Y	N	N	Y	Y
Mustainah et al. (2025)	Y	Y	Y	U	N	N	Y	Y
Nur et al. (2025)	Y	Y	Y	U	N	N	Y	Y
Putri & Berlianto (2025)	Y	Y	Y	U	N	N	Y	Y
Putri et al. (2025)	Y	Y	Y	Y	N	N	Y	Y
Sultoni et al. (2025)	Y	Y	Y	U	N	N	Y	Y
Wirantari et al. (2020)	Y	Y	U	U	N	N	Y	Y
Yusuf et al. (2020)	Y	Y	U	U	N	N	Y	Y
Nurlayla et al. (2024)	Y	Y	Y	U	N	N	Y	Y
Taufik (2024)	Y	Y	Y	U	N	N	Y	Y
Loo (2020)	Y	Y	Y	U	N	N	Y	Y
Amary & Suprayitno (2021)	Y	Y	Y	U	N	N	Y	Y
Efendi et al. (2022)	Y	Y	Y	U	N	N	Y	Y
Miftah (2022)	Y	Y	Y	U	N	N	Y	Y
Munggaran & Siregar (2023)	Y	Y	Y	U	N	N	Y	Y
Budisulistyo (2024)	U	Y	Y	U	N	N	Y	Y
Indrawati et al. (2024)	Y	Y	Y	Y	Y	N	Y	Y

Lestari et al. (2024)	Y	Y	Y	U	N	N	Y	Y
Priyono (2024)	Y	Y	Y	Y	N	N	Y	Y
Rosmawati (2024)	Y	Y	Y	U	N	N	Y	Y

Note: Y = Yes, N = No, U = Unclear, NA = Not Applicable.

The evaluation demonstrates that all Q6 items and nearly all Q5 items were rated "No" (N), primarily because confounding factors were deemed non-essential information - a limitation previously identified in quantitative revisions of the JBI assessment framework as a potential source of bias[42,43].

CONCLUSION

This study establishes significant theoretical relationships between service quality, price, and facility dimensions with BPJS patient satisfaction. Over the past six years, Indonesia's healthcare quality has been characterized by prevalent public complaints regarding high medical costs, exacerbated by delayed BPJS claims, although service quality and hospital facilities for BPJS beneficiaries have shown measurable improvement. A critical appraisal tools was performed on all 30 included articles using the standardized JBI assessment. While constrained by its non-empirical methodology, the findings provide a foundational conceptual framework warranting quantitative validation through large-scale hospital surveys across Indonesia's diverse healthcare institutions.

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