



Perceived Hospital Responsiveness and Patient Satisfaction at Undata General Hospital Palu: A Cross-Sectional Study

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ABSTRACT

Background: Patient satisfaction is an important indicator of hospital service quality, but hospitals often need evidence on which service-quality dimensions are most closely associated with patient evaluations. This study examined the association between perceived hospital responsiveness, measured using SERVQUAL-derived responsiveness items, and patient satisfaction at Undata General Hospital Palu.

Methods: This quantitative cross-sectional study analyzed 96 valid patient survey responses collected at Undata General Hospital Palu, Central Sulawesi, Indonesia, from December 2025 to January 2026. Respondents were outpatient JKN (National Health Insurance) users selected using accidental sampling. Eligible respondents were patients who had a minimum of three visits to the hospital. Responsiveness was measured using four Likert-scale items, and patient satisfaction was measured using ten Likert-scale items. Composite scores were categorized using a 75% threshold. Descriptive statistics, cross-tabulation, Fisher's exact test, crude odds ratio estimation, and correlation analysis were performed. Although formal ethical approval was not obtained, the study was conducted with consideration of ethical principles, including voluntary participation, informed consent, and confidentiality

Results: Overall, 59.4% of respondents perceived hospital responsiveness as good, whereas only 26.0% were categorized as satisfied. Satisfaction was reported by 40.4% of respondents in the good-responsiveness group and 5.1% in the poor-responsiveness group. Good perceived responsiveness was associated with higher odds of satisfaction (crude OR = 12.51; 95% CI: 2.74–57.11; $p < 0.001$), although the wide confidence interval indicates limited precision. Score-based analysis also showed positive correlations between responsiveness and satisfaction using Pearson correlation ($r = 0.681$; $p < 0.001$) and Spearman correlation ($\rho = 0.600$; $p < 0.001$)

Conclusion: Perceived hospital responsiveness was significantly associated with patient satisfaction in this cross-sectional study. However, the low overall satisfaction rate despite relatively favorable responsiveness ratings suggests that responsiveness alone does not fully explain patient satisfaction. Broader assessment of other service-quality dimensions is needed to guide patient-centred hospital quality improvement.



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INTRODUCTION

Patient satisfaction is an important indicator of hospital service quality because it reflects patients' perceptions of care processes, interactions with health workers, and whether service

delivery meets their expectations and needs. In hospital settings, service quality is not evaluated only through clinical outcomes or technical competence, but also through patients' experiences of communication, timeliness, respect, access, and responsiveness. Patient satisfaction is therefore widely regarded as a complementary indicator of healthcare service quality, particularly in hospitals where patients interact with multiple professional groups during care delivery (Cavicchi, Oppi, & Vagnoni, 2022; Lee & Lee, 2022; Unger, Morales, & Paepe, 2020a). However, satisfaction should not be interpreted as a substitute for technical quality, clinical safety, or measurable health outcomes; rather, it should be used alongside process and outcome measures to inform quality improvement (Cavicchi et al., 2022; Lee & Lee, 2022; Unger et al., 2020a).

Patient satisfaction is also linked to patient-centred care and quality-management efforts in hospitals. Healthcare organizations are increasingly expected to provide services that are not only clinically effective but also respectful, accessible, responsive, and aligned with patient values. In this context, robust governance, organizational leadership, and quality-management systems are needed to translate satisfaction data into measurable service improvements. Without such governance support, patient satisfaction surveys may remain descriptive administrative exercises rather than tools for evidence-based decision-making and performance improvement (Cavicchi et al., 2022; Lee & Lee, 2022).

Despite the increasing use of satisfaction surveys, hospitals still face a practical problem: satisfaction is multidimensional, and overall satisfaction scores do not automatically identify which service-quality dimension should be prioritized for improvement. General satisfaction scores may indicate whether patients are satisfied or dissatisfied, but they do not automatically identify the operational source of satisfaction problems. This limitation is especially important because hospital managers require actionable evidence to determine which aspects of service delivery should be prioritized. Responsiveness refers to the willingness, readiness, and promptness of health workers and service systems in responding to patient needs, including timeliness, communication, respect, access, and patient involvement in decision-making (Unger et al., 2020a; Unger, Morales, & Paepe, 2020b).

One widely used framework is SERVQUAL, SERVQUAL has remained one of the most widely used instruments for evaluating perceived service quality in hospitals and related service settings. SERVQUAL commonly assesses service quality through five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions allow researchers and managers to move beyond general satisfaction scores and identify more specific quality gaps between service expectations and perceptions (Ali, Norizan, Said, Mat, & Jislan, 2021; Bastola, 2023; Darzi, Islam, Khursheed, & Bhat, 2023; Rahmatia, Basri, Adi, Nasrullah, & Ahmad, 2025; Zareen, Shah, & Bashir, 2024). In hospital care, this framework is particularly useful because patients' perceptions are shaped not only by physical facilities or clinical competence, but also by staff behaviour, service speed, reliability of procedures, and interpersonal interaction.

Responsiveness is important for hospital quality improvement because it is a modifiable service-process dimension that can be addressed through timely assistance, clearer communication, improved information delivery, and better complaint handling. Responsiveness is commonly operationalized through indicators related to timely service, prompt assistance, staff willingness to help, respectful communication, access to information, and attention to patient needs. It is framed as a non-clinical dimension of care quality that complements evidence-based medicine by emphasizing whether care delivery is aligned with patient goals, values, and expectations (Unger et al., 2020a, 2020b). This means that responsiveness does not replace clinical effectiveness; rather, it strengthens patient-centred care by ensuring that technically appropriate care is delivered in a manner that patients perceive as timely, respectful, and supportive. Literature also links responsiveness to governance and organizational culture, indicating that leadership, patient engagement, staffing systems, and institutional norms influence how responsive care is delivered (Unger et al., 2020a, 2020b).

Empirical studies have frequently reported an association between responsiveness, perceived service quality, and patient satisfaction in hospital settings, although the strength of this association may vary across institutional and cultural contexts. Systematic and empirical evidence suggests that SERVQUAL dimensions, especially reliability, responsiveness, and empathy, are

generally positively associated with patient satisfaction and can guide targeted improvements in hospital service delivery (Darzi et al., 2023; Rahmatia et al., 2025; Zareen et al., 2024). In several hospital-based studies, responsiveness captures patients' evaluation of whether staff provide timely, respectful, and helpful interactions, which are central to patient-centred care (Darzi et al., 2023; Morales-Garrido et al., 2025; Perera & Dabney, 2020; Rahmatia et al., 2025; Zareen et al., 2024). Studies on hospital service quality also show that alternative and adapted instruments, such as PubHosQual and HEALTHQUAL, have been developed to better fit public hospital contexts and specific inpatient or outpatient subsystems, suggesting that measurement refinement remains important in healthcare service-quality research (Bhaladhare & Rishipathak, 2023; Endeshaw, 2020; Liu, Chen, & Li, 2025; Noorossana, Delshad, & Nayeypour, 2021).

Although many studies report that SERVQUAL dimensions are associated with satisfaction, fewer studies isolate the unique predictive role of responsiveness in specific hospital contexts. Existing evidence also shows variability in the strength and significance of responsiveness compared with reliability, empathy, assurance, and tangibles, suggesting that its influence may depend on patient group, service type, hospital setting, and cultural expectations (Darzi et al., 2023; Morales-Garrido et al., 2025; Perera & Dabney, 2020; Rahmatia et al., 2025; Zareen et al., 2024). Some findings are negative or mixed when responsiveness gaps remain large or when other service dimensions dominate satisfaction outcomes, indicating the need for context-specific analysis and possible measurement refinement (Perera & Dabney, 2020; Providence, Cissy, & Munyengabe, 2022; Uprety, 2025). Additional work is also needed to compare SERVQUAL-based findings with health-specific measurement models and to examine how factors such as inpatient versus outpatient status, emergency care, and cultural expectations shape responsiveness and satisfaction (Adzinyo, Dzansi, & Strydom, 2024; Endeshaw, 2020; Noorossana et al., 2021; Temory, 2024).

Therefore, this study examined the association between perceived hospital responsiveness and patient satisfaction among outpatient JKN users at Undata General Hospital Palu, Central Sulawesi, Indonesia. The study is justified by the need to generate empirical evidence on whether responsiveness, as a specific and modifiable SERVQUAL dimension, is significantly related to patient satisfaction in the studied hospital context. This study does not assess the full SERVQUAL framework; instead, it focuses on SERVQUAL-derived responsiveness items because responsiveness is a specific, modifiable, and practically relevant service-quality dimension. Based on previous literature, this study hypothesized that patients who perceived hospital responsiveness as good would have higher odds of reporting satisfaction than patients who perceived responsiveness as poor. The scope of the study is limited to the relationship between responsiveness and satisfaction as measured through structured Likert-scale indicators and categorical thresholds. By clarifying this relationship, the study is expected to contribute to hospital quality-improvement evidence and support practical interventions related to timeliness, staff helpfulness, communication, care coordination, and patient-centred service delivery (Ali et al., 2021; Jaleel, Yajid, Khatibi, & Azam, 2022; Liu et al., 2025; Perera & Dabney, 2020; Zareen et al., 2024).

METHODS

Study Design

This quantitative cross-sectional study examined the association between perceived hospital responsiveness and patient satisfaction among outpatient JKN (National Health Insurance) users at Undata General Hospital Palu, Central Sulawesi, Indonesia. Data were collected at Undata General Hospital (RSUD Undata) Palu, Central Sulawesi, Indonesia, from December 2025 to January 2026. A cross-sectional design was selected because responsiveness and patient satisfaction were measured at one point in time to assess their association. Cross-sectional surveys are widely used in hospital service-quality research to examine associations between patient perceptions and service-quality indicators (Ko & Chou, 2020; Singleton, Garfinkel, Malone, Temkit, & Belthur, 2020; Sugai et al., 2021).

Because responsiveness and patient satisfaction were measured simultaneously, this cross-sectional study can identify associations but cannot establish temporal or causal relationships. The study may also be affected by common-method bias, residual confounding, and the inability to assess changes in patient perceptions over time (Almadani et al., 2026; Jalenques, Rondepierre, Rachez, Lauron, & Guiguet-Auclair, 2020; Kubota et al., 2022; Overmark, 2025; Pipan, 2022). Accordingly, all findings are interpreted as associations rather than evidence of causality.

Study Population and Sample

The study population consisted of outpatient JKN (National Health Insurance) users who received services at Undata General Hospital Palu, Central Sulawesi, Indonesia, from December 2025 to January 2026. The analytical sample included 96 valid responses obtained from outpatient JKN users who were selected using accidental sampling. Each survey response represented one respondent with complete information on responsiveness items, satisfaction items, and the variables required for analysis. Respondents were eligible if they were outpatient JKN users who had visited the hospital at least three times and were willing to provide informed consent.

Respondent characteristics included age, sex, education, and occupation. These variables were used to describe the study population and provide contextual information for interpreting patient satisfaction. The main analytical focus was the association between perceived hospital responsiveness and patient satisfaction.

Study Variables

The independent variable was perceived hospital responsiveness. Responsiveness was defined as patients' perception of the readiness, willingness, and promptness of hospital staff in providing assistance, information, and timely responses to patient needs. In this study, responsiveness was treated as a service-process variable rather than as a direct measure of overall satisfaction. The responsiveness items were derived from the SERVQUAL responsiveness dimension, but the study did not assess the full SERVQUAL framework (Darzi et al., 2023; Endeshaw, 2020; Morales-Garrido et al., 2025; Noorossana et al., 2021; Perera & Dabney, 2020).

The dependent variable was patient satisfaction. Patient satisfaction was defined as the patient's overall evaluation of hospital services based on their service experience. In this study, satisfaction was measured using ten Likert-scale items.

Measurement Instrument

Responsiveness was measured using five items covering doctors' inquiry about patient complaints, prompt action by health workers, doctors' and nurses' responsiveness to complaints, and the provision of clear, understandable information by health workers. Each item was scored on a four-point Likert scale, with higher scores indicating better perceived responsiveness. The total responsiveness score was obtained by summing the five item scores, yielding a possible range of 5–20. The summed score was then converted to a percentage of the maximum possible score.

For this analysis, respondents with percentage scores of 75% or higher were classified as having good responsiveness, whereas those scoring below 75% were classified as having poor responsiveness. This threshold was selected as a study-defined classification criterion to distinguish higher and lower perceived responsiveness.

Patient satisfaction was measured using ten items covering registration speed, accessibility of service-procedure information, punctuality of services, medication accuracy, safe and comfortable doctor consultation, careful handling by doctors and nurses, fair service, staff friendliness, complaint handling, and hospital cleanliness. Each satisfaction item used the same four-point Likert scale, with higher scores indicating greater patient satisfaction. The ten item scores were summed, yielding a possible range of 10–40, and converted to a percentage of the maximum possible score. Using the same 75% classification criterion, respondents scoring $\geq 75\%$ were categorized as satisfied, whereas those scoring $< 75\%$ were categorized as not satisfied.

Internal consistency testing showed acceptable reliability for both scales. Cronbach's alpha was 0.838 for the responsiveness scale and 0.857 for the patient satisfaction scale. The combined

responsiveness and satisfaction items had an overall Cronbach's alpha of 0.900, indicating strong internal consistency for composite score construction.

Data Management and Quality Control

The survey dataset was reviewed before analysis to ensure that all relevant variables were correctly identified. Non-data rows and coding notes were separated from respondent-level survey responses. The final analytical dataset consisted of 96 valid survey responses. Total scores and percentage scores for responsiveness and satisfaction were constructed from the item-level data. The categorical variables for responsiveness and satisfaction were checked against the 75% threshold rule to ensure consistency.

Data quality was also assessed by examining the coding structure of sociodemographic variables. Sex was coded as 1 for male and 2 for female. Education was coded according to the dataset codebook, although one education record contained an undefined code beyond the stated category range. This issue should be verified against the original questionnaire or corrected before final journal submission. If verification is not possible, the undefined value should be treated as missing in analyses involving education. Such data checking is important because miscoded variables may affect descriptive reporting and adjustment analysis.

Statistical Analysis

Data were analyzed using descriptive and inferential statistics in IBM SPSS Statistics version 26. Descriptive statistics were used to summarize respondents' demographic characteristics and the distribution of responsiveness and patient satisfaction.

The association between categorized responsiveness and patient satisfaction was evaluated using Fisher's exact test because one or more expected cell frequencies were below five. A crude odds ratio (OR) with a 95% confidence interval (CI) was calculated to estimate the strength of the association between perceived responsiveness and patient satisfaction.

Pearson's correlation coefficient was used to assess the linear relationship between continuous responsiveness and satisfaction scores after confirming that the assumptions of approximate normality and linearity were satisfied. Spearman's rank correlation was also calculated as a non-parametric measure of association. A two-sided *p*-value of <0.05 was considered statistically significant.

Ethical Considerations

Participation in this study was voluntary. Before completing the questionnaire, all respondents were informed about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Written informed consent was obtained from all participants prior to data collection. No personally identifiable information was collected, and all data were analyzed anonymously. Formal ethical approval was not obtained for this study. This should be considered when interpreting the findings and is acknowledged as a limitation of the study.

RESULTS

Respondent Characteristics

Table 1 presents the sociodemographic characteristics of the 96 respondents included in the study. The mean age of respondents was 31.78 ± 12.11 years, with an age range of 17–75 years. Most respondents were aged <30 years (59.4%), followed by 30–44 years (27.1%) and ≥45 years (13.5%). Female respondents represented 60.4% of the sample, while male respondents represented 39.6%. Regarding education, the largest group had bachelor-level education (43.8%), followed by high school education (37.5%).

Table 1. Sociodemographic characteristics of respondents

Characteristic	n / Value	%
Age Mean $\pm$ SD	31.78 $\pm$ 12.11	
Age group		
<30 years	57	59.4
30–44 years	26	27.1
$\geq$ 45 years	13	13.5
Sex		
Male	38	39.6
Female	58	60.4
Education		
Elementary	5	5.2
Middle School	6	6.3
High School	36	37.5
Diploma	6	6.3
Bachelor	42	43.8
Master	1	1

The demographic profile shows that the sample was dominated by younger respondents and women. The education profile was relatively heterogeneous, although two groups, Master and Highschool, accounted for most of the sample.

Perceived Responsiveness and Patient Satisfaction

Among the respondents, 57 (59.4%) perceived hospital responsiveness as good, while 39 (40.6%) perceived it as poor. Regarding patient satisfaction, 25 respondents (26.0%) were categorized as satisfied, whereas 71 respondents (74.0%) were categorized as not satisfied.

Table 2. Distribution of responsiveness and patient satisfaction categories

Category	n	%
Responsiveness		
Poor	39	40.6
Good	57	59.4
Patient satisfaction		
Not satisfied	71	74.0
Satisfied	25	26.0

The mean responsiveness score was 14.46 ± 2.11 out of a possible range of 5–20, equivalent to a mean percentage score of 72.29%. The median responsiveness score was 15, and the observed range was 8–20. The mean patient satisfaction score was 27.44 ± 3.86 out of a possible range of 10–40, equivalent to a mean percentage score of 68.59%. The median satisfaction score was 27, and the observed range was 19–40.

Table 3. Descriptive statistics of responsiveness and patient satisfaction scores

Variable	Number of Items	Possible Score Range	Mean	SD	Median	Observed Range	Mean Percentage
Responsiveness	5	5–20	14.46	2.11	15	8–20	72.29%
Patient satisfaction	10	10–40	27.44	3.86	27	19–40	68.59%

Association Between Responsiveness and Patient Satisfaction

Table 4 shows the relationship between perceived hospital responsiveness and patient satisfaction. Among respondents who perceived responsiveness as poor, 2 of 39 respondents (5.1%) were satisfied. In contrast, among respondents who perceived responsiveness as good, 23 of 57 respondents (40.4%) were satisfied.

Table 4. Cross-tabulation between responsiveness and patient satisfaction

Responsiveness Category	Not Satisfied	Satisfied	Total	Satisfaction Proportion
Poor responsiveness	37	2	39	5.1
Good responsiveness	34	23	57	40.4
Total	71	25	96	26.0

Respondents who perceived hospital responsiveness as good had 12.51 times higher crude odds of being satisfied than those who perceived responsiveness as poor (95% CI: 2.74–57.11). Fisher’s exact test indicated a statistically significant association between perceived responsiveness and patient satisfaction ($p < 0.001$). The chi-square test also showed a significant association ($\chi^2 = 14.92$, $p < 0.001$).

Table 5. Statistical association between responsiveness and patient satisfaction

Analysis	Estimate	95% CI	p-value
Crude odds ratio	12.51	2.74–57.11	<0.001
Chi-square test	$\chi^2 = 14.92$	—	<0.001
Fisher’s exact test	—	—	<0.001

Correlation Between Responsiveness and Satisfaction Scores

Responsiveness scores were positively correlated with patient satisfaction scores using both Pearson’s correlation ($r = 0.681$, $p < 0.001$) and Spearman’s rank correlation ($\rho = 0.600$, $p < 0.001$).

Table 6. Correlation between responsiveness and patient satisfaction scores

Correlation Method	Coefficient	p-value
Pearson correlation	$r = 0.681$	<0.001
Spearman correlation	$\rho = 0.600$	<0.001

DISCUSSION

This study found a statistically significant association between perceived hospital responsiveness and patient satisfaction among outpatient JKN users at Undata General Hospital Palu. Respondents who perceived hospital responsiveness as good had 12.51 times higher crude odds of being satisfied than those who perceived responsiveness as poor. Responsiveness scores were also positively correlated with satisfaction scores using both Pearson’s and Spearman’s correlation analyses. These findings support the study hypothesis that better perceived responsiveness is associated with higher patient satisfaction.

This finding is consistent with the SERVQUAL framework, in which responsiveness is considered one dimension of perceived service quality. Responsiveness reflects the willingness, promptness, and readiness of health workers to assist patients, provide information, respond to complaints, and meet patient needs. In hospital settings, these service processes are important because patients evaluate care not only through clinical outcomes but also through how quickly, respectfully, and clearly services are delivered (Unger et al., 2020a, 2020b). Previous SERVQUAL-based hospital studies have similarly reported positive associations between responsiveness and patient satisfaction, although the strength of the association may vary across settings, populations, and measurement instruments (Darzi et al., 2023; Rahmatia et al., 2025; Zareen et al., 2024).

Although responsiveness was significantly associated with satisfaction, the descriptive findings show that responsiveness alone does not fully explain patient satisfaction. A majority of respondents perceived responsiveness as good, but only 26.0% were categorized as satisfied. In addition, more than half of respondents who perceived responsiveness as good were still categorized as not satisfied. This pattern indicates that patient satisfaction is broader than responsiveness and may also be shaped by other service-quality dimensions, including reliability, assurance, empathy, tangibles, administrative processes, waiting time, service accessibility, and perceived care outcomes (Ali et al., 2021; Bastola, 2023; Darzi et al., 2023).

From a practical perspective, the findings indicate that hospital managers should treat responsiveness as a priority area for service-quality improvement. Responsiveness is modifiable through organizational intervention, unlike many sociodemographic factors. Evidence-based strategies include redesigning service workflows to reduce waiting time, improving front-line communication, strengthening complaint-response mechanisms, training staff in compassionate and proactive patient engagement, and using performance dashboards to monitor response time and satisfaction indicators (Darko, Aguadze, & Dabuo, 2026; Karume, Nyongesa, Okutoyi, & Kinuthia, 2025; Selvarajah, Yamamoto, Saw, Kariya, & Hamajima, 2021; Singh & Dixit, 2020; Upreti, 2025). Responsiveness improvement should also be integrated with reliability, assurance, empathy, and tangibles because satisfaction tends to improve when patients receive timely service, accurate information, respectful interaction, and consistent care processes (Akinyinka, Oluwole, & Odusanya, 2020; Kagura et al., 2023; Rahim, Ibrahim, Musa, Chua, & Yaacob, 2021b, 2021a; Upreti, 2025).

This study has several limitations. First, the cross-sectional design does not allow conclusions about temporality or causality. Second, the study used accidental sampling and included only 96 outpatient JKN users from one public hospital, which may limit generalizability. Third, responsiveness and satisfaction were measured using self-reported Likert-scale items, which may be affected by response bias and common-method bias. Fourth, the 75% threshold used to categorize responsiveness and satisfaction was study-defined; therefore, the classification may not be directly comparable with studies using different cut-off points. Fifth, the study focused only on responsiveness and did not assess all SERVQUAL dimensions. Finally, formal ethical approval was not obtained, although participation was voluntary, informed consent was obtained, and responses were analyzed anonymously. This should be considered when interpreting the findings.

Future studies should include larger and more diverse patient samples, assess all SERVQUAL dimensions, and consider adjusted analyses to account for potential confounding factors. Longitudinal or intervention-based designs are also recommended to examine whether improvements in responsiveness are followed by changes in patient satisfaction over time.

CONCLUSION

This study found a significant association between perceived hospital responsiveness and patient satisfaction among outpatient JKN users at Undata General Hospital Palu. Respondents who perceived hospital responsiveness as good had higher crude odds of being satisfied than those who perceived responsiveness as poor. These findings indicate that responsiveness is an important component of hospital service quality.

However, the relatively low proportion of satisfied respondents despite generally favorable responsiveness ratings suggests that responsiveness alone does not fully explain patient satisfaction. Improvements in communication, timely assistance, responsiveness to patient complaints, and information delivery should therefore be integrated with broader service-quality improvement efforts addressing other dimensions of care.

Future research should include larger and more diverse samples, evaluate all SERVQUAL dimensions, and consider longitudinal designs and adjusted analyses to provide a more comprehensive understanding of the factors associated with patient satisfaction.

Author's Contribution Statement: **Muhammad Syukran:** conceptualization, study design, methodology, data analysis, interpretation of findings, manuscript drafting, and final revision. **Maudiah Nabila Putri:** data collection, data organization, literature review, manuscript preparation, and revision. **Munir Salham:** methodological review, supervision, validation of study design, interpretation of findings, and critical revision. **Sudirman:** supervision, review of analytical approach, interpretation of results, and critical intellectual revision. **Mohamad Andri:** data validation, statistical analysis support, interpretation of findings, and manuscript review. **Intan Fitrah Andini:** data checking, literature review, manuscript preparation, and revision. All authors read and approved the final manuscript and agree to be accountable for all aspects of the work.

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REFERENCES

- Adzinyo, O. A., Dzansi, D. Y., & Strydom, A. J. (2024). Service Quality Facets and Hotel Customer Retention in Ghana: Evidence From the Volta Region. *International Journal of Research in Business and Social Science* (2147-4478), 13(2), 72–83. <https://doi.org/10.20525/ijrbs.v13i2.3162>
- Akinyinka, M., Oluwole, E. O., & Odusanya, O. O. (2020). Predictors of Client Satisfaction Among Recent Users of Health Services in Lagos, Nigeria. *Health Services Insights*, 13. <https://doi.org/10.1177/1178632920934499>
- Ali, S. R. O., Norizan, S. N., Said, N. S. M., Mat, K. A., & Jislan, F. (2021). Assessing Customer Satisfaction Towards Service Quality in the Hospitality Industry. *Jurnal Intelek*, 16(1), 67–73. <https://doi.org/10.24191/ji.v16i1.365>
- Almadani, A. H., Alghamdi, A. H., Alkathiri, M. A., Albuqami, F. H., Alrahmah, S. A., Aljumah, K. A., ... Aljaffer, M. A. (2026). Medication Adherence, Treatment Satisfaction, and Patient–doctor Relationship in Patients With Mood Disorders at a Saudi Tertiary Care Hospital: A Cross-Sectional Study. *Frontiers in Psychiatry*, 16. <https://doi.org/10.3389/fpsy.2025.1695769>
- Bastola, A. (2023). Tourist Satisfaction in the Homestay of Nepal: Case Study of Namje Community Homestay. *Journal of Management*, 6(1), 31–46. <https://doi.org/10.3126/jom.v6i1.58879>
- Bhaladhare, R., & Rishipathak, D. P. (2023). Emerging Trends on Quality of Care in the Healthcare Sector: A Systematic Review. *Interciencia*. <https://doi.org/10.59671/k7lyg>
- Cavicchi, C., Oppi, C., & Vagnoni, E. (2022). Back and Forth on Sustainable Development: A Focus on Healthcare Organisations. *Sustainability*, 14(9), 4958. <https://doi.org/10.3390/su14094958>
- Darko, G., Aguadze, C., & Dabuo, P. (2026). Assessment of Hospital Overcrowding Perceptions and Outpatient Care Quality Among Hypertensive Patients in Mampong, Ghana: A Cross-Sectional Study. *Health Science Reports*, 9(4). <https://doi.org/10.1002/hsr.2.72322>
- Darzi, M. A., Islam, S. B., Khursheed, S., & Bhat, S. A. (2023). Service Quality in the Healthcare Sector: A Systematic Review And meta-Analysis. *LBS Journal of Management & Research*, 21(1), 13–29. <https://doi.org/10.1108/lbsjmr-06-2022-0025>
- Endeshaw, B. (2020). Healthcare Service Quality-Measurement Models: A Review. *Journal of Health Research*, 35(2), 106–117. <https://doi.org/10.1108/jhr-07-2019-0152>
- Jaleel, A. A., Yajid, M. S. A., Khatibi, A., & Azam, S. M. F. (2022). Examining Service Quality of Hospitals in India, Sri Lanka, Thailand, and Malaysia: Case of Outbound Medical Travelers From the Maldives. *Polaris Global Journal of Scholarly Research and Trends*, 1(1), 61–77. <https://doi.org/10.58429/pgjsrt.v1n1a92>
- Jalenques, I., Rondepierre, F., Rachez, C., Lauron, S., & Guiguet-Auclair, C. (2020). Health-Related Quality of Life Among Community-Dwelling People Aged 80 years and Over: A Cross-Sectional Study in France. *Health and Quality of Life Outcomes*, 18(1). <https://doi.org/10.1186/s12955-020-01376-2>
- Kagura, J., Khamisa, N., Zingoni, Z. M., Dulaze, N., Awuku-Larbi, Y., & Tshuma, N. (2023). Patient Satisfaction With Chronic Disease Care and Its Associated Factors in Primary Health Care Facilities in Johannesburg, South Africa. *Frontiers in Health Services*, 3. <https://doi.org/10.3389/frhs.2023.967199>

- Karume, A. K., Nyongesa, K., Okutoyi, L., & Kinuthia, J. (2025). Patient's Expectations and Perceptions on Quality of Care; An Evaluation Using SERVQUAL Gap in Kenya. *Plos One*, 20(3), e0315910. <https://doi.org/10.1371/journal.pone.0315910>
- Ko, C.-H., & Chou, C. (2020). Apply the SERVQUAL Instrument to Measure Service Quality for the Adaptation of ICT Technologies: A Case Study of Nursing Homes in Taiwan. *Healthcare*, 8(2), 108. <https://doi.org/10.3390/healthcare8020108>
- Kubota, T., Kuroda, N., Horinouchi, T., Ikegaya, N., Kitazawa, Y., Kodama, S., ... Sone, D. (2022). Barriers to Telemedicine Among Physicians in Epilepsy Care During the COVID-19 Pandemic: A National-Level Cross-Sectional Survey in Japan. *Epilepsy & Behavior*, 126, 108487. <https://doi.org/10.1016/j.yebeh.2021.108487>
- Lee, S. M., & Lee, D. (2022). Developing Green Healthcare Activities in the Total Quality Management Framework. *International Journal of Environmental Research and Public Health*, 19(11), 6504. <https://doi.org/10.3390/ijerph19116504>
- Liu, D., Chen, X., & Li, Z. (2025). Developing a Model for Evaluating and Improving the Quality of Healthcare Services. *BMC Health Services Research*, 25(1). <https://doi.org/10.1186/s12913-025-13405-1>
- Morales-Garrido, A., Valderrama-Pazos, B., García-Carranza, J., Horna-Velásquez, A., Reyes-Anticona, W., Estela-Vargas, A., & Rojas-Villacorta, W. (2025). Quality and Satisfaction in Health Care: A Case Study of Two Public Hospitals in Trujillo, Peru. *International Journal of Environmental Research and Public Health*, 22(7), 1119. <https://doi.org/10.3390/ijerph22071119>
- Noorossana, R., Delshad, A. T., & Nayeypour, M. R. (2021). Determinants of Patient Satisfaction With Hospital Service Quality in the Context of Iranian Health Care Market. *International Journal of Operations and Quantitative Management*, 27(3), 287. <https://doi.org/10.46970/2021.27.3.6>
- Overmark, T. (2025). Impact of Resident Versus Specialist Performed Cervical Spine Surgery. *Brain and Spine*, 5, 105864. <https://doi.org/10.1016/j.bas.2025.105864>
- Perera, S. C., & Dabney, B. W. (2020). Case Management Service Quality and Patient-Centered Care. *Journal of Health Organization and Management*, 34(5), 551–568. <https://doi.org/10.1108/jhom-12-2019-0347>
- Pipan, R. (2022). Gender Differences in Employee-Turnover Predictors in Organisations Facing a Crisis. *Ruo*, 11(2). <https://doi.org/10.37886/ruo.2022.006>
- Providence, S., Cissy, K., & Munyengabe, S. (2022). Hospital Service Quality and Patients' Satisfaction Within Soddo Christian Hospital PLC, Walaitta Region, Southwestern Ethiopia. *Kibogora Polytechnic Scientific Journal*, 2(1), 1–20. <https://doi.org/10.33618/kpscj.2022.01.03>
- Rahim, A. I. A., Ibrahim, M. I., Musa, K. I., Chua, S.-L., & Yaacob, N. M. (2021a). Assessing Patient-Perceived Hospital Service Quality and Sentiment in Malaysian Public Hospitals Using Machine Learning and Facebook Reviews. *International Journal of Environmental Research and Public Health*, 18(18), 9912. <https://doi.org/10.3390/ijerph18189912>
- Rahim, A. I. A., Ibrahim, M. I., Musa, K. I., Chua, S.-L., & Yaacob, N. M. (2021b). Patient Satisfaction and Hospital Quality of Care Evaluation in Malaysia Using SERVQUAL and Facebook. *Healthcare*, 9(10), 1369. <https://doi.org/10.3390/healthcare9101369>
- Rahmatia, S., Basri, M., Adi, S., Nasrullah, N., & Ahmad, A. (2025). Service Quality in Hospital Inpatient Care: SERVQUAL Model Approach. *Health Sa Gesundheit*, 30. <https://doi.org/10.4102/hsag.v30i0.3055>
- Selvarajah, T. M., Yamamoto, E., Saw, Y. M., Kariya, T., & Hamajima, N. (2021). Caregivers' Perspective: Satisfaction With Healthcare Services at the Paediatric Specialist Clinic of the National Referral Centre in Malaysia. <https://doi.org/10.1101/2021.08.03.21261517>
- Singh, D., & Dixit, K. (2020). Measuring Perceived Service Quality in Healthcare Setting in Developing Countries: A Review for Enhancing Managerial Decision-Making. *Journal of Health Management*, 22(3), 472–489. <https://doi.org/10.1177/0972063420963407>

- Singleton, I. M., Garfinkel, R. J., Malone, J., Temkit, M., & Belthur, M. V. (2020). Determinants of Caregiver Satisfaction in Pediatric Orthopedics. *Journal of Pediatric Orthopaedics B*, 30(4), 393–398. <https://doi.org/10.1097/bpb.0000000000000778>
- Sugai, K., Tsuji, O., Takahashi, S., Matsumoto, M., Nakamura, M., & Fujita, N. (2021). Internet Survey on Factors Associated With Care-Seeking Behaviours of People With Chronic Musculoskeletal Pain in Japan. *Journal of Orthopaedic Surgery*, 29(3). <https://doi.org/10.1177/23094990211044836>
- Temory, M. D. (2024). The Effect of Service Quality on Customer Satisfaction and Loyalty: A Case Study of Hotel Industry in Afghanistan. *International Journal of Business and Management Review*, 12(5), 21–38. <https://doi.org/10.37745/ijbmr.2013/vol12n52138>
- Unger, J., Morales, I., & Paepe, P. D. (2020a). A Plea to Merge Clinical and Public Health Practices: Reasons and Consequences. *BMC Health Services Research*, 20(S2). <https://doi.org/10.1186/s12913-020-05885-0>
- Unger, J., Morales, I., & Paepe, P. D. (2020b). Neo-Hippocratic Healthcare Policies: Professional or Industrial Healthcare Delivery? A Choice for Doctors, Patients, and Their Organisations. *BMC Health Services Research*, 20(S2). <https://doi.org/10.1186/s12913-020-05890-3>
- Uprety, V. (2025). Assessing Patient Satisfaction by Measuring Service Quality in Outpatient Service of a Public Hospital in Bagmati Province, Nepal. *Public Health Challenges*, 4(4). <https://doi.org/10.1002/puh2.70143>
- Zareen, H., Shah, S. H., & Bashir, B. (2024). An Investigation of Customer Satisfaction of Hospitality Industry in Islamabad Through Servqual Model. *International Journal of Advanced Multidisciplinary Research and Studies*, 4(4), 500–526. <https://doi.org/10.62225/2583049x.2024.4.4.3067>