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The Influence of E-Service Quality on Patient Satisfaction and Loyalty in Hospitals: A Systematic Literature Review Using the PRISMA Framework in 2020-2025

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ABSTRAK

Latar Belakang: Meskipun teknologi digital di sektor kesehatan berkembang pesat, penelitian mengenai *e-service quality* masih menunjukkan inkonsistensi pada variabel kepuasan dan loyalitas pasien. Kesenjangan ini memerlukan sintesis sistematis mengenai mekanisme *e-service quality* dalam memberikan pengalaman pasien di rumah sakit. **Tujuan:** Penelitian ini bertujuan menganalisis pengaruh *e-service quality* terhadap kepuasan dan loyalitas pasien dengan bukti empiris pada sektor kesehatan. **Metode:** *Systematic Literature Review* dilakukan pada Oktober 2025 menggunakan panduan PRISMA. Artikel diperoleh dari ScienceDirect, PubMed, ProQuest, dan Google Scholar dengan total 14.273 temuan awal. Setelah proses penghilangan duplikasi, penyaringan judul-abstrak, dan penilaian kelayakan *full-text*, artikel disertakan bila memenuhi kriteria inklusi: (1) sektor rumah sakit, (2) menguji e-service quality dan dimensinya, (3) mengukur kepuasan dan loyalitas pasien sebagai variabel hasil, (4) menggunakan pendekatan empiris kuantitatif, dan (5) tersedia dalam bentuk full-text berbahasa Inggris dan Indonesia. Kriteria eksklusi meliputi artikel konseptual, non-kesehatan, non-pasien, dan studi non-empiris. **Hasil:** Sebagian besar studi menggunakan kerangka E-S-QUAL yang menunjukkan hubungan positif antara *e-service qua*lity dan kepuasan pasien dengan mediasi berupa kepercayaan, kegunaan, keandalan sistem, dan pengalaman emosional. Loyalitas pasien terutama terbentuk melalui kepuasan, niat menggunakan kembali layanan digital rumah sakit, dan peningkatan persepsi nilai layanan elektronik. **Kesimpulan:** *E-service quality* memiliki peran dalam meningkatkan kepuasan dan loyalitas pasien di lingkungan rumah sakit. Tinjauan ini dibatasi oleh jumlah studi dan dominasi penelitian dari wilayah tertentu sehingga diperlukan penelitian lintas negara yang lebih luas.

ABSTRACT

Background: *Although digital technologies in the healthcare sector are rapidly advancing, research on e-service quality still shows inconsistencies in its effects on patient satisfaction and loyalty. This gap shows the need for a systematic synthesis to clarify the mechanisms through which e-service quality shapes patient experiences in hospital settings.* ***Objective:*** *This study aims to analyze the influence of e-service quality on patient satisfaction and patient loyalty by integrating empirical evidence from the healthcare sector.* ***Methods:*** *A Systematic Literature Review was conducted in October 2025 using the PRISMA guidelines. Articles were retrieved from ScienceDirect, PubMed, ProQuest, and Google Scholar, yielding a total of 14,273 initial records. After deduplication, title-abstract screening, and full-text eligibility assessment, studies were included if they met the following criteria: (1) conducted in hospital settings, (2) examined e-service quality and its dimensions, (3) measured patient satisfaction and patient loyalty as outcome variables, (4) employed a quantitative empirical design, and (5) were available in full-text in English or Indonesian. Exclusion criteria consisted of conceptual papers, non-healthcare settings, non-patient samples, and non-empirical studies.* ***Results:*** *Most studies adopted the E-S-QUAL framework and showed positive relationships between e-service quality and patient satisfaction, mediated by trust, usability, system reliability, and emotional experience. Patient loyalty was primarily driven by satisfaction, intention to reuse digital hospital services, and enhanced perceptions of electronic service value.* ***Conclusion:*** *E-service quality plays a significant role in improving patient satisfaction and loyalty in hospital environments. This review is limited by the number of included studies and the dominance of research from specific regions, showing the need for broader cross-country investigations.*

INTRODUCTION

The development of information and communication technology has brought major changes to the healthcare service sector, particularly through the emergence of electronic service systems or e-services (Danu *et al*., 2023). In hospitals, the implementation of e-service quality is increasingly needed because it is directly related to patients' perceptions, experiences, and satisfaction with the services they receive. According to Liu *et al*. (2020), the growing public demand for healthcare services encourages service providers to continuously improve service quality to meet patient expectations. Patients now assess the ease, speed, and effectiveness of digital services provided by hospitals in addition to clinical aspects (Khanbhai *et al*., 2019). This is becoming more relevant as today's patients rely on digital technologies such as online consultations, doctor appointment queues, and access to electronic medical records (Manarte, 2024). The integration of advanced health technologies can enhance the efficiency, accuracy, and accessibility of medical services (Sinha, 2024).

Patient satisfaction is one of the indicators of the success of hospital-provided e-services. Xing *et al*. (2020) explain that satisfaction with online consultations demonstrates the success of medical services because digital interactions determine the extent to which medical personnel can meet patient expectations. In line with this, studies on internet-based hospitals currently focus on three aspects: medical service capacity, system optimization, and service system construction (Wu *et al*., 2024). In terms of service capacity, hospital e-services can improve the accessibility of medical resources through innovative service models such as telemedicine collaborations, which enable patients in remote areas to obtain specialist services (Williams *et al*., 2023).

The quality of digital services perceived by patients is also strongly associated with their experience during medical service delivery. Tanya *et al*. (2023) found that good service quality improves patient experience and influences satisfaction as well as the intention to reuse the service. Aspects such as ease of navigation, response speed, and data security play important roles in shaping positive perceptions of hospitals (Emon *et al*., 2023). The implementation of ICT in the health sector also helps medical personnel improve service quality through accurate data collection, storage, and analysis, reducing the risk of human error (Peres *et al*., 2022; Adeyemi *et al*., 2024). Easy access to personal health information through digital systems further enhances patient trust and participation in medical decision-making (Singh *et al*., 2022; Dahl *et al*., 2021). Additionally, e-service implementation reduces operational costs, increases efficiency, and encourages patient loyalty (Kamariotou *et al*., 2017).

One of the digital services widely appreciated by patients is the online booking system or e-booking. Motulsky *et al*. (2023) explain that e-booking makes it easier for patients to register without having to visit hospitals directly, thereby reducing waiting times and queues. Patient loyalty, as the ultimate goal of implementing e-service quality, is defined as the willingness of patients to refrain from switching to other service providers (Hidayat & Idrus, 2023). Loyalty can be observed through repeat usage behavior and the intention to recommend the hospital to others (Nguyen *et al*., 2021; Widyawati & Widowati, 2021). Patient experience is the main driver of revisit intention, which strengthens long-term loyalty (Pighin *et al*., 2022), and positive experiences also enhance clinical outcomes and institutional reputation (Marzban *et al*., 2022).

Although some studies show a positive relationship between e-service quality, satisfaction, and patient loyalty, findings across studies remain inconsistent regarding which dimensions are most dominant and the mechanisms through which these effects occur. Some studies emphasize system efficiency, while others highlight trust, experience, and technological reliability. There is still no systematic review that comprehensively integrates these findings in the hospital context. Furthermore, no studies have compared how e-service quality influences the two variables which are satisfaction and loyalty. Therefore, a Systematic Literature Review (SLR) is needed to identify, synthesize, and structurally analyze empirical evidence regarding the influence of e-service quality on patient satisfaction and loyalty. This SLR contributes:

1) Integrating recent empirical findings related to e-service quality dimensions;
2) Identifying the mechanisms of influence on satisfaction and loyalty;
3) Providing recommendations for the development of hospital digital services.

RESEARCH METHOD

This study employed a Systematic Literature Review (SLR) approach following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines, and it was carried out in October 2025. Article searches were conducted through four credible databases available on the e-resources of the National Library of the Republic of Indonesia, namely ScienceDirect, PubMed, ProQuest, and Google Scholar. The search process used combinations of keywords and Boolean operators, including "*e-service quality*," "*patient satisfaction*," "*patient loyalty*," and "*hospital*," as well as query variations such as "digital health service quality" (satisfaction OR loyalty) AND hospital and "E-S-QUAL" AND patient AND hospital, with adjustments made to each database's query format to ensure replicability. The initial search produced a total of 14,273 articles, consisting of 1,785 articles from ScienceDirect, 93 from PubMed, 4,775 from ProQuest, and 7,620 from Google Scholar. All articles then underwent

automatic and manual deduplication.

The next stage was title and abstract screening based on inclusion criteria, which consisted of quantitative empirical studies conducted in hospitals or healthcare settings, testing e-service quality (including the E-S-QUAL instrument), measuring patient satisfaction and patient loyalty, available in full text in English or Indonesian, and published between 2021-2025. At this stage, 13,299 articles were eliminated because they were irrelevant to e-service quality, not quantitative studies, did not use patient samples, or were not conducted in hospitals, leaving 974 articles for full-text screening. At the eligibility stage, 966 articles were excluded because they did not examine satisfaction or loyalty, did not directly measure e-service quality, did not provide complete empirical data, or were not conducted on hospital patients. After completing all PRISMA procedures, only 8 articles m*et al*l methodological and substantive criteria to be included in the final analysis. The limited number of articles was mainly due to many publications that did not measure core variables, did not use quantitative methods, or did not explicitly apply e-service quality instruments.

All selected articles were then assessed for quality using the Mixed Methods Appraisal Tool (MMAT 2018), considering design appropriateness, instrument quality, data collection methods, analytical rigor, and clarity of reporting. All articles were categorized as high quality (75-100%). The data extraction process was conducted independently using Microsoft Excel with a PRISMA template, including information on authors and publication year, country of study, sample size, research design, e-service quality instruments used, analysis techniques, and key findings such as β coefficients and p-values related to the relationships among e-service quality, patient satisfaction, and patient loyalty.

RESULTS

The systematic review process based on PRISMA guidelines was carried out through the stages of identification, screening, eligibility, and inclusion. From the literature search, eight articles were found to meet the inclusion criteria and align with the objectives of the study. All selected articles were then grouped into two main themes to facilitate identification and analysis, as presented in Table 1 and Table 3.

The first theme includes four articles (Table 1) focusing on the influence of patient satisfaction in e-service. The first article explains that integrated e-healthcare services contribute to improving patients' positive perceptions of online services. The second article discusses the influence of emotional, functional, social, and trust dimensions, which significantly shape patient satisfaction and loyalty. The third article examines how positive experiences and technical quality of AI-based services such as fulfillment and privacy enhance satisfaction in online consultations. The fourth article highlights ease of use and perceived usefulness as factors that increase patient satisfaction with hospital digital services.

The second theme consists of four articles (Table 3) focusing on the influence of patient loyalty in e-service. The fifth article shows that e-service quality has a significant effect on patient loyalty, with satisfaction acting as a partial mediator. The sixth article discusses how technology integration and service quality improve patient experience, which in turn drives revisit intention. The seventh article indicates that digital service quality and hospital applications have a strong contribution to maintaining patient loyalty. The eighth article states that service quality is the primary factor shaping loyalty, while digital experience serves as a supporting factor. Meanwhile, Table 2 and Table 4 contain the extracted data from each selected article. Figure 1 shows the PRISMA flow diagram in the systematic literature review.

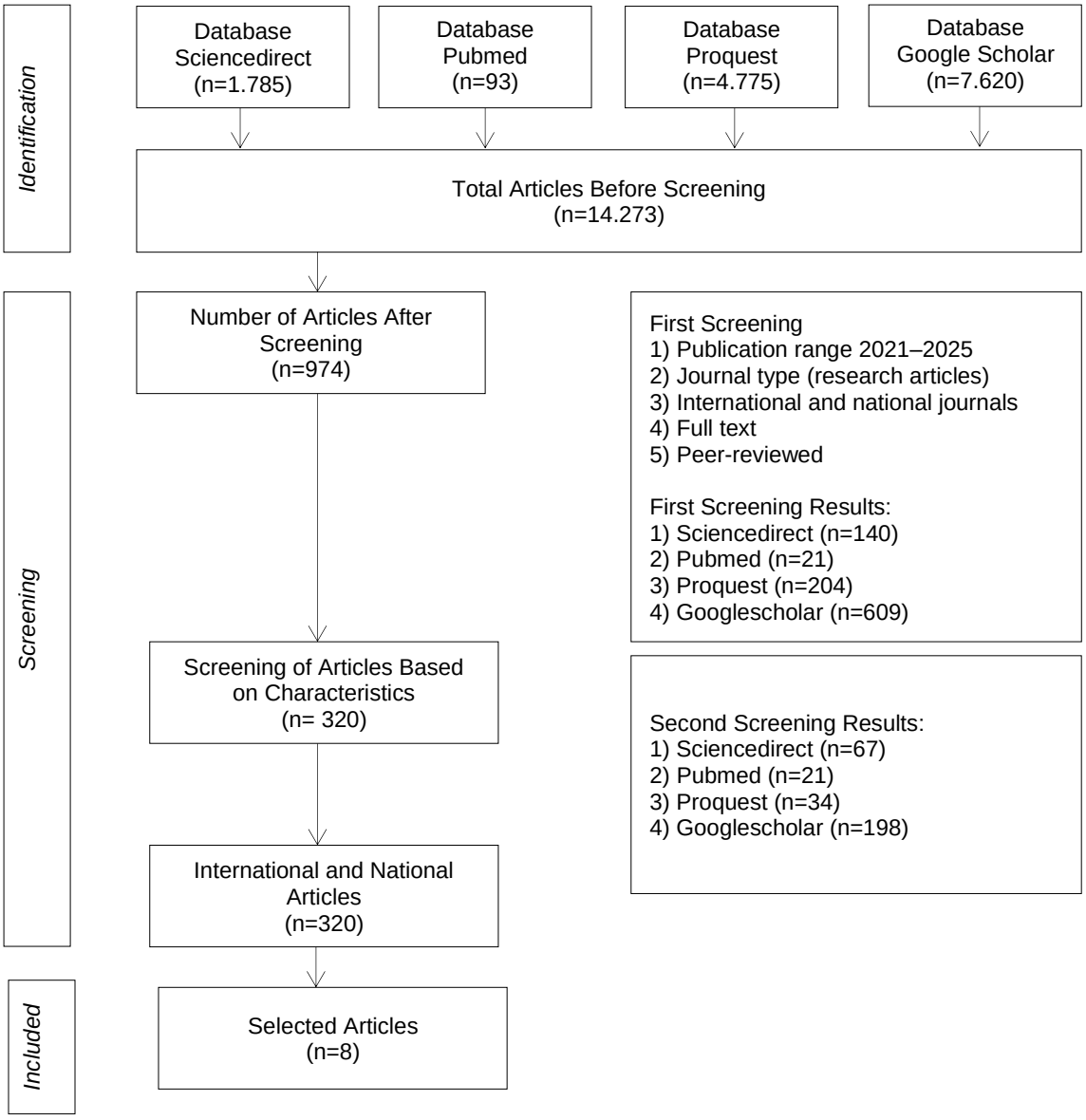

Figure 1. PRISMA Diagram

Table 1. Thematic Analysis (n=4)

Theme	Article Number
Improving patient satisfaction through integrated services	1
Emotional, functional, social, and trust dimensions influence patient satisfaction and loyalty	2
Technical quality and positive user experience enhance satisfaction in online consultation services	3
Ease of use and perceived usefulness of digital services increase patient satisfaction	4

Table 2. Data Extraction (n=4)

No	Title, Authors, Year	Sample, Instruments, and Research Design	Results
1	Classification of reviews of e-healthcare services to improve patient satisfaction: Insights from an emerging economy (Dhakate & Joshi, 2023). Nikhil Dhakate, Rohit Joshi, 2023.	Sample: 36,468 patient reviews of 343 doctors across 10 medical specialties in India. Instruments: Sentiment analysis using Microsoft Excel Azure Machine Learning to classify positive, neutral, and negative sentiments. Design: Quantitative content analysis based on sentiment classification of online patient reviews.	The results show an average sentiment score of 0.51208 (neutral category), with 17,465 positive and 14,417 negative responses. Although overall sentiment tends to be neutral, patients provided more positive feedback toward online services. The study produces a systemic approach to e-healthcare services by integrating technical, service, and marketing factors to enhance online patient satisfaction.
2	Impact of Service Quality on In-Patients' Satisfaction, Perceived Value, and Customer Loyalty: A Mixed-Methods Study from a Developing Country (Nguyen *et al*., 2024). Nhi Xuan Nguyen, Khoa Tran, Tuyet Anh Nguyen, 2024.	Sample: 373 in-patients at a private hospital in Vietnam (5 qualitative, 368 quantitative). Instruments: Structured questionnaire and Structural Equation Modeling (SEM). Design: Mixed-methods with qualitative and quantitative analyses (EFA, CFA, and SEM).	Four main service quality dimensions were identified: emotion, function, social influence, and trust. Social influence had the strongest effect on patient satisfaction ($\beta = 0.324$; $p = 0.000$), followed by emotion ($\beta = 0.118$; $p = 0.008$). The study confirms that patient satisfaction and perceived value significantly influence customer loyalty (word-of-mouth and revisit intention).
3	How AI-powered consultation services in internet hospitals influence patient satisfaction: A structural analysis (Wang *et al*., 2024). Junkai Wang, Linru Fu, Zeguang Huang, Kan Hu, Zhizhuo Lin, Qiuhong Tang, 2024.	Sample: 1,113 patients using AI consultation services in an internet hospital in China. Instruments: Questionnaire based on the E-SQUAL model and Patient Experience-Driven Model. Design: Cross-sectional survey with Structural Equation Modeling (SEM).	Both technical and experiential pathways had significant influences on satisfaction. Fulfillment and privacy were major contributors on the technical side, while service encounter and positive emotions acted as key mediators. Positive emotions strengthened the effect of perceived value on satisfaction, whereas reducing negative emotions decreased patient dissatisfaction.
4	Digital Service Platform and Innovation in Healthcare: Measuring Users' Satisfaction and Implications (Kitsios *et al*., 2024).	Sample: 142 users of the online appointment system (e-appointment) at Papageorgiou Hospital, Thessaloniki, Greece. Instruments: Questionnaire, Cronbach's α reliability test,	Ease of use ($\beta = 0.622$; $p = 0.000$) and perceived usefulness ($\beta = 0.518$; $p = 0.000$) significantly influenced patient satisfaction. However, website quality and service quality showed no significant

	Fotis Kitsios, Stavros Stefanakakis, Maria Kamariotou, Lambros Dermentzoglou, 2024.	and multiple regression analysis. Design: Cross-sectional quantitative study.	effect. The results indicate that ease of use and perceived usefulness are key factors in increasing satisfaction with hospital digital services.

Tabel 3. Thematic Analysis (n=4)

Theme	Article Number
Improving electronic service quality enhances and builds patient loyalty in hospitals	5, 7, 8
Integration of technology and service quality drives loyalty through revisit intention	6

Table 4. Data Extraction (n=4)

No	Title, Authors, Year	Sample, Instruments, and Research Design	Results
5	E-Service Quality, Trust and Satisfaction on Consumer Loyalty at Hospital (Indayani *et al*., 2023). Lilik Indayani, Sumartik, Galuh Ratmana Hanum, Taskia Putri Adinda, Adelia Eva Viranti.	Sample: 120 respondents from Siti Khodijah Hospital, Sidoarjo. Instrument: 20-item questionnaire (indicators of e-service quality, trust, satisfaction, loyalty). Design: Descriptive quantitative with SEM PLS Wrap 3.0.	E-service quality significantly influences patient loyalty (β = 0.674, p = 0.002). Patient satisfaction acts as a partial mediator between e-service quality and loyalty (VAF < 80%). Improving electronic service quality enhances patient satisfaction and loyalty.
6	The Impact of Hospital Service Technology and Service Quality on Patient Revisit Intention: Mediating Role of Patient Experience (Priyanto *et al*., 2025). Eko Budi Priyanto, Euis Rahayuningsih, Sarfilianty Anggiani.	Sample: 195 patients across five hospitals (1 public, 4 private) in Tangerang. Instrument: Questionnaire based on PLS-SEM. Design: Quantitative with PLS-SEM.	Hospital service quality and technology significantly affect patient experience, which increases revisit intention (β = 0.43, p < 0.05). Patient experience acts as a mediator between e-service quality and loyalty (revisit intention).
7	Analysis of Service Quality and Application Quality on Patient Loyalty in the Digital Era at Cicendo Eye Hospital, Bandung (Indriana *et al*., 2025).	Sample: 159 patients at Cicendo Eye Hospital, Bandung. Instrument: Questionnaire with indicators of service quality and application quality.	Service quality (X1) contributes 10% and application quality (X2) contributes 38% to patient loyalty. Both variables have positive and significant simultaneous effects. Digital service and application quality play key roles in maintaining patient loyalty in the digital era.

	Galih Indriana, Sri Suwarsi, Subhan Perkasa Sumadilaga.	Design: Descriptive-verificative with linear regression and F-test.	
8	Managing Patient Loyalty Through Digital Patient Experience (Pratami *et al*., 2025). Julia Famor Pratami, Vanessa Gaffar, Puspo Dewi Dirgantari, Chairul Furqon, Mari Maryati.	Sample: 214 patients at healthcare facilities in Indonesia. Instrument: Online questionnaire analyzed using SEM and CFA. Design: Explanatory quantitative study.	Service quality has a significant direct impact on patient loyalty (β = 0.632). Digital patient experience provides only a small indirect effect (β = 0.093), indicating it is not a strong mediator. Service quality remains the dominant factor determining patient loyalty, although digital experience provides support.

DISCUSSION

The Influence of E-Service Quality on Patient Satisfaction in Hospitals

Based on the results of the literature analysis, there are four factors that describe the influence of e-service quality on patient satisfaction in hospitals. First, integrated digital services can enhance patient experience and satisfaction. Dhakate and Joshi (2023), who analyzed 36,468 online reviews from patients about 343 doctors in India, found that the majority of patient responses were positive, with an average sentiment score of 0.51208. This reflects how a systemic approach to e-healthcare combining technical aspects, service delivery, and digital marketing strategies can create positive perceptions of service quality. This finding aligns with Kitsios *et al*. (2019), who stated that implementing an e-appointment system helps patients schedule and manage medical appointments more efficiently. Verma *et al*. (2022) also noted that service infrastructure quality, interactions, and service atmosphere play roles in shaping patient satisfaction. Sughra *et al*. (2021) added that improvements in patients' positive perceptions of online consultations can directly impact satisfaction with hospital services.

Second, the dimensions of emotion, function, social influence, and trust significantly affect patient satisfaction and loyalty. Nguyen *et al*. (2024) found in their study on private hospitals in Vietnam that social influence had the strongest impact on patient satisfaction (β = 0.324; p = 0.000), followed by emotional factors (β = 0.118; p = 0.008). Trust and the social value of digital services also strengthen the relationship between patients and healthcare providers. These results are consistent with Smailhodzic *et al*. (2016), who explained that interactions through social media can provide emotional and social support to patients, such as increased confidence and easier access to health services. Liu *et al*. (2021) further reinforced this finding by stating that customer satisfaction positively affects long-term trust and emotional bonds between patients and service providers. These social and emotional dimensions contribute to sustaining patient relationships with hospitals.

Third, technical quality and positive user experiences are factors that influence patient satisfaction in online consultation services. Wang *et al*. (2024) found that fulfillment and privacy had the greatest impact on patient satisfaction in AI-powered consultation services. Factors such as data security, service speed, and communication ease are determinants of perceived digital service quality. This finding

is supported by Alhammad *et al*. (2024), who stated that in technology-based health services, institutional assurance and system capabilities shape patient security more than direct emotional interactions with doctors. Similarly, Zhong *et al*. (2024) reported that good human-computer interaction can reduce patient anxiety during online consultations. This aligns with Heyn *et al*. (2023), who showed that positive emotions can encourage patients to form better evaluations of their service experiences.

Fourth, ease of use and perceived usefulness of digital services play significant roles in improving patient satisfaction. Handan (2016) found that patient satisfaction with e-appointment systems is influenced by two main factors: ease of use and perceived usefulness. These findings are supported by Kitsios and Kamariotou (2021), who stated that perceived usefulness is a key dimension in determining patient satisfaction with online appointment systems. Technical factors such as ease of navigation, access speed, and information accuracy contribute to creating a satisfying user experience. Patients who find digital systems easy to use and beneficial are more likely to evaluate hospital services positively. User-friendly e-health systems can reduce errors and increase service speed, as revealed in survey results by Kitsios *et al*. (2024).

Influence of E-Service Quality on Patient Loyalty in Hospitals

Based on the results of the literature analysis, there are two main influences of e-service quality on patient loyalty in hospitals. First, the improvement of electronic service quality plays a role in building and maintaining patient loyalty. Indayani *et al*. (2023) examined 120 respondents at Siti Khodijah Hospital Sidoarjo and found that e-service quality significantly influences patient loyalty ($\beta = 0.674$, $p = 0.002$), with patient satisfaction as a partial mediating variable. Good electronic services not only increase satisfaction but also foster trust that leads to long-term loyalty. This is consistent with the study by Indriana *et al*. (2025) at Cicendo Eye Hospital Bandung, where service quality and hospital application quality positively influenced patient loyalty by 10% and 38%, respectively. Furthermore, Pratami *et al*. (2025) stated that digital service quality has a direct and significant effect on patient loyalty ($\beta = 0.632$). Although digital patient experience has a small indirect effect ($\beta = 0.093$), service quality remains a key component shaping patient loyalty toward the hospital. Thus, satisfaction and trust arising from e-services play a role in strengthening loyalty, even though user experience has not fully become a dominant factor. This aligns with Satti *et al*. (2019), who mentioned that improved service quality can attract new customers while retaining existing ones through the development of trust and long-term comfort.

Second, the integration of technology and service quality drives patient loyalty through revisit intention. Priyanto *et al*. (2025) conducted a study on 195 patients in five hospitals in Tangerang using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The findings show that service quality and technology significantly influence patient experience ($\beta = 0.43$, $p < 0.05$), which increases the intention to revisit. Thus, positive experiences during the service process become an important mediator between e-service quality and patient loyalty. The linkage between technology and patient experience is also supported by several related studies. According to Alowais *et al*. (2023), AI-based technology and predictive analytics can analyze large data quickly and accurately, supporting clinical decision-making and enhancing patient experience through evidence-based recommendations. Astier *et al*. (2020) noted that the impact of healthcare technology on patient experience is multidimensional and generally positive in terms of service speed and information accuracy. Zondag *et al*. (2024) added that the use of wearable devices, telehealth

platforms, AI applications, and automated systems provides a more personalized service experience and increases patients' sense of engagement in their own health.

CONCLUSION AND RECOMMENDATION

Based on the literature analysis, e-service quality has a significant influence on patient satisfaction and loyalty in hospitals. Patient satisfaction is shaped by four main aspects: integrated digital services, emotional and trust dimensions, technical quality and user experience, as well as ease of use of digital services. Integrated services provide comfort and efficiency in the service process, while emotional, social, and trust-related aspects strengthen long-term relationships between patients and hospitals. Technical quality such as data security, system speed, and human-computer interaction contributes to enhancing patients' positive experiences. Ease of use and perceived usefulness are key factors in creating a positive perception of hospital digital systems. Meanwhile, patient loyalty is formed through two mechanisms: the improvement of electronic service quality and the integration of technology into the service experience. High e-service quality strengthens patients' trust and attachment to the hospital, playing an important role in building long-term loyalty through revisit intention. The integration of technologies such as AI, telehealth, and automation systems can create more personalized and efficient service experiences.

It is recommended that hospitals continuously improve the quality of e-services by prioritizing responsive, user-friendly, and secure system innovations. The integration of technologies such as AI can create more efficient service experiences and enhance patient loyalty. Hospitals must also ensure that their digital systems maintain a high level of security so that patients feel safe and comfortable when using e-services.

DAFTAR PUSTAKA

Adeyemi, C., Adegoke, B. O., & Odugbose, T. (2024). The impact of healthcare information technology on reducing medication errors: A review of recent advances. *Int J Front Med Surg Res [online]*, *5*(2), 020-029.

Alhammad, N., Alajlani, M., Abd-Alrazaq, A., Epiphaniou, G., & Arvanitis, T. (2024). Patients' perspectives on the data confidentiality, privacy, and security of mHealth apps: systematic review. *Journal of Medical Internet Research*, *26*, e50715.

Alowais, S. A., Alghamdi, S. S., Alsuhebany, N., Alqahtani, T., Alshaya, A. I., Almohareb, S. N., & Albekairy, A. M. (2023). Revolutionizing healthcare: the role of artificial intelligence in clinical practice. *BMC medical education*, *23*(1), 689.

Astier, A., Carlet, J., Hoppe-Tichy, T., Jacklin, A., Jeanes, A., McManus, S., & Fitzpatrick, R. (2020). What is the role of technology in improving patient safety? A French, German and UK healthcare professional perspective. *Journal of Patient Safety and Risk Management*, *25*(6), 219-224.

Dahl, A. J., Milne, G. R., & Peltier, J. W. (2021). Digital health information seeking in an omni-channel environment: A shared decision-making and service-dominant logic perspective. *Journal of Business Research*, *125*, 840-850.

Danu, D. E. A., Supardi, S., Sutanto, S. T. J. P., & Riko, R. S. (2023). E-services: Implementation of digital-based public services in the 4.0 era. *Athena: Journal of Social, Culture and Society*, *1*(3), 87-92.

Dhakate, N., & Joshi, R. (2023). Classification of reviews of e-healthcare services to improve patient satisfaction: Insights from an emerging economy. *Journal of*

business research, *164*, 114015.
Emon, M. M. H., Khan, T., & Alam, M. (2023). Effect of Technology on Service Quality Perception and Patient Satisfaction-A study on Hospitals in Bangladesh. *International Journal of Research and Applied Technology (INJURATECH)*, *3*(2), 254-266.
Handan, Ç. A. M. (2016). The role of information technology in patient satisfaction. *Turkish Economic Review*, *3*(1), 91-102.
Heyn, L. G., Løkkeberg, S. T., Ellington, L., Van Dulmen, S., & Eide, H. (2023). Understanding the role of positive emotions in healthcare communication–A realist review. *Nursing Open*, *10*(6), 3447-3459.
Hidayat, K., & Idrus, M. I. (2023). The effect of relationship marketing towards switching barrier, customer satisfaction, and customer trust on bank customers. *Journal of Innovation and Entrepreneurship*, *12*(1), 29.
Indayani, L., Hanum, G. R., Adinda, T. P., & Viranti, A. E. (2022). E Service Quality, Trust and Satisfaction on Consumer Loyalty at Hospital: Kualitas Layanan Elektronik, Kepercayaan dan Kepuasan Terhadap Loyalitas Konsumen Rumah Sakit. *Procedia of Social Sciences and Humanities*, *3*, 1161-1165.
Indriana, G., Suwarsi, S., & Sumadilaga, S. P. (2025). Analysis Of Service Quality And Application Quality On Patient Loyalty In The Digital Era At Cicendo Eye Hospital, Bandung. *Jurnal Mutiara Ners*, *8*(2), 60-75.
Kamariotou, M., Kitsios, F., Madas, M., Manthou, V., & Vlachopoulou, M. (2017). Strategic Decision Making and Information Management in the Agrifood Sector. In *International Conference on Information and Communication Technologies in Agriculture, Food & Environment* (pp. 97-109). Cham: Springer International Publishing.
Khanbhai, M., Flott, K., Darzi, A., & Mayer, E. (2019). Evaluating digital maturity and patient acceptability of real-time patient experience feedback systems: systematic review. *Journal of Medical Internet Research*, *21*(1), e9076.
Kitsios, F., & Kamariotou, M. (2021). Job satisfaction behind motivation: An empirical study in public health workers. *Heliyon*, *7*(4).
Kitsios, F., Stefanakakis, S., Kamariotou, M., & Dermentzoglou, L. (2023). Digital service platform and innovation in healthcare: measuring users' satisfaction and implications. *Electronics*, *12*(3), 662.
Kitsios, F., Stefanakakis, S., Kamariotou, M., & Dermentzoglou, L. (2019). E-service Evaluation: User satisfaction measurement and implications in health sector. *Computer Standards & Interfaces*, *63*, 16-26.
Liu, S., Li, G., Liu, N., & Hongwei, W. (2021). The impact of patient satisfaction on patient loyalty with the mediating effect of patient trust. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *58*, 00469580211007221.
Liu, Y., Lee, J. M., & Lee, C. (2020). The challenges and opportunities of a global health crisis: the management and business implications of COVID-19 from an Asian perspective. *Asian Business & Management*, *19*(3), 277.
Manarte, L. (2024). Technology and access to healthcare with different scheduling systems: A scoping review. *Healthcare Informatics Research*, *30*(3), 194-205.
Marzban, S., Najafi, M., Agolli, A., & Ashrafi, E. (2022). Impact of patient engagement on healthcare quality: a scoping review. *Journal of patient experience*, *9*, 23743735221125439.
Motulsky, A., Bosson-Rieutort, D., Usher, S., David, G., Moreault, M. P., Gagnon, M. P., & Sicotte, C. (2023). Evaluation of a national e-booking system for medical

consultation in primary care in a universal health system. *Health Policy*, *131*, 104759.
Nguyen, N. X., Tran, K., & Nguyen, T. A. (2021). Impact of service quality on in-patients' satisfaction, perceived value, and customer loyalty: A mixed-methods study from a developing country. *Patient preference and adherence*, 2523-2538.
Nguyen, N. X., Tran, K., & Nguyen, T. A. (2021). Impact of service quality on in-patients' satisfaction, perceived value, and customer loyalty: A mixed-methods study from a developing country. *Patient preference and adherence*, 2523-2538.
Perez, H., Neubauer, N., Marshall, S., Philip, S., Miguel-Cruz, A., & Liu, L. (2022). Barriers and benefits of information communication technologies used by health care aides. *Applied clinical informatics*, *13*(01), 270-286.
Pighin, M., Alvarez-Risco, A., Del-Aguila-Arcentales, S., Rojas-Osorio, M., & Yáñez, J. A. (2022). Factors of the revisit intention of patients in the primary health care system in Argentina. *Sustainability*, *14*(20), 13021.
Pratami, J. F., Gaffar, V., Dirgantari, P. D., Furqon, C., & Maryati, M. (2023). Managing patient loyalty through digital patient experience. *Journal of Eastern European and Central Asian Research (Jeecar)*, *10*(4), 620-629.
Priyanto, E. B., Rahayuningsih, E., & Anggiani, S. (2025). The Impact of Hospital Service Technology and Service Quality on Patient Revisit Intention: Mediating Role of Patient Experience. *Paradoks: Jurnal Ilmu Ekonomi*, *8*(3), 209-223.
Satti, Z. W., Babar, S. F., & Ahmad, H. M. (2021). Exploring mediating role of service quality in the association between sensory marketing and customer satisfaction. *Total Quality Management & Business Excellence*, *32*(7-8), 719-736.
Singh, S., Sharma, S. K., Mehrotra, P., Bhatt, P., & Kaurav, M. (2022). Blockchain technology for efficient data management in healthcare system: Opportunity, challenges and future perspectives. *Materials Today: Proceedings*, *62*, 5042-5046.
Sinha, R. (2024). The role and impact of new technologies on healthcare systems. *Discover Health Systems*, *3*(1), 96.
Smailhodzic, E., Hooijsma, W., Boonstra, A., & Langley, D. J. (2016). Social media use in healthcare: a systematic review of effects on patients and on their relationship with healthcare professionals. *BMC health services research*, *16*(1), 442.
Sughra, U., Siddiqui, M., Noorani, S., Mansoor, H., & Kausar, S. (2021). Patient Satisfaction: A Tool towards Quality Improvement: http://doi. org/10.36351/pjo. v37i2. 1150. *Pakistan Journal of Ophthalmology*, *37*(2).
Tanya, S. M., Nguyen, A. X., Buchanan, S., & Jackman, C. S. (2023). Development of a cloud-based clinical decision support system for ophthalmology triage using decision tree artificial intelligence. *Ophthalmology Science*, *3*(1), 100231.
Wang, J., Fu, L., Huang, Z., Hu, K., Lin, Z., & Tang, Q. (2025). How AI-powered consultation services in internet hospitals influence patient satisfaction: A structural analysis. *Digital Health*, *11*, 20552076251358673.
Verma, P., Kumar, S., & Sharma, S. K. (2022). Evaluating the total quality and its role in measuring consumer satisfaction with e-healthcare services using the 5Qs model: a structure equation modeling approach. *Benchmarking: An International Journal*, *29*(1), 22-46.
Widyawati, R., & Widowati, A. S. (2021). Effect of service quality and online servicescape toward customer satisfaction and loyalty mediated by perceived

value. In *IOP Conference Series: Earth and Environmental Science* (Vol. 704, No. 1, p. 012011). IOP Publishing.
Williams, S., Barnard, A., Collis, P., Correia de Sousa, J., Ghimire, S., Habib, M., & Weber Donatelli, F. (2023). Remote consultations in primary care across low-, middle-and high-income countries: implications for policy and care delivery. *Journal of health services research & policy*, *28*(3), 181-189.
Wu, X., Kuang, Y., Guo, Y., Wu, J., & Xiao, L. (2024). Internet hospital response to the COVID-19 pandemic in a tertiary hospital in China: Perspectives based on a mixed-methods. *Digital Health*, *10*, 20552076241228418.
Xing, W., Hsu, P. Y., Chang, Y. W., & Shiau, W. L. (2020). How does online doctor–patient interaction affect online consultation and offline medical treatment?. *Industrial Management & Data Systems*, *120*(1), 196-214.
Zhong, W., Luo, J., & Zhang, H. (2024). The therapeutic effectiveness of artificial intelligence-based chatbots in alleviation of depressive and anxiety symptoms in short-course treatments: a systematic review and meta-analysis. *Journal of affective disorders*, *356*, 459-469.
Zondag, A. G., Rozestraten, R., Grimmelikhuijsen, S. G., Jongsma, K. R., van Solinge, W. W., Bots, M. L., & Haitjema, S. (2024). The effect of artificial intelligence on patient-physician trust: Cross-sectional vignette study. *Journal of Medical Internet Research*, *26*, e50853.