Healthcare Leadership: How Do We Maximize Patient Satisfaction and Loyalty in Healthcare Facilities?

Jijo Paul, Ph.D., M.Phil., E.MBA., MS.[1,2]

[1]Varian, a Siemens Healthineers company; Advanced Oncology Services (AOS), 3100 Hansen Way, Palo Alto, California 94304, United States
[2]Sutter Health/ Ridley-Tree Cancer Center; Department of Radiation Oncology, 540 W Pueblo St, Santa Barbara, California 93105, United States

ABSTRACT

Patient satisfaction and loyalty are critical components of healthcare organizations for success and profitability, and this can be accomplished by providing high-quality patient services. The purpose of this study is to understand the influencing factors of patient loyalty by maximizing patient satisfaction in healthcare facilities to enhance the organizational reputation and profits; moreover, discuss various perspectives on patient satisfaction, determining patient requirements, reliability, validity, questionnaire/ instrument construction, sampling methods, satisfaction and patient experience, and patient loyalty measurement.

A systematically collected information from published journal articles used to measure hospital patient satisfaction and loyalty for organizational reputation and profitability. Online databases, such as PubMed, Google Scholar, MEDLINE, medRxiv, and Research Gate, were used to gather journal -published articles. Patient-centered care at every touchpoint in healthcare delivery is crucial for patient satisfaction and loyalty, and the providers can enjoy stable revenue through high patient retention, reputation, and seamless referrals from delighted patients. Regarding reliability and validity, the best practice is to test and report these parameters in new constructs to ensure accuracy and consistency; moreover, the leaders should use appropriate statistical sampling techniques to measure patient loyalty when gathering sample data.

Keywords: Healthcare, Leadership, Loyalty, Instrument Construction, Reliability, Validity, Patient satisfaction

Introduction

Patient satisfaction and loyalty are key elements for healthcare institutions to succeed in a highly competitive and dynamic healthcare market since they directly affect the quality of care, outcomes, the organization's reputation, and profits[1]. The healthcare facility's reputation depends on patient perception of quality, credibility, and reliability shaped by various information sources, including word-of-mouth, testimonials, online reviews, media coverage, ratings, referrals, and social media2. Patient satisfaction and loyalty are among the most potent sources of information for the reputation of any organization since they reflect the direct patient experience and opinion to provide high ratings, generate more referrals, attract more potential patients, and enhance reputation. Since every patient needs a relationship with a healthcare provider, they have some predetermined expectations when they arrive at the healthcare institution, and the satisfaction level can be based on personal feelings, staff encounters, communications, care delivery, and trust.

Healthcare consumerism is a rapidly growing trend that describes a change in healthcare from a provider-centric to a patient-centric model in which the patients take a more active role in choosing healthcare providers, researching treatments, decision making, and advocating for themselves. Patients select medical providers based on comfort and adaptability; they work directly with physicians, healthcare systems, and primary care providers based on their values, beliefs, and considerations, and they demand more transparency in quality, treatment facility, pricing, personalized care plans, etc. Patients want to understand their medical care journey to make the best medical and financial decisions regarding diagnosis, treatment, medications, etc. Patient demands in a patient-centric model forced healthcare systems to adapt to the new reality and differentiate themselves in a competitive healthcare market. Several studies were conducted on the quality of care delivery with physicians and other healthcare professionals, and various organizational issues reflected the quality of care[3]; however, some focused on organizational culture and patient satisfaction[4]. This study discussed multiple perspectives on patient satisfaction, determining patient requirements, reliability, and validity, questionnaire/instrument construction, sampling methods, satisfaction and experience, and patient loyalty measurement. It is worthwhile to discuss how healthcare leadership can maximize patient satisfaction and loyalty in healthcare facilities to enhance organizational reputation and profits.

The present study systematically collected information from published journal articles to measure hospital patient satisfaction and loyalty to healthcare quality. Electronic online databases, including PubMed, Google Scholar, MEDLINE, medRxiv, and Research Gate, were used to gather published articles to derive data. The collected information was tabulated in an Excel sheet, and a double screening process was performed to identify relevant articles related to perspectives on patient satisfaction, determining patient requirements, reliability, validity, questionnaire/ instrument construction, sampling methods, satisfaction, patient experience, and patient loyalty measurement in healthcare included in the study. A pre-approval/ approval from the ethics committee or institutional review board (IRB) is unnecessary for conducting this study since no patient or patient-related information is used in the article.

1. Perspectives on Patient Satisfaction

Patient experience or satisfaction is a measure of individual reflection of their experience on a team that includes hospitals and healthcare systems, and many studies have been published on patient satisfaction measurements with their influencing factors from healthcare[5]. Quality treatment services are essential for satisfying patient needs and expectations, and patient satisfaction is one of the crucial parameters for the success of a healthcare system. Factors influencing patient satisfaction are quality of medical care, waiting time, age, communication, perceived health status, and patient education[6,7]. A positive or negative patient experience

and loyalty toward a specific healthcare provider have been derived from these factors. The organization's profitability increased through patient loyalty, which depends on positive behaviors, including provider recommendations, increased service usage, and compliance. Since the post-covid healthcare market is too competitive, healthcare satisfaction measurement helps leaders optimize many organizational aspects[8]. Healthcare leaders remain alert to detect modifying patient expectations and behaviors, including changes in cost and quality that impact satisfaction. Social media dramatically influences determining patient satisfaction levels with an organization and influences other patients to formulate their treatment decisions in the community.

A publication provides various satisfaction analysis methods, including logistic regression analysis, factor analysis, structural equation modeling, and multi-utility satisfaction analysis (MUSA), which provide many benefits over traditional patient satisfaction models[5]. MUSA considered the patient judgments expressed through questionnaires, and this model, rarely used in healthcare, produces potential benefits compared to other alternatives and creates opportunities. Other alternatives may be the Integrated use of MUSA (MUSA-INT) with benchmarking techniques such as Benefit of Doubt (DEA) and valuable multi-objective interval programming models for satisfaction measurement in healthcare organizations. Treatment quality and patient satisfaction are not linearly related because they cannot constantly directly assess health quality with patient satisfaction. The lack of consistency may be explained by a healthcare system's characteristics, socio-economic differences, etc, and this could be a future research area.

Patient satisfaction can be affected by arrival, waiting, admission timings, staff efficiency, service quality, food quality, interior environment, and procedures. The involvement of medical–nursing personnel and other staff is a significant factor that positively affects hospital patient satisfaction levels; moreover, adequate staff education and professionalism could lead to an improved experience and positive treatment outcome. Good orientation is necessary to ensure patient satisfaction during medical services and meet their needs and expectations. Key factors such as professionalism, discretion, courtesy, attention, kindness, polite behavior, and respect positively affect patient satisfaction with healthcare providers. Moreover, accessibility, scheduling procedures, security, tangibility, food quality, staffing and understaffing issues, and communication pattern affects overall quality and satisfaction[9]. Effective communication, empathy, responsiveness, explanations, adoption of intelligent technologies, and digital transformations improve patient satisfaction, trust, and loyalty[9].

2. Determining Patient Requirements

Patient requirements in healthcare involve quality in the total process, including infrastructure, treatment, communication, and atmosphere, all positively affecting healthcare service quality and patient satisfaction[10]. The positive impact of institutional trust and commitment on patient satisfaction and loyalty is proven by many research studies[11].

Patient trust and satisfaction in an organization significantly affect patient loyalty; favorable effects are recognized for object quality, quality of atmosphere, infrastructure quality, and quality of interaction on patient satisfaction. The quality of the institutional process is not directly associated with patient satisfaction; however, this process increases the treatment efficiency of patients in the hospitals. A patient's commitment to an organization is not directly related to consumer loyalty. Healthcare organizations should understand the relationship between service quality, patient satisfaction, and loyalty. To achieve loyalty, hospitals must improve their relations and communication with patients to understand their needs and expectations. Service qualities such as emotion, function, social influence, and trust significantly impact patient-perceived value and satisfaction[12]. Factors such as healthcare working staff, price, service quality, interaction, trust, treatment effectiveness, treatment process, brand

image, organizational infrastructure, and much more consequently affect patient satisfaction and loyalty; moreover, other factors such as competency, tangible factors (facilities), patient waiting time, communication, punctuality in work, queuing system, drug availability, providing information to clients, equal treatment opportunities, and complaint system influence patient loyalty[13-15]. Patient sentiment can be correlated with determining the health plan, provider, available treatment options, and purchase decisions[16].

Consumers should actively participate in determining and implementing quality improvements to ensure patient satisfaction and loyalty in healthcare. Common strategies used in the healthcare market involving consumers in quality improvements like patient memberships and gathering feedback through surveys have several limitations, including limited representations, infrequent assessment, feedback delays, tokenism, lack of reliable patient feedback, and bias in feedback collection methods that affect healthcare improvements. New statistical models of consumer engagement can overcome many of these limitations by collecting accurate consumer experiences of care and reporting this data to a consumer action group that involves staff and trained consumers working together to develop solutions[17]. Patient-physician communications, nurse-allied health staff communications, responsiveness to patient needs, and hospital cleanliness determine the healthcare organizations' quality[18,19]. The level of loyalty is directly related to the level of patient satisfaction; when the level of satisfaction is higher, the level of loyalty to medical services will be higher[19,20]. Today, consumers need more innovation, trust the institution with their data, and actively seek and make trade-offs; moreover, they typically consider certain factors when shopping for healthcare quality, including availability, proximity, options for care, and cost[21].

3. Reliability and Validity

Changes in people's living standards and growing competition in the healthcare field created an increased emphasis on the quality of services, a crucial concern for patients and healthcare providers. People are opting for new healthcare service approaches since they are more aware of quality services delivered by healthcare organizations, resulting in higher expectations and demand for quality services.

Organizations need to maintain patient relationships through better patient satisfaction that facilitates insights into service quality dimensions and leads to sustained relationships with quality care outcomes. Consumer satisfaction is directly related to their impression and experience in an organizational environment, and there is enough evidence to describe conceptual models for evaluating healthcare quality services[22]. It has identified the care environment, technical competencies, technical quality of care, interpersonal skills, and provider-patient interaction as significant factors influencing patient satisfaction[23]; moreover, factors such as tangibles, reliability, responsiveness, assurance, safety measures, empathy, discharge, and medicine quality management are determinants of healthcare service quality[24]. Patient loyalty and satisfaction in hospitals depend primarily on the medical services, nursing services, safety, patient communications, administrative services, and hospital infrastructure, in addition to other crucial factors involving healthcare service outcome, healthcare service interaction, healthcare service environment, physical environment, communication, privacy, safety, patient-friendly environment, and responsiveness[5]. Improving hospital care can be established using patient feedback by carefully preparing questionnaires using multi-scale criteria that quickly improve patient satisfaction[25]. Similar patient feedback questionnaires can be used as a generic tool for improving applications of digital mental health services as a reliable measure of patient-reported satisfaction with telehealth services[26]. Leaders must prioritize patient experience in hospitals for better responsiveness and describe the relevance of consumer experience measurement scores used in healthcare for patient satisfaction evaluation[27]. Patients' experiences and satisfaction in healthcare have become increasingly significant

in quality improvements, especially in developed nations that use updated survey questionnaires, and social media platforms increasingly gather patient feedback[28]. For example, implementing improved childbirth services in hospitals based on patient feedback would improve their satisfaction so that patients' opinions matter in improving childbirth-related services in hospitals[29]. A patient satisfaction questionnaire for the psychiatric population also showed good structural validity (accuracy) and reliability (consistency) to correlate with outcome variables related to alleviating symptoms and post-treatment functioning[30]. A well-defined patient satisfaction survey can be used for future assessments of interdisciplinary treatments for substance dependence, and a miniature version of it can be applied to reduce respondent's burden would go a long way[31].

The study findings could help professionals in healthcare to formulate and implement effective strategies to deliver superior quality healthcare services to patients and improve patient satisfaction; moreover, they displayed various influencing factors to determine healthcare service quality on patient satisfaction, essential for healthcare leaders to initiate suitable actions for improving healthcare outcomes and patient satisfaction[21].

4. Questionnaire/Instrument Construction

Patient satisfaction is associated with the experience of individuals in medical care services, institutional culture, and communications with staff members in healthcare systems during their visits, and the survey instrument serves as a vital tool in evaluating the quality of healthcare services. Survey questionnaires are questions used to gather patient experiences in hospital healthcare encounters. A recent version of the Patient Satisfaction Questionnaire (PSQ-III) was developed from the initial version designed in 1983 as a self-administered survey instrument for general population studies[23]. The PSQ-III comprises about fifty survey components that reasonably consider patient satisfaction within medical care,

including six fundamental aspects: technical quality, communication, interpersonal manners, financial care, care accessibility, and time spent with physicians. The PSQ provides details about background information, scoring rules, and psychometric analyses to construct from the satisfaction surveys.

Many research studies on generic questionnaire construction models across various healthcare services can be used either alone or with other instruments in quality assessment projects[32]. The relational aspects of healthcare employees and patients greatly influence most patient satisfaction measurements, including patient experience, quality, satisfaction, and loyalty. Research studies help to understand the implementation and measurement of patient experience by considering various attributes and dimensions that can be useful in evaluating and identifying discrepancies in healthcare services[33]. The patient satisfaction data gathered can be used to improve healthcare services, leading to patient loyalty; however, there may be confusion over multiple instruments with unknown psychometric testing[34]. The selection of the right experience instrument influences a balanced approach of utility directed by the matrix; moreover, high reliability and validity are required for high-stakes projects.

Several factors influence patient satisfaction levels during hospital visits, including trust, empathy, relatedness, therapeutic relationship, communication, expectation, patient waiting time, and clinical contact time[35]. The psychometric properties of self-administered instruments used for measuring patient satisfaction should be tested before the application[36]. For example, a proper design with factor structure analysis and the hospital physical therapy perceived satisfaction questionnaire (H-PTPS) attempted to successfully measure patient satisfaction with clinical services[37]. Patient satisfaction surveys using regularly updated questionnaires help eliminate some of the problems related to the questionnaires and the present scenario; moreover, social media platforms must be considered a significant source, expanding the range of patient feedback[28]. A study in Mexico used a developed instrument to assess patient

satisfaction with healthcare services and implementation at the first care level by incorporating the socio-cultural characteristics of the population; moreover, it examined its reliability, validity, and implementation feasibility[38]. Patient satisfaction measurement is challenging in improving the quality of ambulatory anesthesia services due to its subjective and complex psychological construct, so a psychometric methodology has been adopted to evaluate this outcome[39]. A systematic evaluation of questionnaires to measure patient satisfaction in ambulatory anesthesia showed a few studies have developed questionnaires with rigorous psychometric methods and suggested developing standardized instruments to measure this outcome. A nationwide standardized patient satisfaction measurement tool was introduced in China in 2019 to assess the model fit of the nationwide outpatient satisfaction questionnaire implemented in tertiary hospitals. They found that the hospital should improve staff communication skills, simplify the environmental layout, and introduce appointment-based consultation for managing patient overloads to enhance patient satisfaction levels during a healthcare visit[40].

5. Sampling Methods

The interchangeable usage of terms such as patient perspective, patient experience, patient reports, patient satisfaction, and patient perception potentially causes confusion and misunderstandings; however, patient experience is the most commonly used term to express patient satisfaction in healthcare. Different types of patient satisfaction surveys are designed to gather feedback from patients in healthcare and evaluate satisfaction and loyalty. In traditional paper-based surveys, the patients receive questionnaires from the organization and mail them back after appointments; however, electronic surveys are a more popular format today, and they can be accessed online through email invitations, websites, or mobile applications. Electronic formats offer many advantages, such as reaching a larger audience, quickly customizing branch questions, being tailored to individual experiences, having a faster response rate, and having immediate data collection. Today,

many organizations use patient satisfaction surveys integrated with electronic health records (EHRs) by incorporating questions directly into the EHR system to capture real-time data and quickly identify improvement areas that support them to act immediately based on feedback. Patient satisfaction surveys consist of various questions designed to capture patients' opinions, experiences, and satisfaction, and these questions may vary across multiple healthcare organizations. Patients usually rate the level of friendliness and willingness to address concerns since they reflect interpersonal skills play a significant role in patient satisfaction. Patient satisfaction surveys in healthcare should maintain correct timing, ideal distribution, and differing demographics for a higher response that benefits the organization, including finding improvement areas, supporting evidence-based decision-making, and increasing patient loyalty and retention. However, several challenges associated with surveys, including potential biases in results, low response rates, or negative feedback are some of them. Patients' hospital experiences are strongly related to nursing care, and improvements in nurse staff training in the hospital work environment should be considered to enhance patient satisfaction[41].

Multiple strategies are required to improve quality significantly, but simple patient feedback is insufficient to improve care substantially. Patient satisfaction data can be collected in various ways, including questionnaires, interviews, SMS messages, online surveys, complaints, and compliments, or using handheld devices or kiosks to gather real-time feedback[42]. Various feedback methods can draw different pictures, but the patients can provide valid and credible information about waiting time, doctor-patient communication, reliability, validity, staff responsiveness, patient-related information, and cleanliness[42]. A cross-sectional design to assess patient satisfaction categorizes four groups as dissatisfied, moderately dissatisfied, moderately satisfied, and satisfied, demonstrating high levels of patient satisfaction; however, more attention is required for acutely admitted patients living alone

with pain to achieve the highest level[43]. An evaluation using various sampling methods such as literature review, mathematical derivation, and Monte Carlo simulations methods revealed simulations are more operationally efficient than alternatives such as systematic and simple random sampling methods; moreover, simple random sampling is the only sampling method that will always yield unbiased sample without additional assumptions[44]. The most satisfied patients in hospitals are most likely to respond to a post-hospitalization questionnaire, and the tendency creates a bias in satisfaction scores since they expected to return the satisfaction questionnaire most likely; this caused an optimistic bias that affected all results identified as most pronounced for hospital surveys[45]. The patient experience assessment using a Likert rating scale with five binary variables demonstrated that the patient's overall satisfaction with the hospital care strongly influenced the quality of medical care provided by the physicians[46].

The data mining efforts improved the sampling efficiency and reduced the number of strata regions in a stratified sampling design since it considered a larger geographical area for the survey[47]. The most suitable time to conduct a patient satisfaction survey is identified within a visit or after thirty days by mail, and caution should be taken to ensure patient satisfaction constructions are measured with similar instruments[48]. The patient experiences surveys rely on psychometrically tested data collection approaches that allow managers and policymakers to understand patient perceptions better and improve the quality of care by involvement[49]. A cross-sectional study data analyzed using descriptive statistics and linear regression analysis suggested improving quality healthcare policies, including effective communication, empathy, culture, tangibles, and priority to enhance patient satisfaction[50]. Surveys often underrepresent some underserved patients; improving their response rates helps patient surveys better represent experiences and equity-related quality improvement efforts. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey protocol is a randomized clinical trial that can be used for the survey of hospital-discharged patients using three standard (mail only, phone only, mail-phone) and three web-enhanced (web-mail, web-phone, web-mail-phone) protocols. The web-first multimode survey protocols have significantly improved the representativeness of patients in the surveys. The response rate and representations of the web-mail-phone protocol have demonstrated the best performance; however, the web-phone performed well for young and diverse patient groups, and the web-mail is suitable for older and less varied patient populations[51]. Other research gathered sample data using a questionnaire method with an appropriate patient satisfaction scale, patient commitment scale, patient trust scale, and an introductory information form, and it was analyzed using descriptive statistical methods with exploratory factor analysis, reliability analysis, correlation analysis, and regression analysis. Patient satisfaction is significantly influenced by trust and commitments, which internally contribute to beliefs and behaviors[52].

6. Patient Loyalty Measurement

patients may be loyal once they've developed an emotional tie with the healthcare organization or brand through repeated positive contacts and interactions. Patient loyalty is significant for all types of business successes, and this promotes a tendency to continue buying the same products, being open to other products or services from the same brand, being less open to sales and marketing pitches from competitors, more likely to refer to family and friends, less likely to look at other brands, more likely to provide feedback, more forgiving of issues that arise, leads to more word-of-mouth referrals, and a heightened sense of trust between the brand and consumer. The three R's of patient loyalty (reward, recognition, relevance) can help establish a loyal patient base, and build loyalty in healthcare can be achieved by providing clinical quality as a top priority, keeping patients in-network, attracting new patients, supporting high patient satisfaction, and maintaining good patient relationships. Employees' actions and the healthcare process are the two essential elements

contributing to healthcare loyalty. Employees' actions may involve good patient-provider communication, friendly staff, patient education, and shared decision-making; however, the healthcare processes involve patient access, appointment scheduling and availability, and patient financial experience in the hospital[53]. Institutions focus on building patient loyalty by considering the patient experience from the beginning to end of the care journey by providing convenient care options, good patient-provider communications, price transparency, patient-centered billing, and friendly staff members.

Patient loyalty can be measured using a variety of performance indicators that include net promoter score (NPS), customer lifetime value (CLV), repeat purchase rate (RPR), customer satisfaction score (CSAT), customer churn rate, customer loyalty index, customer retention rate (CRR), and upsell ratio, are some of them. The positive influencing factors of patient loyalty to healthcare are satisfaction, quality, commitment, value, brand image, trust, and institutional citizenship behaviors[54]. Transforming the quality and value of the provided care and responding well to market shifts helps institutions earn patient loyalty and market share; moreover, providing excellent quality care, greater access to the cost, quality data, informed health care decisions, patient-centered strategies, outcomes transparency, advanced analytics, and targeted improvement contribute to loyalty. Focusing on coordination, communication, and empathy will likely lead to greater patient loyalty[55]. Specific tactics to help healthcare organizations earn loyalty and patient confidence are developing a shared vision of patient care, being accountable to data, measuring the patient experience, emphasizing team care, and establishing organizational pride[56]. The caring behaviors in the emergency department on patient loyalty demonstrate that communication, body language, empathy, initial greetings, time-stamp data, and discussion about treatment procedures impact patient loyalty[57]. Once a patient is loyal to a care system, the likelihood of switching relationships is very low due to patient satisfaction and loyalty, which

primarily affect the hospital choice[58]. Primary and specialty service offerings are significant in maintaining patient loyalty[59]. Good interpersonal relationships and trust in care physicians are essential predictors of patient satisfaction, loyalty, and intentions to stay with a primary care physician[60].

Patient loyalty in the healthcare field was examined using exploratory factor analysis to identify the dimensions of patient satisfaction (PS), patient trust (PT), and patient loyalty (PL), and the leading finding was PT has an essential antecedent of PL; however, the PS has no direct relation with PL identified[1]. Patient satisfaction, trust, and perceived value play significant roles in shaping patient loyalty, but patient satisfaction fully mediates the patient's perceived service quality[61]. A comparison of three theoretical models of the quality–satisfaction–loyalty relationship displays that perceived quality improvement does not lead directly to patient loyalty but depends on patient satisfaction[62]. Healthcare organizations should improve service quality and establish good patient trust to achieve patient satisfaction and loyalty; moreover, higher service quality creates higher patient trust, service encounters, and physician-patient loyalty[63]. Measuring patient behaviors is necessary to understand the significance of trust, attitude, effectiveness, satisfaction, and loyalty that improve healthcare outcomes[64]. Moreover, reliability and responsiveness are elements of care service quality that directly impact patient satisfaction, loyalty, and medication adherence[65]. The service quality dimensions, such as tangibility, reliability, responsiveness, empathy, and assurance, directly affect patient satisfaction and loyalty to the hospital[15]. Furthermore, a positive patient experience with good nursing care in the healthcare facility impacts patient loyalty and better patient experience. Hospital administrators, nursing managers, and other health professionals ensure the development of a positive patient experience of medical care in clinical practice through institutional changes, culture shaping, employee education, and training[21, 66].

7. Satisfaction and Patient Experience

Patient satisfaction is a measure of a patient's overall happiness in healthcare, which is one of the significant factors in determining the success of a healthcare facility. Since patient satisfaction is subjective, it is all about the quality of medical care patients receive, and patient engagement has become increasingly essential to effectively shaping healthcare outcomes and delivery. Patients may be satisfied with providing good medical care from healthcare institutions, which leads to patient compliance, better clinical outcomes, loyalty, and lower medical lawsuits. Several factors may influence patient satisfaction in healthcare, such as scheduling, timings, communication, feedback, physician interaction, and post-visit follow-ups. The most crucial element in communication affecting patient satisfaction is between the physician and the patient in the hospital; moreover, patient satisfaction affects a range of factors, including care expectations, physician and staff responsiveness, timeliness, cleanliness, pain management, appointments, results, and communication with physician and staff. Patient satisfaction in healthcare can be achieved by continuously providing superior and improving actions, establishing a clear strategy, using technology, and frequency of sharing results.

The pharmaceutical industry continuously improves the consumer experience by advancing overall consumer experience strategy, using technology, and sharing consumer experience within the field; moreover, quality monitoring methods are adopted to measure and improve the experience[67]. Various healthcare services, including laboratory and diagnostic care, prenatal care, and preventive healthcare sections, positively affected patient satisfaction due to positive physician attributes influencing satisfaction in healthcare services[68]. Executing a simple survey framework does not improve organizational performance; a post-data analysis includes making sense of the data, disseminating findings to all stakeholders, helping staff understand the data,

creating a platform for discussion, planning for improvement, communication, and explaining are significant[69]. Patient satisfaction with telemedicine in healthcare shows a consistent 95–100% satisfaction rate, which leads providers to improve telemedicine-related activities, including administrative support, technology, and usage[70,71]. A quantitative approach provided insights from healthcare providers on patient engagement, service quality, and patient well-being analyzed using a snowball sampling technique, showing critical components of improving the service quality as patient engagement fosters open communication, shared decision-making, and collaborative care. Active participation in patient healthcare is suggested to improve treatment adherence, health outcomes, well-being, and patient satisfaction[72]. Healthcare organizations develop specific practices to manage better complexity and diversity, temporal dynamics of care delivery, intangibility, interpersonal processes, co-production to improve patient satisfaction and service quality, and implications for future research[73,74]. Patient experiences on chatbot performance are a relatively new topic that addresses patient satisfaction in consumer markets[75]. The relevant variables when using chatbots are usability, responsiveness, personalization, and emotional connection between the chatbot and users; however, personalization and responsiveness are the major contributors to consumer satisfaction with chatbots. When using chatbots, the emotional experience also contributes to some degree of patient satisfaction apart from functionality, developing chatbots to make patients happy by fostering engagement and empathy even when automated to achieve a competitive edge and maintain patient relationships in the long term. Chatbots' patient-centric designs help institutions enhance patient satisfaction, patient retention, and cost efficiency.

Patient satisfaction provides several benefits for healthcare institutions, which create higher patient retention, higher staff morale, increased productivity, and increased profitability. Patients are considered consumers, and a consumer experience is more

than technology; hence, the range of patient-centric processes is broad, with tech advances creating opportunities to deliver exceptional patient experiences and being careful about the meaning of terms in strategy discussions. Patient satisfaction in healthcare can improve by implementing some best practices such as intelligent scheduling, real-time workforce accountability, setting expectations, involving family and friends, integration across applications, and communication across departments. Many strategies can improve patient satisfaction by setting up patient expectations by asking open-ended questions, emphasizing clear communication, being responsive to patients of any kind, maintaining a clean practice, and discussing pain management by offering precise instructions/medications and dressing the part professionally neat and clean. Greater patient satisfaction can lead to excellent clinical success, positive branding, and loyalty, generating potential for new patients.

8. Practical applications

Several practical applications of patient satisfaction have been observed in healthcare that generate not only patient loyalty but also display key insights into the success of healthcare providers. Patient satisfaction analysis allows healthcare administrators and leaders to assess patient experience, retention, reimbursement, the crucial aspects of facility success, and patient loyalty to a brand. Patient satisfaction is directly related to appointment scheduling, wait times, facility environment and culture, treatment plans, patient care expectations, and effective communication between patients and providers; moreover, widespread, transparent solutions with integrative health systems and services influence patient satisfaction. Patient satisfaction is a proxy, a very effective indicator measuring the success of physicians and organizations in healthcare; timely, efficient, and patient-centered quality healthcare delivery is necessary to enhance patient satisfaction, clinical outcomes, and patient retention by reducing medical malpractice claims. Patient satisfaction is a popular healthcare quality metric that can be used to improve healthcare/ drug expenditure and mortality[76].

Telehealth facilities have steadily increased in recent decades, attempting to effectively and efficiently deliver high-quality care to patients to enhance satisfaction[77].

The reliability and validity of patient-reported experience measures and the necessity to avoid bias in study design are significant factors in estimating the accuracy of the results and conclusion. Careful attention is required when assessing validity and reliability criteria to record patient responsiveness and to determine measurement errors or agreements on experience measures in understanding the clinical relevancy of the formulated results in a healthcare evaluation[27]. The following strategies can be used to assess the validity and reliability of patient subjective satisfaction, such as developing a unified standard for satisfaction measurement, identifying a combination of tools to measure satisfaction routinely, additional research on the issue of subjectivity reduction, etc., would go a long way[78]. Construct validity is vital in healthcare and research, and it is established through correlations with health behaviors and outcomes in exploring content validity and differential item functioning[79].

Improving and sustaining healthcare quality can be achieved using patient experience data that may be hindered by confusion over multiple instruments with unknown testing and utility; therefore, selecting the right patient experience instrument is significant for a balanced consideration of aspects of utility aided by the matrix[31]. Several instruments are available to measure patient safety since patient safety is one of the primary components of healthcare service quality. The diversity of instruments and dimensions creates a multidimensionality for patient safety, which may hide benchmarking among healthcare institutions and units[80]. A well-designed survey tool containing straightforward formatted questions can help respondents interpret and answer clearly, yielding high-quality sample data[81].

Choosing the correct type of sampling method is very important to ensure proper analysis and derive accurate results to implement changes in healthcare

for patient satisfaction. Providing quality services is essential for fulfilling patient expectations and satisfaction[5]. Some sampling strategies should be adopted to gather samples from the target population in healthcare if the entire population cannot participate or all members cannot identified to collect data. The two primary sampling strategies used in healthcare research are probability sampling and non-probability sampling techniques. Random sampling techniques such as simple, systematic, stratified, and cluster randomization sampling are probability sampling techniques; however, purposeful, snowball, convenience, and quota sampling are non-probability sampling methods[82]. The experience sampling method monitors emotional well-being, fatigue, somatic health, and pain in patients with chronic somatic illnesses. This sampling method holds significant potential for providing results and feedback to patients and providers and can be included in clinical practice with more research[83].

Patient loyalty is a critical component that influences organizational profitability and success; loyalty can accomplished by providing high-quality services to patients. Factors influencing loyalty are price, perceived value, trust, infrastructure, process, treatment effectiveness, service quality, interaction, and brand image; moreover, competency of healthcare employees, responsiveness, patient wait time, tangible factors (facilities), communication, queuing system, drug availability, equal treatment options, patient education, and complaint system affect patient loyalty[13]. Hospital quality care services, patient satisfaction, and loyalty are the crucial elements that enable healthcare providers to improve service offerings and cost-effectiveness[15]. Hospital managers and leaders should consider the factors contributing to these elements and maintain patient loyalty to healthcare institutions[1]. Patient satisfaction and loyalty are improved using some creative methods, including prioritizing short wait times, improving the facility environment and culture, maintaining transparency, focusing on communication, ensuring timely follow-ups, utilizing feedback from patients, implementing procedures to educate patients about treatment plans, and implement technological support systems for greater facility efficiency.

Conclusion

Improving patient satisfaction has become paramount in building long-term patient loyalty by focusing on seamless and supportive patient-centered care at every touchpoint, from appointment scheduling to follow-up. Healthcare providers enjoy a stable revenue through a high reputation, patient retention, and seamless referrals from delighted patients through digital tools, including patient portals, telehealth platforms, and mobile apps, enhancing hospital retention by offering convenient care access. Appropriate patient contact, communication, real-time monitoring, commitment, and feedback are necessary to identify areas for improvement since patient retention reflects quality healthcare services. For patient satisfaction measurements, the best practice is to test and report the validity and reliability of a newly developed measure to ensure the accuracy and consistency of the research results. Leaders should use appropriate statistical sampling methods to gather samples to measure patient loyalty; however, analysis metrics can provide insights into the likelihood of patient recommendation to a brand, overall company value, returning patients, and patient loss rate.

Data availability statement:
All data generated and analyzed during this study included in this article.

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