

Utilizing Electronic Word Of Mouth Data (e-WOM) to Identify Service Quality Gaps in Healthcare Delivery and Propose Improvement Strategies

Abstract

Aim: The rapid digitization of feedback mechanisms in healthcare has highlighted the significance of electronic word-of-mouth (e-WOM) in shaping patient decisions and assessing service quality.

Materials & Methods: This study used a mixed-method approach, methodically evaluating literature and empirically assessing survey data to examine the impact of negative electronic word-of-mouth on patients' views of healthcare service quality and their decision-making in Noida, India. Utilizing the SERVQUAL paradigm, the outcome delineates and quantifies the service quality discrepancies across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy.

Findings: The systematic review of 28 studies indicates that healthcare service quality is multidimensional, with patient experiences influenced by factors including reliability, responsiveness, assurance, empathy, tangibility, communication, professional competence, cleanliness, waiting time, and patient-centred care. The review also highlights the growing role of electronic word-of-mouth (eWOM) and online patient-generated information in communicating healthcare experiences and shaping perceptions of healthcare providers. The empirical survey further demonstrates the importance of eWOM in healthcare decision-making: 84.7% of respondents searched online reviews before selecting a healthcare provider, while 85.2% reported avoiding a provider because of negative online reviews. The findings suggest that systematic monitoring of eWOM, staff communication and behavioural training, improved waiting-time management, and greater transparency regarding treatment costs may support healthcare service improvement.

Conclusion: Research indicates significant discrepancies between patient care expectations and actual service delivery experiences, with a pronounced lack of responsiveness and empathy evident in public health facilities. Study indicates that eWOM plays a major role in decision making of healthcare providers except in the cases where doctors' expertise is prioritised. Proposed strategies for healthcare authorities include staff behavioural training, queue management tools, and proactive internet reputation management.

Keywords: e-WOM, Health Information, Health Care, Patient's Feedback, Service Quality Gap.

1.Introduction

In the contemporary digital media landscape, electronic word-of-mouth (eWOM) disseminates more rapidly and extensively than traditional word-of-mouth, akin to viral marketing ^[1]. Consumers make the best use of online platforms to review the hospitals and share it with the general public and service providers. Online reviews, evaluations and word of mouth influences consumers' perception and decision-making. The recent years have seen an alarming rate of increase in inclination towards the patients relying more on the electronic word of mouth(eWOM) and online reviews. The influence of negative online feedback is particularly important in healthcare because patients often face uncertainty and perceived risk when selecting healthcare services. Long term decision making and most importantly the decision of healthcare has been impacted more by eWOM. In comparison to the positive eWOM, negative eWOM has more influence on people ^[2].

Health care services are among the most elusive and difficult to assess, requiring a high level of trust in service providers ^[3]. eWOM is very relevant in the case of evaluating service oriented businesses such as healthcare. Usually patients and consumers often have numerous and diversified services during their treatment ^[4]. These interactions mostly impact how they see the healthcare organization and how they are going to rate and review on public platforms.

Medical service providers must be reliable as patients depend on healthcare services for their well-being. SERVQUAL provides a structured framework for assessing different dimensions of perceived service quality ^[3,5]. This approach is widely used to assess patients' perceptions towards healthcare services. The use of eWOM data provides an additional perspective by capturing patients' opinion and experiences through various platforms ^[6]. Digital platforms are widely used by every group of people and it has become an important source of information for everyone. This study examines how online reviews helps in identifying the service quality gaps in Noida's healthcare sector. This study is done using empirical survey analysis and systematic literature research. The study examines how negative internet reviews affect patients' perceptions and service quality gaps in Noida's healthcare sector. The study combines eWOM analytics with the SERVQUAL framework to pinpoint significant service delivery pain areas and propose strategies for healthcare professionals to boost patient satisfaction and trust in the digital age.

eWOM is an online communication activity in which past and present opinions are shared about services and products the person has consumed. Unlike traditional word of mouth like people used to have in small segments, eWOM has a scope on larger segments due to digitalization. eWOM is in written form, which kind of remains for a longer period and hence impacts also for a larger period of time. According to Van Doorn (2010), *eWOM* and word-of-mouth (WOM) are both included in consumer participation behavior. The valence of the service experience, or the satisfaction gained from that encounter, is directly influenced by WOM or positive or negative evaluations ^[7]. Strong experiences lead to strong opinions, consumers take out time to evaluate and review mostly in the extreme conditions only. Several studies show that WOM is greatly influenced by enjoyment ^[8]. Matos (2008) shows that satisfaction, loyalty, and service quality are the main factors that determine a review's valence. Significant dissatisfaction results in negative judgments, while high levels of satisfaction produce favourable ones ^[9]. This phenomenon can be explained by the strong desire to engage in eWOM resulting from either favourable or unfavourable experiences with high-quality services ^[10].

As patients become more empowered and aware, the urge of seeking information and validating the decision rises, especially when the decision is about healthcare, higher expenses. People use various sources to gain the information, these sources include personal knowledge or previous experiences, referrals, healthcare provider information, publicly available information, and electronic word-of-mouth(eWOM). Although such sources can provide useful information, complex or difficult-to-understand information may create information overload for patients. Because health care services are seen as material goods that require a great deal of personal risk and dedication, evaluating their quality is difficult. Compared to consumers in other industries, healthcare consumers rely more on accurate and relevant information when making decisions. Negative eWOM is all around online expressions of dissatisfaction, unfavourable experiences or complaints about the services or

products experienced. The textual or visual elements expressing dissatisfaction through strongly worded negative content is negative eWOM [6].

This study is about both healthcare management and service quality research by integrating electronic word-of-mouth(eWOM) and SERVQUAL framework to identify service quality gaps from patients' experiences. Using systematic literature evidence along with empirical data from Noida, the study provides a context specific perspective on how online patient feedback can affect the decision making. The study also highlights that systematic eWOM monitoring is a supplementary source of information for healthcare quality improvement and patient-centric decision making.

2. Information and Method

This paper systematically reviews literature on electronic word-of-mouth (eWOM) and its effects on health care service quality. Being truly systematic, the methodology adopted in this paper follows PRISMA, ensuring transparency and reproducibility. In this regard, a thorough search was conducted on various academic platforms: PubMed, Scopus, and Web of Science, including Google Scholar, utilizing keywords such as eWOM healthcare, online reviews, patient decisions, and SERVQUAL healthcare gaps. The qualifying criteria emphasized peer-reviewed articles, favouring the empirical articles that establish eWOM's role in influencing patient perceptions and the enhancement of health care services. Data extraction involved thematic coding to categorize findings into overriding themes such as drivers of patient decision-making, SERVQUAL-based gaps in services, and challenges particular to both sectors. Quality evaluation according to the Newcastle-Ottawa Scale was conducted for methodological assurance with special emphasis on minimizing the risk of bias. Ultimately, insights from the author's survey involving 196 respondents in Noida have greatly enhanced the empirical grounding of the study and its regional context.

Here initially, 450 papers were taken from various platforms and later after the initial screening and removing the duplicates 315 records were collected. Of these, 230 records were excluded, and 85 were screened by title and abstract. The screening was done on the basis of their abstracts. Twelve records that did not meet the relevance criteria were completely excluded. Consequently, 73 full-text articles were assessed for eligibility. Following full-text assessment, 45 articles were excluded based on the predefined eligibility criteria. Finally, 28 studies were included in the systematic review. The overall study identification, screening, eligibility assessment, and inclusion process is presented in the PRISMA flow diagram (Figure 1).

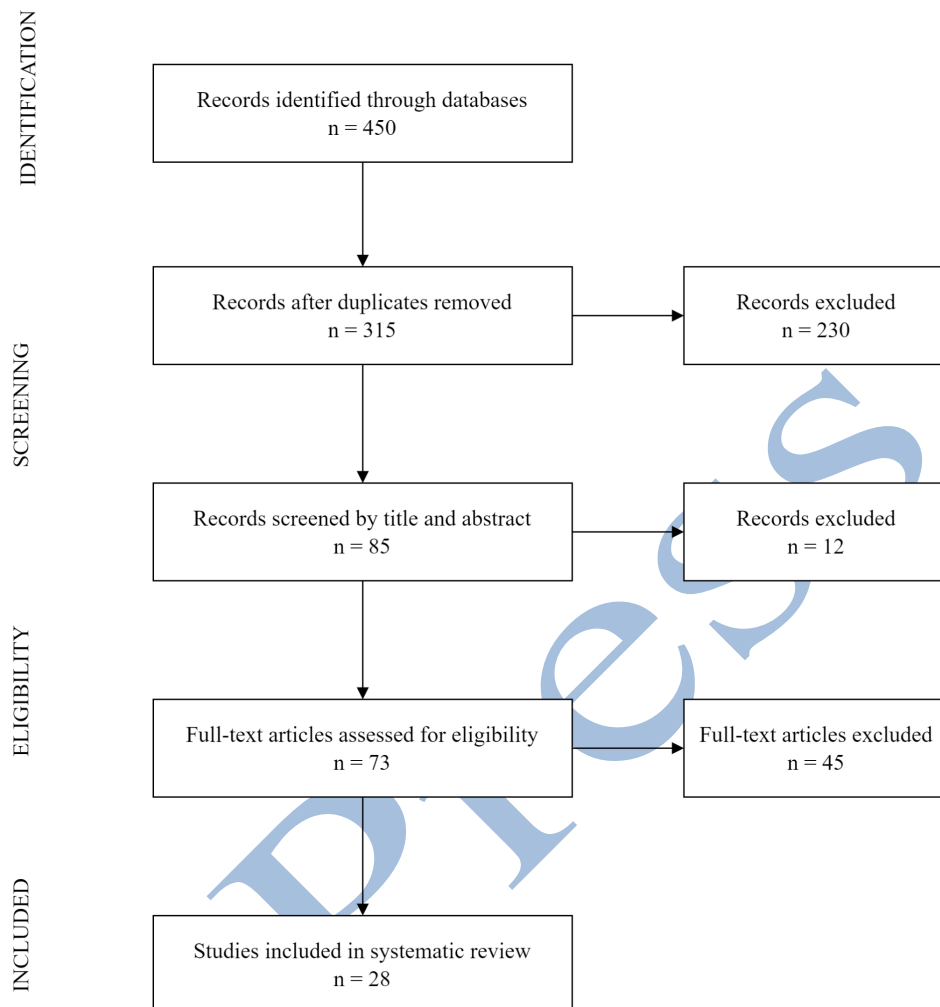


Figure 1. PRISMA Flow Diagram of the Study Selection Process

In addition to the systematic literature review, empirical survey data was collected from 196 individuals of Noida, who had experienced the healthcare services in Noida. The survey was designed in such a way that it collects the role of eWOM in the healthcare decision making process and also identifies the major concerns by the respondents. The questionnaire covered the 5 major areas, namely respondent's characteristics or demographics and healthcare use pattern; use and influence of online reviews; responses to negative eWOM; perceptions of healthcare service quality and factors influencing healthcare provider selection; and respondents' views regarding hospitals reputation and suggestions for improvements. Questionnaire also included questions which are concerned with misleading and fake reviews as this has also become a part of marketing somehow, where demeaning one business to raise other has become a major goal. It also emphasized on the decision making just because of the doctor's expertise and reputation or hospital's image. It also focuses on how important it is to accept the reviews from relatives, friends or neighbours. Further questionnaires also invited respondents to give suggestions for improvements in detail.

3. Findings

3.1 Systematic Review Findings

The systematic review included 28 studies after screening and eligibility assessment. The included study covers information and research on healthcare service quality, patient perception, electronic word-of-mouth (eWOM), online reviews, and factors influencing patients' evaluation of healthcare services. The studies have used various methodological approaches, including SERVQUAL, gap analysis, cross-sectional surveys and investigations of online word-of-mouth and patient generated information.

Table 1. Summary of the 28 studies included in the systematic review

No	Author, year & country	Study Objective / Focus	Method & Sample	Key Findings	Relevance to eWOM
1	Torkzad A, Beheshtinia MA; 2019; Iran ^[11]	To evaluate and prioritize criteria affecting hospital service quality and rank hospitals based on these criteria.	Cross-sectional study using a Multi-Criteria Decision Making (MCDM) approach. Four Iranian public hospitals were evaluated. Questionnaires were completed by 385 patients. The study used AHP, MDL, TOPSIS, ELECTRE & Copeland methods.	4 major service-quality criteria were identified. Among specific sub-criteria, professional competence of doctors, hygiene and cleanliness, medical equipment, and waiting time were important.	Highly Relevant
2	Rao, Clarke, Sanderson & Hammersley; 2006; England (UK) ^[12]	To examine whether older patients' assessments of the quality of primary care correspond with independently measured indicators of technical quality of care based on administrative and clinical records.	Cross-sectional, population-based study using the General Practice Assessment Survey. Conducted across 18 general practices in the Basildon Primary Care Trust area, southeast England, involving 3,487 patients aged 65 years or above who responded to the survey.	Patient-assessed technical quality showed weak and statistically non-significant correlations with the objective record-based measures. In contrast, patient assessments of technical quality were strongly associated with perceived communication, interpersonal skills and trust in doctors (0.85, 0.88 and 0.87 respectively). The authors concluded that patient assessments alone are insufficient for evaluating technical quality and that both patient-based and record-based measures are required.	Indirect but important relevance.
3	La Fata, Lupo & Piazza; 2017; Italy ^[13]	To comparatively evaluate and benchmark healthcare service quality in the Italian public healthcare sector and identify areas requiring improvement.	Empirical study of 5 major Sicilian public hospitals. Evaluation of healthcare service attributes under Fuzzy Set Theory. For each hospital, 18 respondents were involved: 12 in-/out-patients and 6 managers. The study combined Fuzzy Set Theory, ELECTRE III and Importance-Performance Analysis (IPA).	H3 ranked first in service quality, followed by H2, H5, H4 and H1. Responsiveness was a strong area for H2, H4 and H5, while healthcare staff was identified as a critical area requiring improvement for H1 and H4. Relationships, accessibility and tangibles generally showed low or negligible criticality across the hospitals.	Indirect but highly relevant.

4	Chang, Kao, Lin, Yang, Kuo & Jerng; 2019; Taiwan ^[14]	To identify gaps between patients' families' expectations and perceptions of healthcare service quality for patients receiving prolonged mechanical ventilation (MV), and to identify priorities for service-quality improvement.	Prospective observational study conducted at the Respiratory Care Center (RCC), National Taiwan University Hospital. 167 family respondents participated. A modified SERVQUAL questionnaire with 22 items across five dimensions was used. Data were analysed using SERVQUAL gap analysis, Importance-Performance Analysis (IPA), paired t-tests and multivariate logistic regression.	Overall expectation and perception scores were very similar (4.50 vs. 4.51; p=0.808). Reliability had the highest expectation and perception scores, while tangibles had the lowest. IPA identified four priority areas for improvement: modern-looking equipment (tangibles), error-free records (reliability), having the best interests of patients/families at heart (empathy), and understanding patients'/families' special needs (empathy). The questionnaire showed strong internal consistency, with Cronbach's alpha above 0.80 for every dimension.	Highly relevant to healthcare service-quality gap.
5	Scardina, 1994; USA ^[15]	To adapt and evaluate SERVQUAL as a tool for measuring patient satisfaction with nursing care, particularly by assessing patients' expectations and perceptions of nursing service quality.	Pilot study conducted in a large metropolitan hospital in the Mid-Atlantic region of the United States. 10 postoperative cardiothoracic patients participated (6 male, 4 female; mean age 52 years). A modified 22-item SERVQUAL questionnaire covering five dimensions—tangibles, reliability, responsiveness, assurance and empathy—was used with a 7-point Likert scale.	Negative service-quality gaps were found across four dimensions: Tangibles -0.037, Reliability -0.060, Responsiveness -0.050 and Empathy -0.040 (unweighted scores). Assurance showed 0.000, indicating that expectations were met. Weighted scores were -0.250, -0.300, -0.250, 0.000 and -0.200 respectively. Reliability and empathy showed the greatest areas requiring improvement.	It directly demonstrates the use of SERVQUAL to identify gaps between healthcare expectations and perceptions.
6	Lee & Youn, 2009; USA ^[16]	To examine how different eWOM platforms influence consumers' judgements and whether the valence (positive/negative) of eWOM changes this effect.	247 undergraduate students from a Midwestern university in the USA. A 3 × 2 between-subject experimental design was used: three eWOM platforms (brand website, independent review website, personal blog) × two eWOM valences (positive/negative).	eWOM valence had a significant effect on consumer judgements. The platform itself significantly affected circumstance attribution (F=4.43, p=0.02), but did not significantly affect product attribution, attitude or intention to rent. For willingness to recommend, a significant platform × valence interaction was found (F=4.71, p<0.01). Negative reviews reduced willingness to recommend regardless of platform.	Very high relevance.

7	Izogo, Jayawardhena & Karjaluoto, 2022; Nigeria ^[17]	To examine how consumers' previous online shopping experiences influence the perceived credibility of negative eWOM and how this affects consumer-firm relationship quality.	Scenario-based experimental study. Two main experiments were conducted. Study 1: 420 participants, 378 usable responses; 2×2 factorial design. Study 2: 400 participants, 380 usable responses; 2×2×2 factorial design. Participants were university staff/students in Southeast Nigeria with previous online shopping experience.	Previous positive experiences made consumers perceive negative eWOM as less credible, whereas previous negative experiences increased its perceived credibility. Emotional experience was the strongest negative predictor of perceived credibility of negative eWOM. Negative eWOM credibility negatively affected consumer-firm relationship quality, and relationship quality decreased as review frequency increased.	High relevance to eWOM.
8	Padilla-Fortunatti et al., 2019; Chile ^[18]	To analyse the difference between the importance and satisfaction of needs among family members of critically ill patients in an ICU.	Descriptive, cross-sectional analytical study conducted in a medical-surgical ICU of a university hospital. 253 family members of critically ill patients participated. The Critical Care Family Needs Inventory (CCFNI) and Importance-Performance Analysis (IPA) were used.	A negative gap (satisfaction < importance) was found in 100% of communication needs and 51.9% of support needs. Overall, 71.1% of family needs showed a negative gap. Major gaps included being contacted about changes in the patient's condition, having someone to contact the hospital, and receiving guidance at the patient's bedside.	Direct relevance to healthcare service-quality gaps.
9	Aeyels et al., 2018; Belgium ^[19]	To identify quality-improvement priorities in ST-elevation myocardial infarction (STEMI) care using Importance-Performance Analysis (IPA).	Observational quality-improvement study. A structured review of 300 patient records from 15 acute hospitals was conducted. Importance levels were established through a multidisciplinary RAND Delphi survey covering 23 key interventions.	Seven key interventions were identified as overall priorities for improvement. Priorities included risk assessment, timely reperfusion by PCI, and secondary prevention. Significant variation in performance was found across hospitals, and the number/type of priorities differed between hospitals.	Direct relevance to healthcare service-quality improvement.
10	Mohebifar et al., 2016; Iran ^[20]	To evaluate the quality of services provided in teaching hospitals using the Importance-Performance Analysis (IPA) matrix.	Descriptive-analytic, cross-sectional study conducted in six academic hospitals in Qazvin, Iran. 360 patients participated through stratified random sampling. Data were collected using SERVQUAL and analysed using IPA.	A significant gap between patient expectations and perceptions was found across all five SERVQUAL dimensions ($p < 0.05$). The largest gaps were in reliability (2.36) and assurance (2.24), while responsiveness had the smallest gap (1.97). The authors concluded that quality improvement was needed across all dimensions.	Very high relevance.

11	Wu & Hsieh, 2012; Taiwan [21]	To evaluate the service quality of an orthopedic department and identify its major strengths and weaknesses from patients' perspectives.	Case study / quantitative survey. A 22-item questionnaire based on SERVQUAL was administered to patients discharged from orthopedic wards. 149 questionnaires were issued; 115 were valid (77.2% response rate).	Physicians' expertise had the highest importance and highest performance rating. Convenient transportation and parking had the lowest performance rating. IPA identified 9 major strengths and no major weaknesses.	Very high relevance.
12	Hennig-Thurau et al., 2004; Germany [22]	To identify and examine the motivations that lead consumers to generate eWOM on Web-based consumer-opinion platforms.	Quantitative online survey. 4,445 people responded; 2,083 users who had previously written online comments were considered, and after excluding 20 incomplete/inconsistent cases, the final sample was 2,063 eWOM providers.	Identified 11 potential motives for eWOM. The analysis showed that concern for other consumers, social benefits, economic incentives, helping the company, advice seeking, self-enhancement, redress, positive emotions and negative feelings were important drivers of eWOM behaviour. Consumers could also be grouped into different motivation-based segments.	High relevance to eWOM.
13	Xia & Bechwati, 2008; USA [23]	To examine why some online consumer reviews are more influential than others, focusing on cognitive personalization and its effect on consumers' purchase intentions.	Two experimental studies. Study 1 included 85 undergraduate students and used positive online reviews. Study 2 included 82 students and replicated the experiment using negative reviews. Participants evaluated reviews of an airline and a digital camera.	Higher cognitive personalization increased purchase intentions for positive reviews, with the effect primarily mediated by perceived usefulness. For negative reviews, cognitive personalization significantly affected purchase intentions for airline reviews but not camera reviews.	High relevance to eWOM.
14	Sloane et al., 1999; Australia [24]	To determine who makes the decision when selecting a hospital and identify the factors considered in the hospital-selection process.	Descriptive structured survey of doctors in rural and regional New South Wales. Questionnaires were sent to 277 doctors, with a 26% response rate; 71 doctors responded (48 GPs and 17 specialists were specifically reported in Table 1).	Approximately 65% of respondents believed that patients had the final say in hospital choice, while 28% believed doctors had the final say. Important factors included standard of hospital services, nursing care, location, patient preference and cost/accommodation-related factors.	High relevance to healthcare service choice.
15	Robinowitz & Dudley, 2006; USA [25]	To review evidence on public reporting of healthcare provider performance and examine how reporting of quality information affects providers' quality	Narrative review/review of empirical studies; no primary sample. The paper reviews previous research on public reporting/report cards and proposes strategies to improve their	Public reporting showed real but generally small effects on provider quality improvement, consumers' impressions and provider selection. The authors suggest improving the usefulness, clarity and validity of reported	High relevance to patient decision-making and healthcare quality information.

		improvement efforts and consumers' perceptions and selection of providers.	usefulness.	information to increase its impact.	
16	Ferguson et al., 2010; Canada [26]	To examine whether customer sociability and different dimensions of the total healthcare service experience influence positive WOM intentions.	Cohort study of 500 surgical patients, assessed before surgery, three days after surgery and one month after surgery. Variables included personality traits, personal values, information adequacy, pain/discomfort, patient-to-patient interaction, patient-to-personnel interaction and recovery outcomes.	Customer sociability was significantly associated with positive WOM intentions. All dimensions of the total service experience were associated with positive WOM intentions to varying degrees. Results were consistent at three days and one month after surgery.	Very high relevance.
17	Leister & Stausberg, 2007; Germany [27]	To identify the factors patients consider when selecting a hospital and determine the relative importance of these factors, including experience, referrals, quality information, recommendations and hospital characteristics.	Two-phase study using pilot interviews and conjoint analysis. Pilot study: 50 patients. Main study: 151 patients from two German hospitals—62 from Klinikum Niederrhein and 89 from University Hospital Essen.	Patients' own experience was the most important factor, followed by GP referral, certified quality management and positive press coverage. Recommendations from relatives/acquaintances and distance were less important. When experience-based information was unavailable, hospital reception/personnel, quality management, quality reports and website information became more important.	Very high relevance.
18	Trigg, 2011; UK [28]	To explore online patient reviews of healthcare providers, focusing on patients as judges of healthcare quality, motivations for posting reviews, use of online review information, and the potential of patient-opinion websites to support patient choice and quality improvement.	Narrative essay/review; no primary sample. The article discusses existing evidence and literature on online healthcare reviews, patient feedback and provider choice.	Online patient reviews can provide information for healthcare provider selection and act as a channel for patient feedback and quality improvement. However, concerns exist regarding patients' ability to assess technical quality and the credibility and representativeness of online reviews.	Very high relevance.
19	Walsh & Mitchell, 2010; Germany/UK [29]	To examine how consumer confusion caused by similarity, information overload and ambiguity affects word-of-mouth	Quantitative research using a sample of 355 consumers. Confirmatory factor analysis and structural equation modelling	The three dimensions of consumer confusion had different effects on WOM, trust and satisfaction. Information overload and ambiguity were positively	High relevance to eWOM and patient decision-making.

		behaviour, trust and customer satisfaction.	(SEM) were used to test the proposed relationships.	associated with WOM, while similarity confusion showed a negative relationship with WOM. Six of the nine hypotheses were supported.	
20	Gruen et al., 2006; USA [30]	To examine the effect of customer-to-customer online know-how exchange (eWOM) on perceived value and customer loyalty, and to identify factors that encourage participation in online know-how exchange.	Quantitative online survey of 616 participants from an Internet user forum for a software product. Data were analysed using factor analysis and structural equation modelling.	eWOM/online know-how exchange significantly increased perceived value and word-of-mouth intentions, but did not significantly affect repurchase intentions. Motivation and ability significantly influenced participation in eWOM, whereas opportunity did not.	Very high relevance to eWOM.
21	Dobele & Lindgreen, 2011; Australia, UK & Belgium [31]	To explore the nature of customer value in healthcare word-of-mouth referrals, particularly why mothers use and value recommendations when selecting healthcare providers.	Qualitative interpretive study based on 16 in-depth interviews with mothers.	Mothers valued referrals based on quality of healthcare experience, staff friendliness and expertise, and credibility of the information source. Personal recommendations were considered particularly valuable because they helped mothers evaluate providers and reduce the time required for information search and decision-making.	Very high relevance.
22	Harrison-Walker, 2001; USA [32]	To develop and validate measures of word-of-mouth communication and examine service quality and customer commitment as antecedents of WOM.	Quantitative survey of 471 consumers from two midsize college towns in the southeastern USA. Respondents evaluated either a hair salon or veterinary service provider. Data were analysed using exploratory factor analysis and structural equation modelling.	Affective commitment was positively related to both WOM Activity and WOM Praise. Service quality positively influenced WOM Praise and negatively influenced WOM Activity in the veterinary-service sample; these relationships were not significant for the hair-salon sample.	Very high relevance.
23	Singh, 1990; USA [33]	To examine voice, exit and negative word-of-mouth (WOM) behaviours following consumer dissatisfaction and to determine whether these behaviours differ across service categories.	Cross-sectional mail survey of households with a recent dissatisfying experience involving automotive repair, medical care or grocery shopping. 3,000 questionnaires were mailed (1,000 per service category). Usable responses ranged from 116 to 125; medical-care responses were included in the analysis.	Negative WOM behaviour differed significantly across service categories ($\chi^2=26.9$, $p<0.01$, Cramer's $V=0.27$). Negative WOM was reported by 56.8% of automotive-repair respondents, 56.9% of medical-care respondents and 28.2% of grocery respondents.	High relevance.

24	Filieri et al., 2021; France [34]	To examine whether hotel/service attributes mentioned in extremely positive and extremely negative online reviews influence perceived review helpfulness, and whether hotel category moderates these relationships.	Quantitative text-mining study of 25,199 TripAdvisor reviews from 220 French hotels, including 490 extremely negative reviews and 3,757 extremely positive reviews. Latent Semantic Analysis (LSA) and Tobit regression were used.	Hotel attributes discussed in extreme reviews influenced their perceived helpfulness, with effects varying according to the type of rating and hotel category. For higher-category hotels, hospitality-related attributes positively influenced helpfulness, while some amenity-related attributes had a negative effect.	Very high relevance to eWOM.
25	Purcarea et al., 2013; Romania [35]	To examine the factors determining the perceived credibility of eWOM messages in healthcare services and their influence on consumers' intention to purchase a healthcare consultation.	Quantitative cross-sectional survey of 127 women, selected through random sampling. A self-administered questionnaire using a 5-point Likert scale was used; relationships were tested using Partial Least Squares (PLS).	Argument strength and source credibility were both positively related to intention to purchase a healthcare consultation. All structural paths were statistically significant, and argument strength had the strongest impact. Together, the variables explained 58% of the variance in purchase intention.	Very high relevance.
26	Pauli et al., 2023; International [36]	To systematically review existing research on WOM and eWOM in healthcare, identify factors influencing WOM, and identify research gaps.	Systematic literature review of 34 articles published between January 2000 and December 2019. Searches were conducted in EBSCOhost Business Source Premier and ScienceDirect.	The review found that most studies focused on the creation and impact of WOM, while relatively few examined its spread. Negative reviews had stronger effects than positive reviews, with service quality identified as a major reason for negative WOM. The review also highlighted the growing importance of eWOM and online reviews in patient decision-making.	Extremely high relevance.
27	Lim & Tang, 2000; Singapore [37]	To assess patients' expectations and perceptions of hospital service quality and identify gaps expected and perceived service performance.	Quantitative survey of 252 patients using an adapted SERVQUAL questionnaire. The final instrument contained 25 expectation and 25 perception statements across six dimensions.	Significant gaps were found between patients' expectations and perceptions across all service-quality dimensions. Assurance and responsiveness were particularly important to patients. The largest service gap was waiting time (1.23), followed by explanation of medical conditions (0.96) and treatment with dignity and respect (0.95).	Very high relevance to healthcare service quality.

28	Astuti & Nagase, 2016; Indonesia [38]	To develop a framework explaining patient loyalty to healthcare organizations based on relationship marketing, patient satisfaction, provider switching and retention programmes.	Quantitative cross-sectional survey of 206 patients receiving outpatient treatment at a hospital and a clinic. Data were analysed using Structural Equation Modelling (SEM) with Partial Least Squares (SmartPLS 2.0).	Relationship marketing was significantly associated with patient satisfaction and provider switching. Satisfaction was positively related to loyalty but was not statistically significant. Provider switching was negatively associated with loyalty. The relationships differed between hospital and clinic patients.	High relevance.
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The findings of studies indicate that healthcare service quality is multidimensional and extends beyond clinical outcomes. Factors such as professional competence, hygiene and cleanliness, medical equipment, waiting time, reliability, responsiveness, communication, empathy, and interpersonal interactions were identified as important components of patients' evaluation of healthcare services. The difference between patients' expectations and their actual perceptions is being studied. Studies show that this gap can actually identify the areas of improvement. The literature highlights the importance of electronic word-of-mouth (eWOM) and patient centric information. It also provides information of both positive and negative experiences through online platforms. Important themes in reviewed literature are communication, interpersonal relationships, trust, and patient-centric care [11-38].

3.2 Empirical survey results

From the collected data of 196 respondents in Noida, 166 (84.7%) said that they searched online reviews before selecting a hospital. In terms of influence of online reviews on provider selection, 27.6% respondents reported high influence whereas 64.3% reported moderate level. Further, 167 respondents (85.2%) reported avoiding a healthcare provider because of negative online reviews. Google reviews are used most widely used platform (81.6%), followed by Practo (36.2%) and hospital websites (27%). The major concerns reported in negative reviews were poor service quality (54.6%), medical negligence or misdiagnosis (48.0%), cleanliness and hygiene (37.8%), treatment costs (35.7%), waiting times (34.7%), and staff behaviour (33.7%).

Respondents verified online information by checking multiple review sources and consulting friends or family. The relationship between searching for online reviews and avoiding providers because of negative reviews was statistically significant ($\chi^2 = 15.57$, $p < 0.001$; Cramer's $V = 0.282$). Similarly, the influence of online reviews was positively associated with provider avoidance ($\rho = 0.280$, $p < 0.001$).

4. Analysis

The empirical data gathered from 196 respondents in Noida can give out very important inferences about eWOM and how it affects perceptions and decision-making in healthcare. The results show that negative online reviews have a powerful effect on healthcare decisions, with 85.2% of respondents agreeing that they have avoided providers with bad reviews. This tendency to avoid certain providers is consistent with previous researches, which shows that eWOM in healthcare is weighed more heavily than in other sectors due to the severity and risk associated with decisions involving medical care.

These findings directly relate to SERVQUAL dimensions, especially concerning gaps in reliability and responsiveness, identified as very important determinants of patient satisfaction. Respondents' concerns were regarding poor service quality, medical negligence or misdiagnosis, cleanliness, cost of treatment, waiting time, and staff behavior. Respondents also accepted that above all the reviews about the healthcare provider, the doctors' expertise and reputation becomes priority.

The online platform analysis unveiled that the principal sources for eWOM in the healthcare arena in urban India were Google Reviews (81.6%), Practo (36.2%) and hospital websites (27.0%) mirroring the digitalization of healthcare information-seeking behaviour. With that said, the extent of their influence was very different, with 64.3% of respondents being moderately influenced and 27.6% being extremely influenced by online reviews in selecting healthcare providers. This implies that while eWOM is certainly an influencing factor for most patients, a significant minority hold digital feedback as paramount when considering crucial decisions for their health.

It has become a considerable challenge for health care executives to comprehend and manage the expectations of patients to offer and secure a high quality of care along with sustaining competitiveness in the organization [39]. Patients in the current digital age are today more informed than ever, actively seeking health information online, and comparing the care that they received to their expectations. When these expectations are not met because of perceived quality issues, service inefficiencies, or cost, patients are increasingly able to switch providers and also disharmony the provider through sites and social media platforms. Thus, while managing the expectations of patients is formerly seen from a clinical perspective, in this reality, it has become a priority strategic activity for health care organizations. Patient satisfaction would serve as an important barometer for measuring the quality of health services but founded upon the match or mismatch between patient expectations and the actual experiences. Therefore, health care leaders will proactively dig into understanding the root causes of patient discontent through numerous means-satisfaction surveys, focus groups, and meticulous monitoring of eWOM across digital platforms [4]. Research consistently shows that non-clinical factors such as communication skills of the provider, empathy of the staff, and care coordination usually weigh as much as medical outcomes by patients in their satisfaction ratings. The patients who feel they were genuinely heard and respected by their care team today enjoy higher patient satisfaction levels and greater loyalty to providers.

5. Discussion

The results of this study show that, in the digital age, electronic word-of-mouth has grown to be a significant factor in patient decision-making and healthcare service evaluation. According to the systematic review and the empirical results from 196 respondents in Noida, patients' opinions of healthcare services are influenced by a variety of factors, including service experiences, staff behavior, waiting times, communication, affordability, and information accessible online. Negative eWOM may have behavioral and reputational repercussions.

The results also imply that eWOM may serve as a proxy for perceived gaps in service quality. Patients' online assessments cover interpersonal and operational aspects of healthcare delivery in addition to technical aspects of therapy, as evidenced by complaints about inadequate clinical care, staff behavior, and lengthy wait times. These findings, especially the significance of dependability, responsiveness, and empathy in influencing patient satisfaction, are in line with the study's application of the SERVQUAL viewpoint.

The findings also show how digital platforms are becoming more and more important in the search for healthcare information. Only a small percentage of respondents said they were unaffected by internet reviews when choosing healthcare providers, despite Google Reviews and Practo being recognized as significant sources of eWOM. This implies that online patient feedback and service-quality management can no longer be handled independently by healthcare organizations. Rather, eWOM can offer an extra source of data for recognizing persistent patient issues and comprehending regions where expectations and real experiences might diverge.

In recent studies, patient perceptions concerning healthcare quality have been demonstrated to contain a number of specific dimensions not included within the judgment of traditional measures. One such crucial aspect is the patient-centered approach, which focuses on treatment tailored to the individual, active patient participation in decision-making, and holistic attention to physical and emotional needs. Outcomes associated with this approach have, to a great extent, improved the level of satisfaction and loyalty among patients, which can be further witnessed in positive reviews and recommended mentions online. Patients are becoming aware and appreciative of those who bring their clinical skills to achieve optimum patient outcomes; the performance profile often becomes a central point of eWOM discussions [5]. Inadequate communication often induces negative feedback comments on the internet along with some frustration while great communication is delivering praises in patient review [40].

The empathy and psychological support provided by healthcare workers is, of course, another significant factor in assessing patient experiences. Patients recollect that feeling of compassionate care bestowed on them during times of sensitivity and fragility, which is then likely to be reiterated in their testimonials, blogs, and social networking sites [41]. Digital accessibility and convenience hold their end of the bargain of contemporary care quality. With telehealth services blooming, patients have been increasingly evaluating their providers by how good their digital infrastructure is, including the ease-of-use of online portals, effective and uncomplicated appointment scheduling, and smooth access to medical records [42]. Cost transparency is now another important facet influencing patient satisfaction. Clarifying the treatment costs involved, insurance coverage, and any out-of-

pocket expenses engenders trust and calms patient apprehension. Unexpected charges and ambiguous billing practices usually result in negative online reviews and damage institutional reputations.

These alternative dimensions of health care quality have a direct effect on the generation and dissemination of eWOM messages. Positive occurrences in these dimensions lead to good online recommendations, while negative occurrences lead to poor reviews that could deter potential patients. The healthcare organizations that keep on top of eWOM by monitoring and responding to it will get invaluable insights for quality improvement and reputation management. By aligning the delivery of services with factors of importance to patients, providers can enhance satisfaction and develop trust, thereby projecting a favorable influence on their online image in these times of digital health care. As providers improve these care dimensions per feedback from patients, positive online sentiment increases, thereby strengthening their position. This goes to show how essential good service quality and online reputation management have become to health-care delivery today.

In the healthcare industry, credibility acts as one of the building blocks of trust with regard to patients. Patients would always seek care providers and healthcare institutions that have potential credibility through accurate diagnosis, evidence-based treatment approaches, and open communication. This would, in one way or another, affect their electronic word-of-mouth (eWOM) since an individual who sees the provider as trustworthy would be more willing to share positive experiences through online reviews and recommendations. Such digital word-of-mouth can very well enhance the reputation of an organization and can act as a marketing tool to attract new patients to seek care from that healthcare organization.

Patient-centred care is an important component of healthcare quality, focusing on understanding patient needs and providing personalised care. Empathy, clear communication, and respectful interactions can shape patients' experiences and may be reflected in online reviews. Similarly, the physical and digital aspects of healthcare facilities, including cleanliness, waiting areas, equipment, patient portals, and telehealth services, can influence patient perceptions and eWOM. Professional appearance and behaviour of healthcare staff may also contribute to patients' overall evaluations of service quality ^[43].

Digital health has introduced additional dimensions of healthcare quality that may influence patient satisfaction and online reviews. User-friendly websites and applications, online appointment booking, and access to medical records can shape patients' digital healthcare experiences. Monitoring eWOM can help healthcare providers identify recurring patient concerns and areas requiring improvement. Investment in digital infrastructure and staff training may therefore support better patient experiences and online reputation ^[40].

To close the expectation–experience gap, healthcare organisations should focus on patient-centred care, transparent communication, meaningful patient involvement, and efficient service delivery ^[10]. Effective communication and shared understanding can contribute to positive patient experiences, while issues such as long waiting times, poor staff responsiveness, and unclear costs may contribute to negative eWOM. Healthcare organisations can therefore benefit from systematically monitoring online feedback, responding to patient concerns, and using this feedback to identify areas for service improvement.

From a managerial perspective, the findings suggest that improving eWOM starts with improving the actual healthcare experience rather than simply trying to manage online reviews. Healthcare organisations can focus on better staff communication and empathy, reducing waiting times, improving operational efficiency, and being more transparent about costs. Regularly paying attention to patient feedback can also help hospitals identify and address the issues that often lead to negative reviews. In this way, eWOM can be seen not only as a way for patients to share their experiences, but also as a useful source of feedback for improving healthcare services.

Overall, the study shows a clear connection between patient experience, perceived service quality, eWOM, and healthcare decision-making. When patients have a positive experience, they are more likely to be satisfied, remain loyal to the healthcare provider, and share positive experiences online. On the other hand, when their expectations are not met or they experience problems with the services, they may share negative reviews, which can influence the choices of other patients. By combining the findings from the systematic literature review with the survey conducted in Noida, this study provides a better understanding of how online patient feedback can help identify service-quality gaps and support more patient-centred healthcare services.

6. Conclusions

The study emphasizes that eWOM is crucial in influencing patients' perceptions and their healthcare related decisions, particularly regarding the quality of services offered, staff attitude, and costs. The research reveals ongoing gaps within reliability, responsiveness, and empathy derived from the SERVQUAL model, indicating areas for improvement on the part of public and private healthcare institutions, which must work to better meet patient expectations. Combining systematic literature review with empirical survey data proves the effect of eWOM and provides stimuli for action for healthcare administrators.

Initiatives such as training staff to show empathy, having a transparent approach toward pricing, and performing sentiment analysis through AI on online reviews will definitely help in narrowing the service quality gaps and thus improve patient satisfaction. The study then paves the way for healthcare providers to streamline the patient feedback mechanism, especially into the public health system, in order that accountability and trust can be assured. The research, therefore, adds to the already widening discussions on digital patient engagement, thereby urging for active monitoring and response to eWOM by the healthcare providers, as service improvement strategy. Future research that might scale up this work includes going for interregional comparisons on the long-term impact the eWOM interventions could have on health outcomes. Filling these gaps will enable health systems to further satisfy the patients' needs in the digitalizing world.

The study contributes to the growing discussion on digital patient engagement by highlighting the potential of eWOM as a supplementary source of information for healthcare quality improvement. Future research may extend this work through interregional comparisons and longitudinal studies examining the longer-term effects of eWOM-based service-improvement interventions.