

NAVIGATING HEALTHCARE SERVICE QUALITY, PREPAREDNESS AND RESOURCES AVAILABILITY USING SERVQUAL DURING COVID 19

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ABSTRACT

Purpose – The objective of this paper is to propose a conceptual framework of patient satisfaction using the SERVQUAL model regarding the COVID 19 pandemic in terms of perceived risk, medical facility preparedness and availability of resources.

Design/methodology/approach – A systematic literature review of the most recent research in healthcare quality, SERVQUAL, perceived risk, resources, and patient satisfaction.

Findings – The paper proposes a conceptual framework that demonstrates the relation between SERVQUAL dimensions, healthcare facility preparedness, resources availability and perceived risk of COVID 19 based on Extended Valence theory. The SEVQUAL model that assesses healthcare service quality does not consider other factors that affect service perception, especially during crisis times such as COVID 19, which necessitates extraordinary preparation and support from the whole healthcare sector
Originality/value – The paper contributes through a proposed modified SEVQUAL model that was used to assess the service quality and the perceived risk Of COVID 19, supported by the extended valence framework theory. The proposed model will help practitioners and scholars by providing an interdisciplinary practical approach for measuring the healthcare service quality and patient satisfaction during COVID 19.

Keywords: healthcare, service quality, SERQUAL model, COVID 19

INTRODUCTION

Pandemics have been a threat since the dawn of humanity. With the events of the COVID 19 pandemic and its impact on the healthcare sector, the globe is in a challenging position that this generation has never experienced before (Al Rashidi et al., 2021; Yıldırım et al., 2020). COVID-19 is the most widespread pandemic since the Spanish flu epidemic of the 1920s, wreaking havoc on the economy and public health system (Barro et al., 2020). As a result of the pandemic, the healthcare system has deteriorated significantly (Collins et al., 2021). According to a report published by the Organisation for Economic Cooperation and Development, the crisis puts the public sector to the test. Governments are being pressed to act swiftly, coordinate crisis management efforts, and take drastic measures to protect vulnerable people (OECD, 2020). Given the importance of hospitals as primary care providers during pandemics like Covid-19, understanding patients' needs is a difficult task that can only be accomplished through evaluating patients' satisfaction (Alzaydi, 2021; Issai & Jarmajo, 2021; Khezeli et al., 2021; Shermin & Rahaman, 2021; Shirazi et al., 2020). The healthcare industry is one of the world's fastest-growing service industries. Various governments have taken various steps to increase funding for the healthcare industry to improve people's quality of life. Consistent consumer dissatisfaction with the quality of healthcare services, on the other hand, presents a considerable challenge to service providers (Mustaffa, 2021).

The availability of resources and the healthcare system's readiness to deal with the present pandemic have a significant impact on the quality of care offered to patients (Anyanwu et al., 2020; Ihekweazu, 2020). A country with substantial healthcare resources but insufficient delivery would suffer tremendously in the case of a COVID-19 pandemic (Bhagavathula et al., 2020). The COVID-19 pandemic, particularly tough for the public healthcare sector, which must care for individuals affected by the disease, revealed weaknesses in health systems (Deressa et al., 2021; Lai et al., 2020; Orlewska & Klusek, 2020; Shermin & Rahaman, 2021). The healthcare situation is chaotic and perplexing as a result of the pandemic's random and unexpected spread, even with the use of vaccination, as scientists and researchers learn more and more about the many aspects of vaccination every day (Issai & Jarmajo, 2021). The interactions between patients and doctors, as well as the frontline personnel, define the quality of service in a healthcare facility. As a result, people-centred healthcare facilities are becoming increasingly popular (Afthanorhan et al., 2019; Kashif et al., 2016; Rezapour et al., 2019; Zun et al., 2018).

Some research employed the SERVQUAL scale to assess the level of patient satisfaction with services and to assess service quality. This scale included five aspects to evaluate service quality, which had previously been covered in several research tangibility, dependability, responsiveness, assurance, and empathy (Ali et al., 2018; Arokiasamy, 2019; Awang et al., 2015; Azmi et al., 2017; Dobrin & Dinulescu, 2020; Dopeykar et al., 2018; Goula et al., 2021; Mohammadi-Sardo & Salehi, 2018; Mustaffa, 2021; Orzel & Horodecka, 2021; Tripathi et al., 2018; Zun et al., 2018). The SEVQUAL approach that analyses healthcare service quality does not incorporate other aspects that impact service perception, particularly during crisis moments such as COVID 19, which demands exceptional planning and assistance from the complete healthcare system.

Hence this paper aims to propose a conceptual framework of patient satisfaction using the SERVQUAL model regarding the COVID 19 pandemic in terms of perceived risk, medical facility preparedness and availability of resources.

LITERATURE REVIEW

The service quality dimensions can be categorised as tangible and intangible, including reliability, assurance, empathy, and responsiveness. The tangibles concept created by Parasuraman et al. is comparable to Bitner's servicescape concept, which focuses on the physical aspects of service contexts (Bitner, 1992; Parasuraman et al., 1988). Equipment, building design, staff, and physical communication materials are physical aspects. Bitner claims that a person's physical environment is complex and multifaceted, containing components such as design and environmental, spatial, and experience elements (Ali et al., 2018). Temperature, lighting, noise, music, and fragrance can all be used to alter the surrounding environment (Afthorhan et al., 2019; Jebraeily et al., 2019; Kim et al., 2017; Kwateng et al., 2017)

Tangibility

In the context of healthcare, tangibility refers to personnel and equipment that may all be seen as tangibles. To operationalize the tangibles dimension, four metrics were used: contemporary equipment, appealing facilities, professional appearance of the staff, and hospital cleanliness (Mohammadi-Sardo & Salehi, 2018; Mustafa, 2021; Orzeł & Horodecka, 2021; Qolipour et al., 2018; Tripathi & Siddiqui, 2018). Tangibility is crucial in patients' perceptions of service quality in the healthcare industry (Anabila, 2019; Islam et al., 2016; Kwateng et al., 2017, 2017; Mustafa, 2021). When patients arrive at the hospital, it is critical that their physical needs, such as cleanliness, supplies, and information, are satisfied.

Responsiveness

Responsiveness refers to a healthcare facility's goal to provide timely and helpful service to customers. Response time (quick services), willingness to help patients, ease of acquiring information from the hospital (patient enquiries), and response time (patient complaints) were the operationalized indicators for the responsiveness dimension (response) (Mohamad & Salehi, 2018; Orzeł & Horodecka, 2021; Qolipour et al., 2018). Another dimension of service quality is responsiveness, which is a quality that allows a company to be ready to assist customers in a timely manner while treating them with respect (Jebraeily et al., 2019). This dimension concentrates on the two most significant traits, namely willingness and speed (Fan et al., 2017; Fatima et al., 2018; Jebraeily et al., 2019; Maria Stock et al., 2017). As a result, the healthcare institution must ensure that consumers receive their services on time and without interruption. The facility conveys genuine concern for their well-being (Teshnizi et al., 2018). Comparing responsiveness to health measurements can also be used to evaluate the functioning of a health system. When health is assessed by looking at the results of care, the clinical procedures of care or disease prevention and health promotion programmes of health systems are examined (Bermúdez-Hernández et al., 2021).

Assurance

The assurance dimension was operationalized using four indicators: the hospital is capable of effectively handling patients' medical problems; the hospital takes adequate precautions to ensure the safety of their patients; doctors and nurses are knowledgeable and professional when answering patients' questions; and doctors and nurses are courteous (Mustafa, 2021a; Qolipour et al., 2018; Tripathi & Siddiqui, 2018). The third dimension of the SERVQUAL model is "assurance", which refers to the confidence-building characteristics of staff members, such as respect and familiarity with patients. It's a term used in health care to describe acts and programmes that provide or guarantee better treatment quality in a particular medical setting or programme. It's also essential for client retention and satisfaction. Chalise et al. (2018) found evidence of various patient characteristics that give assurance, including quick response, doctor and nurse courtesy, finance and pharmacy courtesy, receptionist courtesy, patient handling officer courtesy, information availability, and welcoming reception. The healthcare facility must identify difficulties or challenges with care delivery as part of the evaluation process, plan quality improvement activities to address them, and undertake follow-up monitoring to ensure they meet their objectives (Sadeh, 2017).

Empathy

Empathy involves providing individualised, one-of-a-kind service to all customers. Five indicators were employed to operationalize the empathy dimension: pleasant personalised attention, the hospital having patients' best interests in mind, comprehension of patients' specific needs, flexible consultation hours, and staff is never too busy to respond to patients' inquiries (Mohamad & Salehi, 2018; Orzeł & Horodecka, 2021; Qolipour et al., 2018). The fourth dimension of the SERVQUAL model is empathy which is crucial because it demonstrates how customers perceive and respond to customised attention and care. In their study, Ali et al. (2018) mentioned the importance of empathy in delighting customers. Goula et al. (2021) investigated the service quality of a public health clinic. Researchers found that patients had a more challenging time connecting with providers' empathy and tangibility, the dimensions with the smallest gap between patient expectations and perceptions (Goula et al., 2021). Empathy, in particular, is a crucial communication ability that has recently received increasing attention. When doctors demonstrate empathy in the therapeutic context, patients' emotions can assist doctors in making more accurate diagnoses and giving better therapy. Compassion does not imply that you share your patients' emotions; on the contrary, it might block appropriate diagnosis and treatment (Dobrin & Dinulescu, 2020).

Reliability

Reliability is the ability to offer proper service on time consistently and with the same level of quality (Mohamad & Salehi, 2018; Mustafa, 2021a; Orzeł & Horodecka, 2021; Qolipour et al., 2018; Tripathi & Siddiqui, 2018). The reliability dimension is

operationalized using five indicators: providing services on time as promised, delivering services correctly the first time, maintaining error-free records, and physician availability. The fifth dimension of the SERVQUAL model is reliability indicates that the healthcare facility must be able to operate without failure for an extended period of time (Gökmen Kavak et al., 2020; Hihnala et al., 2018; Mustafa et al., 2019; Oh & Kim, 2017). This concept is linked to several aspects of the healthcare system, including effectiveness (where failure can result from a failure to apply evidence), timeliness (where failure can result from a failure to take action within the required timeframe), and patient-centeredness (where failure can result from a failure to adhere to patients' values and preferences) (Orzeł & Horodecka, 2021).

Service quality in healthcare

Many academics have recognised the quality of a customer's experience as a critical factor in consumer behaviour studies (Ittamalla & Kunamneni, 2019; Tsai et al., 2020). According to Tripathi (2017), providing high-quality experiences is the key to satisfying customers. Basari & Shamsudin (2020) verified the beneficial impact of quality recognition on consumer trust. According to Heydari et al. (2019), the experience quality notion includes consumers' emotional reactions to their expected emotional wellness from the event. Healthcare services vary from previously examined other services such as retail banking, restaurants, and dry cleaning. Healthcare is a high-touch service requiring a close working connection between the patient and the provider. This bond has the potential to be long-lasting. According to Mitchell et al. (2016), to ensure customer happiness and satisfaction, the service provider must understand consumer expectations and aim to exceed them. Typically, marketers assess service quality in terms of patient perceptions from the perspective of the healthcare customer (Mitchell et al., 2016). They recognise that these perspectives may be more broadly understood than the provider's, and they adopt a holistic approach to the entire healthcare experience (Mitchell et al., 2016). According to several studies (Al-Neyadi et al., 2018; Kwateng, et al., 2017; Alumran et al., 2021; Azmi et al., 2017; Dobrin & Dinulescu, 2020; Sahoo & Ghosh, 2016), this stance may differ among public and private healthcare organisations. Technical aspects of health treatment, as well as peripherals such as physical facilities, contact points with facility staff, and other tangible evidence such as reading material, would be included in this approach (Pamucar et al., 2021; Qureshi et al., 2018).

Service quality during COVID 19

Changes in important service characteristics, including tangibility, dependability, certainty, responsiveness, and empathy, may significantly improve the quality of healthcare services during the COVID 19 pandemic (Gita & Kumar, 2021). Pandemics like COVID-19 will be prevented or mitigated by effective public health response services (Issai & Jarmajo, 2021). In most countries, preparedness methods such as lockdown and social distancing are the only possibilities (Anyanwu et al., 2020). It is now more vital than ever to address these issues to improve service mechanisms and analyse patient perceptions of service quality in COVID 19 so that we may learn from our mistakes and provide better healthcare to patients in the future.

METHODOLOGY

A comprehensive review of the current literature was done. The process of scanning literature is demonstrated in the PRISMA flow chart in Figure 1 as it describes the paper's methodology. "Web of Science" was mainly used as the main search database in the paper context. Different databases were also reviewed, including Google Scholar, Springer, Elsevier, Science Direct and PubMed. "Web of Science" has a superior advantage over other search engines in identifying articles in various scientific journals with precise accuracy in the chosen keywords. Additionally, the database provides many filters that facilitate the search process based on the inclusion and exclusion criteria.

This paper aims to provide a conceptual framework for patient satisfaction with healthcare service quality during COVID 19. The search has the following criteria and parameters. The keywords used are "healthcare quality, SERVQUAL, perceived risk, resources, patient satisfaction". The databases were searched based on the time interval between 2017 to 2022. The inclusion and exclusion criteria of the research are developed based on (Papadogiannis et al., 2020) as follows:

Inclusion Criteria

- Studies following SERVQUAL in the healthcare sector
- The application of SERVQUAL in primary healthcare facilities
- Patient satisfaction with the healthcare facility is based on the SERVQUAL model.
- Studies discussed the healthcare service quality during the COVID 19 time.
- Studies in English

Exclusion Criteria

- Articles not written and published in the English language.
- Review articles
- Studies about other topics include quality of life, job stress, and medical staff working conditions quality.

There were 1004 papers found in the first phase. Following that, inclusion criteria were used to filter the titles and abstracts of the articles. The first phase implied the time interval limitation leading to 519 studies. The second phase was the preliminary exclusion of the non-English studies, which led to 346 studies. The third phase was the exclusion of articles off-topic, review articles, and inclusion of articles about patient satisfaction which led to 64 studies. These studies were reviewed in terms of title and abstract. Another filtration phase of duplicate exclusion duplicates. After thoroughly examining all the texts and applying the inclusion and

exclusion criteria, this process reviewed 12 articles about healthcare quality, patient satisfaction and the SERVQUAL model, 14 about healthcare quality and COVID, as indicated in Figure 1. These articles provided the full literature review that was developed in this paper. These articles are believed to be relevant to the topic and can help the research reach.

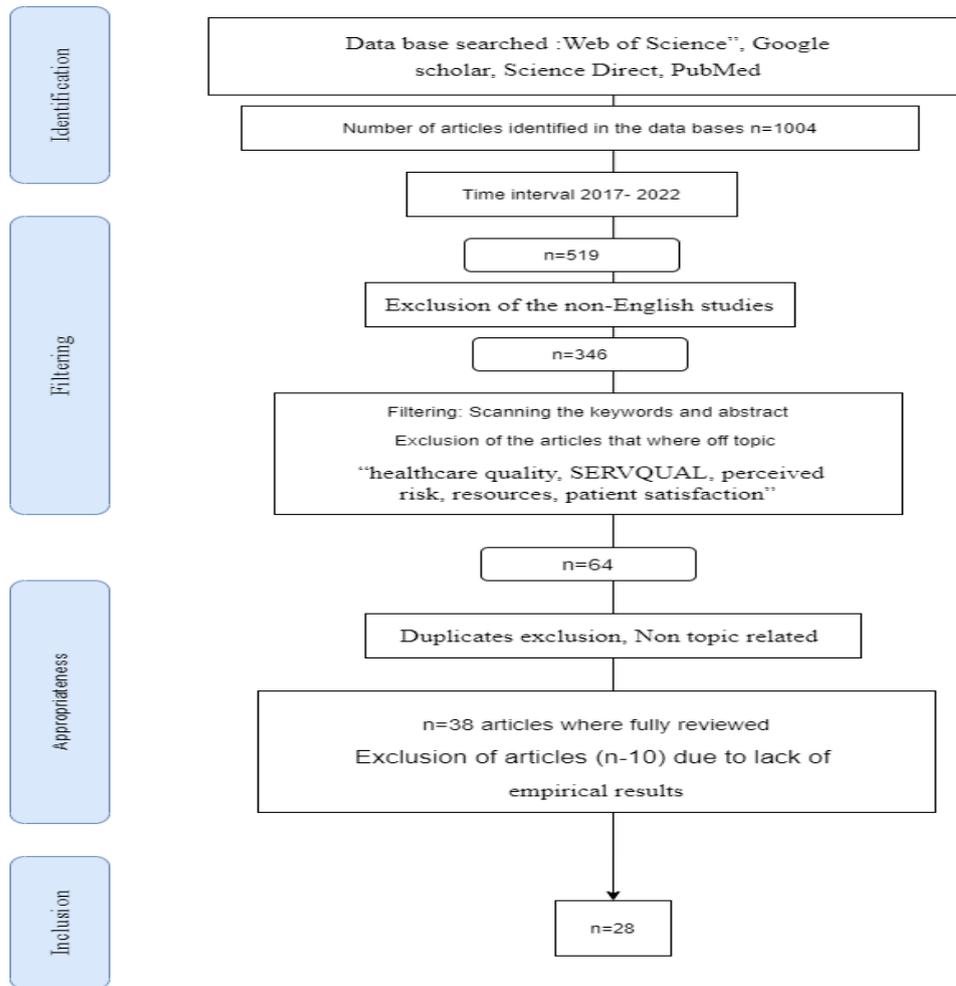


Figure 1 PRISMA flow chart of systematic literature review

RESULTS

The development of the review is viewed based on specific criteria, which help to reach the study's objectives. The selected studies are scanned for the following information, country, Context, Model, DV, IV (if applicable), and method, including sample size, the results and findings, and limitations. The result is divided into table forms to easily visualize the data to get a theme and develop the connection between the mentioned criteria.

Certain patterns were detected in the collected data; Table 1 summarises the studies that used the SERVQUAL model in healthcare. In table 2, the attempt's link is aimed to be established between the SERVQUAL model in healthcare during COVID table 3 examines the risk perception, preparedness and resources and service quality during COVID 19.

Summary of literature review:

Table 1 Summary of studies on the SERVQUAL model in healthcare

Author, year	Country	Context, Model, DV, IV	Method	Significance/findings	Limitation
(Bermúdez-Hernández et al., 2021)	Colombia	Medical emergency services SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Qualitative, 511	Assurance, infrastructure; responsiveness affected the service experienced by the patient.	Geographic limitation, only qualitative, cross-sectional, no Socio-demographic variables, no patient satisfaction, no hospital staff
(Goula et al., 2021)	Greek	Health services SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 700 patients in 5 general public hospitals	Patients' expectations regarding the quality of the provided services were not met.	Cross-sectional, only quantitative, address the conventional 5 dimensions of SERVQUAL only, no hospital staff
(AlOmari, 2020)	Syria	Health-care services (SERVQUAL) (DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 316 patients from 5 private hospitals in Damascus		Geographic limitation no patient satisfaction or loyalty, population, no hospital staff's involvement, geographic, scope limited to private hospitals only
(Jebraeily et al., 2019)	Iran	Hospital information system SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 270 users in Urmia University of Medical Sciences	The negative gap between the patients' expectations and perceptions of the service	Geographic limitation, no patient satisfaction, small sample size, no hospital staff involvement

Author, year	Country	Context, Model, DV, IV	Method	Significance/findings	Limitation
(Andrade et al., 2019)	Brazil	Primary Health Care SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 350 elderly patients	Low satisfaction among the patients due to gaps in the dimensions of the SERVQUAL Model.	Cross-sectional, only quantitative, address the conventional 5 dimensions of SERVQUAL only, small sample size
(Zun et al., 2018)	Malaysia	Public health-care services (SERVQUAL)DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 386 patients from nine 1 Malaysia Clinic in Kota Bharu, Malaysia	Socioeconomic affects the Patient Perception and accessibility of health services among low-income population	Cross-sectional, only Quantitative, small sample size, no patient satisfaction, Geographic limitation, no hospital staff involvement
(Dopeykar et al., 2018)	Iran	Dental services (SERVQUAL) DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 385 patients from a Specialized Dental Clinic in Tehran	The negative gap between the patients' expectations and perceptions.	Only dental service, cross-sectional, only Quantitative, only views of the patients need opinions of other stakeholders such as physicians, managers, and other service providers,
(Qolipour et al., 2018)	Iran	medical tourism (SERVQUAL) DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness) + Exchange and travel facilities, Technical and infra-structure facilities, Safety and security	Quantitative, 250 tourists from private and public hospitals	Exchange and travel facilities, Technical and infra-structure facilities, Safety and security are added to the SERVQUAL	Small sample size, limited to Iraqi tourists, Geographic limitations,
(Al-Mhasnah et al., 2018)	Jordan	Health-care services (SERVQUAL)DV: Patient satisfaction) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 350 patients in Al Hussein Military Hospital	Low patient satisfaction despite implementing multiple quality programs such as health accreditation, ISO, and King Abdullah II Excellence Award.	Cross-sectional, only quantitative, Geographic limitation, only views of the patients

Author, year	Country	Context, Model, DV, IV	Method	Significance/findings	Limitation
(Chalise et al., 2018)	Nepal	Nursing care. SERVQUAL MODEL DV: Patient satisfaction) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 115 patients in two larger tertiary hospitals in Kathmandu Valley	Tangibility and nurses' communication skills need improvement to enhance patient satisfaction	small sample size, limited context to nursing care
(Teshnizi et al., 2018)	Iran	Health services SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	A systematic review, meta-analysis	The negative gap between the patients' expectations and perceptions	The small sample size for subgroups such as age, sex and marital status, publication bias
(Fan et al., 2017)	China	Health-care services (SERVQUAL) DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 1,303 patients from 27 governmental hospitals in 15 provinces in China	The service quality gap of each service dimension was negative	No patient satisfaction and loyalty, the population is for patients only no hospital staff's involvement,
(Ali et al., 2018)	India	Health services SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Qualitative, 210 patients in private hospitals in Delhi	The negative gap between the users' expectations and perceptions,	geographic limitation to Delhi, small sample size, the research should be done before and after the service,
(Azmi et al., 2017)	Bangladesh	Nursing and health care services SERVQUAL MODEL DV: Patient satisfaction) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 400 patients	All dimensions significantly influence patient satisfaction	Should add other variables, including emergency patients, lab-reports accuracy, timely and appointment-based patient observation, hygienic environment, timely report delivery, etc. should be provided

Table 2 Summary of studies on the SERVQUAL model in healthcare during COVID

Author, year	Country	Context, model, DV, IV	Method, sample size	Significance, findings	Limitation,
(Shermin & Rahaman, 2021)	Bangladesh	Water, Sanitation, and Hygiene, COVID 19 SERVQUAL MODEL DV: quality of sanitation service) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)		Negative gap in all aspects of SERVQUAL model	Risky to conduct field surveys, and people are tensed about the pandemic, unable to observe the current sanitation service quality in the slum areas
(Issai & Jarmajo, 2021)	Nigeria	Service quality in Isolation centres, COVID 19 SERVQUAL MODEL DV: Quality Delivery) (IV: Healthcare facilities, Provision of care facility, Establishment of the testing facility)	literature review	SERVQUAL model can be used as an appropriate tool for continuous service improvement during COVID-19 in health care facilities.	lack of field application limited only to isolation centres,
(Khezeli et al., 2021)	Iran	Health services, COVID 19 SERVQUAL MODEL DV: Patient Perception, Expectation) (IV: Tangibility, Empathy, Assurance, Reliability, Responsiveness)	Quantitative, 100 patients with coronavirus were admitted to Farhikhtegan Hospital	Highest Perceived quality in responsiveness and lowest intangibility, Expectation highest reliability and lowest is tangibility. Service quality gap positive for responsiveness, empathy, negative tangibility, reliability, assurance	small sample size
(Orzeł & Horodecka, 2021)	Poland	Healthcare, personal protective equipment, COVID 19 SERVQUAL: risk perceptions	Literature review	Create a helpful questionnaire for quality assurance of health care workers' protective equipment (PPE)	Only conceptual paper

Table 3 Summary of studies on Risk perception, preparedness and resources and service quality during COVID 19

Author, year	Country	Context, model, DV, IV	Method, sample size	Significance, findings	Limitation,
(Yıldırım et al., 2020)	Turkey	Healthcare professionals, DV: perceived risk IV: anxiety, resilience, depression, and stress	Quantitative, 204 healthcare professionals who were actively treating patients confirmed with COVID-19	Perceived risk and COVID 19 fear positively led to depression, anxiety, and stress	Contextual limitation as the study did not address the effect of the perceived risk on the quality of the healthcare provided
(Abid et al., 2020)	Pakistan	Healthcare workers, non-Healthcare Workers. DV: Perceived Risk IV: perception of susceptibility and severity toward COVID-19	Quantitative, 1406 respondents (507 HCWs and 899 NHCWs)	Perceived Risk mostly affects healthcare students, young people, females and individuals with lower income which led to psychological distress.	Contextual limitation or did not examine perceived risk, on the quality of the healthcare, patients' perception or their satisfaction
(Sang & Cheng, 2020)	China	DV: perceived risk, community health care, intentions to use IV: patient anxiety, intentions to use community health clinics	Quantitative, 869 respondents	Some community clinics have lower quality than large hospitals and were positively related to perceived risk	further investigation is required to examine the relationship between perceived risk and the hospital quality or the intention to use community health clinics
(Juaristi et al., 2022)	Spain	SERVQUAL scale	prospective observational study from March 2020 to March 2021	Reasonable patient satisfaction with virtual retina clinic rather than face to face clinic	The contextual limitation of the study only included one Ophthalmology clinic and compared virtual to face-to-face examinations, which may not be applicable in some cases.
(Gökmen et al., 2020)	Turkey	Management and Organization, performance Measurement and Quality Improvement, Healthy Work-Life, Patient Experience in relation to the COVID-19 process	accreditation standards with the Covid-19 process	Risk management, outsourcing, material, and device management were affected by COVID 19 process	Geographic limitation as the study was only performed by the Turkish Healthcare Quality and Accreditation Institute

Author, year	Country	Context, model, DV, IV	Method, sample size	Significance, findings	Limitation,
(Bhagavathula et al., 2020)	Worldwide	knowledge and perceptions of HCWs about COVID-19.	Quantitative, 453 respondents	A significant proportion of HCWs had poor COVID 19 knowledge	Small sample compared to the study population.
(Wahed et al., 2020)	Egypt	knowledge and attitude of healthcare workers	Quantitative, 407 respondents	Unavailability of personal protective equipment was	The studies did not reflect the findings on the healthcare service quality
(Arslanca et al., 2021)	Turkey	knowledge of healthcare workers regarding COVID 19	Quantitative, 251 respondents	Good knowledge of COVID 19 but low level of preventive behaviour	
(Gohel et al., 2021)	India	knowledge and perception of medical students about COVID 19	Quantitative, 715 respondents	Good knowledge about COVID 19 and its preventive measures	

DISCUSSION

Theoretical models

Parasuraman's service quality model is the most well-known. It is based on consumer input on service quality in "retail banking, credit card, stocks brokerage, product repair, and maintenance organisations." (Parasuraman et al., 1985). According to the Parasuraman model, businesses may fail to recognise the characteristics that a service should have to meet client needs. However, to obtain high service quality, desirable qualities of the services must be applied.

Although Parasuraman et al. (1985) are one of the most often used service quality models, it considers service quality to be the difference between customer expectations and customer perceptions of the service. The SERVQUAL model facilitates finding the gap between consumers' expectations and the quality of service delivery in the medical industry by comparing consumers' expectations with the quality of existing service delivery (Sadeh & Garkaz, 2019). The model did not account for the patient's or customer's perception of risk, which impacts the patient's or customer's final level of happiness. Expectancy-Disconfirmation Paradigm, Extended Valence Framework, and stakeholders' theory were utilised to describe the relationship between service quality, satisfaction, and perceived risk.

Expectancy-Disconfirmation Paradigm (EDP)

The Expectancy-Disconfirmation Paradigm (EDP) is the most extensively utilised paradigm for determining consumer satisfaction and dissatisfaction with service (Khairawati, 2020; Mustaffa et al., 2019). EDP is used to assess customer satisfaction and then compared to a baseline of expectations and perceptions of service indicators. Customers' perceptions are a subjective assessment of the actual service experience, whereas customer expectations are viewed as service demand.

The Extended Valence Framework

The paper's foundation is built on this paradigm. In behavioural research, the valence framework is a well-supported economic and psychological paradigm (Ozturk et al., 2017). Before making a purchase, customers should consider the perceived risk and reward. Customers' perceptions of benefit and risk are crucial factors when selecting a product or service (Gong et al., 2019). Because it incorporates both negative and positive features simultaneously in the decision-making process, the valence framework is beneficial in analysing individual behaviour (Gong et al., 2019). By including trust in the original valence framework, a new viewpoint on values emerged (Ozturk et al., 2017). The extended valence framework is the theoretical framework that adds perceived danger to the SERVQUAL model in this research. The perceived risk in our study is the COVID 19 pandemic as a newly imposed global problem on the healthcare sector worldwide, similar to the previous study by Gong et al. (2019), where perceived risk was visible in the utilisation of online health consultation services.

Based on the result of the theoretical framework and the review of literature in this paper, the proposed conceptual framework is shown in Figure 2.

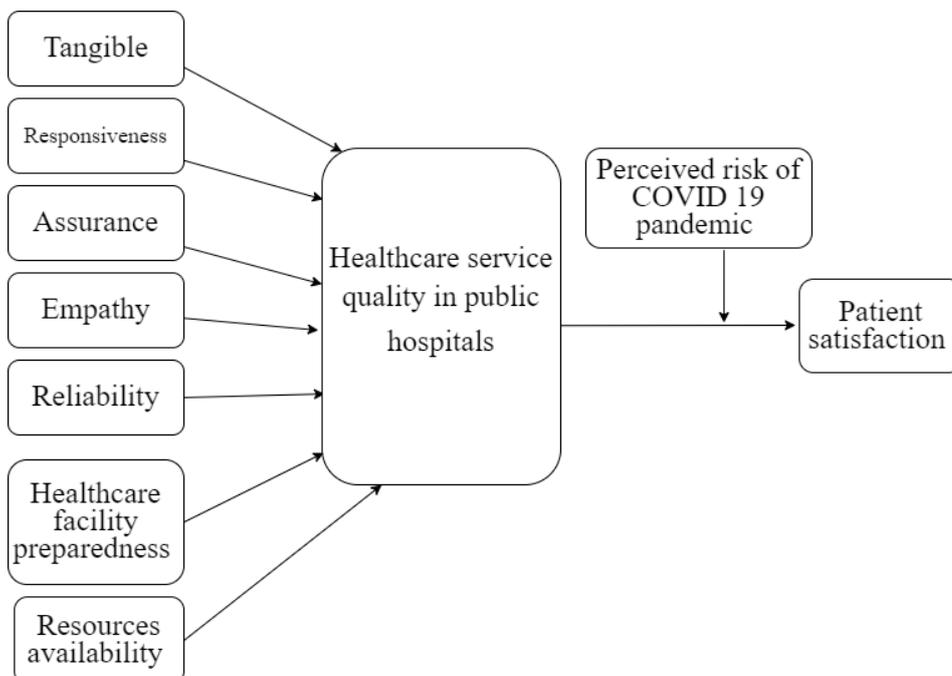


Figure 2 Conceptual framework for healthcare service quality during COVID 19 pandemic

SERVQUAL in the context of healthcare

The SERVQUAL model contains five dimensions: tangibility, empathy, assurance, reliability, and responsiveness. These characteristics are frequently investigated in relation to patients' perceptions of healthcare services.

In Syria, AlOmari (2020) presents a project that aims to evaluate healthcare services from the perspective of patients in five private hospitals in Damascus. Studying the gap between patient expectations and perceptions of healthcare service quality was the focus of the five-dimensional-SERVQUAL model. Using SERVQUAL as a benchmark for evaluating healthcare service quality in Syria, the research found it to be both accurate and reliable. In Jordan, Al-Mhasnah et al. (2018) used the SERVQUAL model to evaluate the influence of service quality on patient satisfaction in Jordanian hospitals. 384 questionnaires were sent to patients hospitalised to Jordan's Al Hussein Military Hospital, and the data was used in the study. Structured Equation Modelling (SEM) is used to evaluate the impact of the SERVQUAL components on customer satisfaction, namely tangible, dependable and assurance and empathy. According to the findings, quality-of-service factors affected patient satisfaction. Evaluation of hospital medical services using the SERVQUAL model proved to be a useful tool (Al-Mhasnah et al., 2018; AlOmari, 2020).

Iran is the Middle East's second-largest country, and it is also the one that has employed the SERVQUAL model to evaluate its healthcare services (Dopeykar et al., 2018; Jebraeily et al., 2019; Qolipour et al., 2018; Teshnizi et al., 2018). According to Teshnizi et al. (2018), there is a negative gap between patients' expectations and perceptions in Iranian healthcare systems. Qolipour et al. (2018) investigated the quality of services in both private and government hospitals in Iran as perceived by 250 Iraqi medical tourists in the context of medical tourism. The SERVQUAL medical tourism questionnaire was used in the research (MTSQ). This questionnaire has eight main dimensions: Tangibility, Empathy, Assurance, Reliability, and Responsiveness (the traditional SERVQUAL five dimensions), Exchange and travel facilities, technical and infrastructure facilities, and safety and security relevant to medical tourism. The study's findings revealed a negative disparity in all service quality metrics in the hospitals studied. As a result, the hospital's service quality has improved, making it more appealing to overseas patients (Qolipour et al., 2018). Dopeykar et al. (2018) used SERVQUAL to assess the service quality gap between patients' perceptions and expectations in five categories at a military Specialized Dental Clinic in Iran. A cross-sectional, quantitative questionnaire was employed in the investigation of 385 patients. The results demonstrated that the quality of services provided to patients fell far short of their expectations, with quality gaps statistically significant across all categories studied (Dopeykar et al., 2018). The SERVQUAL model measures healthcare service quality that policymakers can use to bridge the gap between patient expectations and perceptions of service (Dopeykar et al., 2018; Jebraeily et al., 2019; Qolipour et al., 2018; Teshnizi et al., 2018).

Using the SERVQUAL gap model to measure service quality (Ali et al., 2018). The SERVQUAL model investigated healthcare quality in diverse situations in Asian countries such as India, Nepal, Bangladesh, China, and Malaysia. Ali et al. (2018) conducted research in India to compare and contrast the level of patient expectations of healthcare services and their perceived performance. To acquire insight into the specific service qualities and quality of hospital services required to meet the demands of Indian patients, Ali et al. (2018) used just 210 exit interviews from private hospitals in Delhi and North Carolina. The patients gave satisfactory ratings to the tangibility, empathy, assurance, and responsiveness criteria (Ali et al., 2018). One of the study's flaws is that the patients' perceptions and experiences of hospital service quality should have been compared before and after the interviews. Chalise et al. (2018) utilised the SERVQUAL methodology to investigate patient satisfaction with nursing treatment on 115 patients in two larger tertiary hospitals in Kathmandu Valley. According to Chalise et al. (2018), hospitals in Nepal need to enhance tangible aspects and nurses' communication skills to improve overall satisfaction levels. In a larger sample size of 400 patients, Azmi et al. (2017) investigate patient satisfaction with nursing and health care services in Bangladesh, finding that all dimensions of the SERVQUAL model influence patient satisfaction. According to Azmi et al. (2017), other variables should be included: emergency patients, lab-report accuracy, timely and appointment-based patient observation, hygienic atmosphere, and prompt report delivery, among others.

The doctor-patient connection has long been a contentious issue in Chinese society. By reducing the possibility of doctor-patient clashes, hospitals have been attempting to improve the quality of their medical services. Fan et al. (2017) wanted to determine the difference between patient expectations and service quality perceptions so that reference data could be utilised to design methods to improve health care quality. A study of 1,303 patients in 27 hospitals across 15 provinces was used (Fan et al., 2017). (Municipalities directly under the central government). Patients' expectations and perceived service quality were compared using paired t-tests, and binary logistic regression analysis was utilised to see if there were any significant differences. Fan et al. (2017) study adds an economic factor to the SERVQUAL Model's five aspects. The findings demonstrated a significant difference in patients' expectations and perceptions of service quality before and after medical treatment. Furthermore, the service quality gap in each service parameter was negative. The poor service quality areas were economy, responsiveness, empathy, assurance, reliability, and tangibles. In general, we can deduce that patients' service quality expectations are lower than their perceptions of service quality. According to Fan et al. (2017), hospitals should make changes based on the present scenario and strive to improve the quality of medical services constantly.

Zun et al. (2018) used the SERVQUAL model to investigate the level of satisfaction and its related characteristics in 1 Malaysia Clinic (IMC), which opened in 2010 as the country's most recent innovation in public primary healthcare services to serve the urban population. The discrepancy in the mean SERVQUAL dimension score between expectation and perception among patients attending IMC in Malaysia's Kota Bharu district was investigated (Zun et al., 2018). The tangible component was the most important of the five SQ dimensions tested, according to Zun et al. (2018), used socioeconomic characteristics such as low education level, monthly household income less than RM3000, and frequency of three visits, all of which were found to have a strong link with high levels of satisfaction.

Zun et al. (2018) supplemented the SERVQUAL with socioeconomic data, indicating the availability of health services for low-income people in metropolitan areas. The study shows that more information about healthcare quality might be obtained by including more variables in the model (Zun et al., 2018).

Bermúdez-Hernández et al. (2021) identified the key characteristics that determine the quality of medical emergency services delivered within the health care network of one of the Health Promoting Entities in Medellín, Colombia, in the context of medical emergency services. According to the study, users' perceptions of the quality of medical emergency services are influenced by three important elements. The first is about assurance and trust, the second is about institutional infrastructure, and the third is about responsiveness and how it affects expected and experienced service. The relevance of patient follow-up in improving user views of such services is demonstrated in this last point. These factors are especially important in Latin America, where ongoing structural policies designed to intervene in political, social, and economic matters impact the operation of health systems and, as a result, the institutions that make them up as their patient-care performance. As a result, service quality diminishes, whether directly or indirectly.

In the context of public healthcare, Goula et al. (2021) conducted a cross-sectional quantitative study at five general public hospitals to evaluate patients' perceptions and expectations of the quality of health treatment in Greece (Goula et al., 2021). In this study, the SERVQUAL model and questionnaire were also used. The results revealed that patients' expectations for the quality of the services supplied were not met on all five quality dimensions, showing a negative gap between patients' expectations and perceptions.

Andrade et al. (2019) used the SERVQUAL technique and questionnaire to compare the expectations and perceptions of senior patients in Primary Health Care in Brazil. In SERVQUAL, negative gaps between expectations and perceptions were discovered in all five domains of service quality.

The SERVQUAL model provides significant information to policymakers and senior hospital management to better understand patient-centred care and improve the healthcare system in Syria, which is an example of a developing country with healthcare issues, according to a review of its use in healthcare. (AlOmari, 2020). As indicated by the majority of the research examined by Goula et al., (2021), one of the significant problems with the perceived quality of healthcare services is that the patient's impression is always stronger than the expectation (Goula et al., 2021). According to the authors, hospital administration and healthcare workers should be engaged in patient expectations (Goula et al., 2021). Then they should figure out how to meet them. Open communication with patients, personalised care, responsiveness to their requirements, polite behaviour, a trustworthy atmosphere throughout the hospital, and superior physical facilities are all important factors that influence the patient's judgement of quality.

Healthcare quality during COVID 19 pandemic:

Covid 19 imposed various barriers on the healthcare business as a result of the global crisis. Because they were the frontline warriors in this pandemic, hospital systems worldwide received much help. The healthcare sector has gotten special attention to assist the country in weathering this disaster. In the literature, additional context began to emerge in the context of quality, such as sanitation service quality in Bangladeshi slums (Shermin & Rahaman, 2021).

Shermin & Rahaman (2021) investigated the quality of sanitation service in urban slums using the SERVQUAL model, which has become a major challenge to solve as a result of COVID-19. The lack of latrine capabilities and services from participating authorities demonstrated the failure of Tangibility, Reliability, and Responsiveness criteria. The condition's incompatibility was established by analysing the WHO's varied sanitation management plans for COVID-19.

The COVID-19 pandemic is a pressing concern in terms of healthcare quality, hence a conceptual vision of healthcare facilities and quality delivery was presented (Issai & Jarmajo, 2021). There are a number of issues that have a direct impact on service seekers, such as a lack of back-up energy sources and their maintenance, a lack of healthcare personnel to manage patients, insufficient medical resources, personal protective equipment (PPE), ventilators, and inadequate treatment centres. The SERVQUAL model, according to Issai & Jarmajo (2021), is a powerful tool for improving service quality at Nigeria's COVID-19 Isolation Center and a useful guidance for healthcare policymakers. The study's conceptual nature, based on a comprehensive assessment of the link between healthcare facilities and quality of service, is one of its major flaws. A variety of media outlets, journals, newspapers, and government agencies were used to gather secondary data for this piece (Issai & Jarmajo, 2021).

Orzeł & Horodecka (2021) from Poland employs the SERVQUAL technique to conduct an analytical approach that allows us to study and assess elements related to the quality assurance of health care workers' personal protective equipment and its degree of quality assurance. Questionnaires for medical and healthcare professionals were developed using the SERVQUAL method, according to the study. Health care workers' personal protective equipment was evaluated for factors and quality assurance using research findings, which were then utilised to build a questionnaire (PPE). PPE supply to healthcare workers in Polish medical facilities is examined using the GAP method. Only the SERVQUAL approach was used to assess the quality of personal protective equipment (PPE) used by healthcare professionals and to produce a questionnaire (survey) for use in future studies and statistical analysis which is a major shortcoming of the research study. According to Orzeł & Horodecka (2021), a SERVQUAL methodology and based questionnaire are beneficial in increasing knowledge and improving the quality of health care workers' personal protective equipment.

Iran is one of the countries that has adopted the SERVQUAL method for assessing patient perceptions, expectations, and satisfaction with treatment (Dopeykar et al., 2018; Jebraeily et al., 2019; Qolipour et al., 2018; Teshnizi et al., 2018). Khezeli et al. (2021) used SERVQUAL to examine the gap in the quality of hospital services from the perspective of patients with coronavirus admitted to Farhikhtegan Hospital in COVID 19 and healthcare quality. Given the patients' isolation, physical, and even psychological status in admission, the study selected a limited sample size of 100 patients admitted to the corona ward. The study's findings demonstrated high perceived responsiveness and a badly perceived quality intangibility compared to patient expectation, with the highest dependability and the lowest tangibility (Khezeli et al., 2021). According to the model, the service quality gap is positive for responsiveness and empathy but negative for tangibility, reliability, and assurance. This reflects the current situation of the tangibility component in a moment of crisis. Khezeli et al. (2021) emphasised the importance of continuous planning and evaluation of service quality to improve service quality and close service gaps.

Risk perception resources availability and preparedness during COVID 19 pandemic

Despite the fear, dread, and anxiety that the globe felt during the COVID 19 pandemic and continues to feel, little research has been done on COVID perceived risk in the context of healthcare and quality. Healthcare professionals, perceived risk, anxiety, and stress (Yıldırım et al., 2020), perceived risk in comparison to non-healthcare workers (Abid et al., 2020), community health care facilities and intentions to use these facilities, and patient selection of the healthcare facility were all investigated during COVID 19. (Sang & Cheng, 2020). Because the healthcare system was coping with other difficulties like resource management, a scarcity of resources, and the danger of infection among medical and non-medical employees, none of the studies looked at the quality of treatment during COVID 19. During the COVID 19 outbreak, the healthcare industry's top focus was to survive and save lives, therefore patient perceptions of the quality of care provided received less attention.

Because they were on the frontlines of the coronavirus (COVID-19) pandemic, healthcare professionals were more susceptible to developing symptoms of mental health disorders (Yıldırım et al., 2020). Healthcare workers are at risk of contracting COVID-19 or spreading it to their families. As a result, they are at a higher risk of psychological distress, which could jeopardise patient care.

Yıldırım et al. (2020) studied the mediating effects of resilience and coronavirus fear in the association between perceived risk and mental health problems among COVID-19-positive patients treated by healthcare personnel such as doctors and nurses. The study enlisted the participation of 204 healthcare experts. Resilience was a negative predictor of depression, anxiety, and stress, while perceived risk and coronavirus fear were positive predictors. Fear of the Coronavirus moderated the link between perceived risk and resistance, depression, anxiety, and stress. The deleterious effects of coronavirus fear on depression, anxiety, and stress were also reduced thanks to resilience. Yıldırım et al. (2020) emphasised the role of resilience and fear as a core mechanism that explains the link between perceived risk and mental health problems among health personnel directly caring for COVID-19 patients (Yıldırım et al., 2020).

Abid et al. (2020) explore risk perceptions and psychological distress among HCWs and non-healthcare workers (NHCWs) in Pakistan using an online self-administered questionnaire. The two groups of respondents were HCWs (who had completed or were planning to complete education in medicine or allied professions) and NHCWs. Front-line (direct patient care) and back-end (administrative) HCWs were separated. A total of 1406 people took part in the study (507 HCWs and 899 NHCWs). As a result of the pandemic, frontline HCWs, healthcare students, young people, females, and those with lower incomes have been at a higher risk of psychological distress. According to Abid et al. (2020), government interventions should focus on maintaining the mental health of frontline HCWs and increasing their satisfaction with developing the healthcare delivery system. Meanwhile, Sang & Cheng (2020), indicated that community-based health care professionals are underutilised, resulting in medical resource waste. The study looked at the impact of perceived risk and patient anxiety on intentions to use community health clinics because these two factors are so closely linked to decision making. In the study, perceived risk was an independent variable determining the intention to seek help from a community-based provider. According to the data, these providers' perceived risk was negatively associated with such an objective. The quality of care offered by the chosen community clinics was not considered in the study.

CONCLUSION

The SERVQUAL model that assesses healthcare service quality does not consider other factors that affect service perception, especially during crisis times such as COVID 19, which necessitates extraordinary preparation and support from the whole healthcare sector. Hence, in the context of this paper, a proposed modified SERVQUAL model was used in assessing the service quality and the perceived risk Of COVID 19, which is supported by the extended valence framework theory.

The healthcare industry's objective during the COVID 19 pandemic was to survive and save lives; therefore, patient impressions of the quality of care received less attention. Certain difficulties have surfaced in relation to COVID 19, such as the healthcare facility's preparedness and resource availability, which will impact the patient's perception of healthcare service quality and, ultimately, patient happiness. The healthcare profession was coping with other difficulties like resource management, a scarcity of resources, and the risk of infection among medical and non-medical employees. The quality of treatment during COVID 19 was frequently overlooked. The proposed conceptual framework in the paper offers a method that allows assessment of the healthcare quality and patient satisfaction during COVID 19. It is recommended to evaluate the model in future studies. It is also recommended to apply it in a country-based context to assess the healthcare sector quality in that country.

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