

**ASSESSMENT OF INPATIENT SATISFACTION USING THE SERVQUAL
MODEL: A STUDY AT MAX SUPER SPECIALITY HOSPITAL, DEHRADUN**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

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Under the Supervision and Guidance of

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2025

CERTIFICATE OF ACHIEVEMENT



Max Institute of Medical Education

Certifies that

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Place: Dehradun

Date: 12th June 2025



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Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation titled “**Assessment of Inpatient Satisfaction Using the SERVQUAL Model: A Study at Max Super Speciality Hospital, Dehradun**” is a record of the research work undertaken by Aishwarya Pundir in partial fulfilment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.



Faculty Guide

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Date 12/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation titled “Assessment of Inpatient Satisfaction Using the SERVQUAL Model: A Study at Max Super Speciality Hospital, Dehradun” is the Bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.


(Signature)

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Date 12th June 2025

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LIST OF ABBREVIATIONS

Abbreviation	Full Form
T	Tangibility
RL	Reliability
R	Responsiveness
A	Assurance
E	Empathy
SERVQUAL	Service Quality
IPD	In-Patient Department
OPD	Out-Patient Department
TAT	Turnaround Time
GDA	General Duty Assistant
QOL	Quality of Life
IV	Intravenous
ICU	Intensive Care Unit
ENT	Ear, Nose and Throat
HCP	Healthcare Professional
CSR	Corporate Social Responsibility
PPE	Personal Protective Equipment

ABSTRACT

Title:

Assessment of Inpatient Satisfaction Using the SERVQUAL Model: A Study at Max Super Speciality Hospital, Dehradun

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Keywords: Patient Satisfaction, SERVQUAL, Healthcare Quality, Inpatient Services, Max Hospital

Background:

Measuring patient satisfaction is vital in evaluating healthcare service quality, particularly in tertiary care hospitals. The SERVQUAL model, based on the gap between expectations and perceptions across five service dimensions, offers a structured method to assess patient experiences.

Objective:

To evaluate the level of satisfaction among inpatients at Max Super Speciality Hospital using the SERVQUAL model and identify key service dimensions that require improvement.

Methodology:

A cross-sectional study was conducted with 500 in-patients from various specialties at Max Hospital. Data were collected through a structured SERVQUAL questionnaire covering five dimensions: Tangibility, Reliability, Responsiveness, Assurance, and Empathy. Patients rated both their expectations and perceptions on a 5-point Likert scale. Gap scores were calculated and analysed to identify service quality discrepancies.

Results/Findings:

The analysis revealed negative gap scores across all five SERVQUAL dimensions, indicating that patient expectations exceeded their actual experiences. The most significant service gaps were observed in **Responsiveness** (−0.43) and **Reliability** (−0.21), highlighting delays in staff response and inconsistencies in service delivery. Despite this, the overall average perception score was **4.28**, slightly above the 80% satisfaction threshold, suggesting general satisfaction

among patients. Areas such as **Empathy** and **Tangibility** performed relatively better but still showed room for improvement.

Conclusions:

The study highlights the need for targeted service quality improvements, particularly in responsiveness and empathetic communication. Regular monitoring of patient expectations and perceptions can guide hospital administration in refining inpatient care strategies and enhancing overall patient satisfaction.

1. INTRODUCTION

In a hospital setting, the goodwill of the institution is significantly influenced by the interaction between patients and healthcare providers, which ultimately impacts patient satisfaction. For an ideal hospital stay, the overall experience of the patient is crucial — including communication with doctors and nurses, responsiveness of hospital staff, pain management, cleanliness, hospital environment, and instructions throughout the journey from admission to discharge. These interactions allow patients to assess and evaluate the quality of services received, while providing the hospital with insights into how their services are perceived and where there may be room for improvement.

Hospitals that provide services aligned with patient expectations are more likely to be viewed as reliable and high-quality healthcare providers. Conversely, hospitals with poor patient satisfaction often suffer from gaps in their processes, staff training, and service delivery quality. From ensuring effective medical practices to addressing the daily needs of patients, hospitals must focus on every detail to ensure patient satisfaction.

Patient satisfaction is especially critical in healthcare, perhaps more so than in any other service sector. Patients seek care when they are vulnerable, and their expectations go beyond clinical outcomes. They value timely communication, compassionate care, and a responsive environment. For in-patient departments in particular, the journey starts with admission and includes the comfort of the ward, staff attentiveness, and how promptly their needs are addressed. Any delays in bed allocation, lack of timely communication, or interaction with overburdened staff can lead to dissatisfaction.

Thus, delivering optimal patient service is essential in setting benchmarks for quality care, improving hospital reputation, and building patient loyalty. A satisfied patient is more likely to recommend the hospital to others, enhancing the hospital's image and patient inflow. Unfortunately, many hospitals overlook this key factor. By identifying critical touchpoints and crafting a comprehensive service improvement plan, hospitals can set themselves apart through excellent patient experience.

1.1 STATEMENT OF PROBLEM

Max Super Speciality Hospital, Dehradun is a corporate tertiary care multispecialty hospital providing a wide spectrum of advanced medical services, including cardiology, orthopaedics, neurology, oncology, maternal and childcare, among others. As part of its ongoing efforts to

deliver patient-centric care, the hospital has consistently invested in infrastructure development, technological advancements, and staff training to enhance patient experience — particularly in the in-patient department (IPD).

However, recent internal reviews have revealed that the in-patient satisfaction index lags the out-patient satisfaction levels, despite improvements in room facilities, support services, and patient care protocols. These include provision of suite and deluxe rooms with amenities such as television, refrigerator, and improved food and dietary services. Yet, satisfaction scores have not reflected a proportional increase in the IPD domain.

This situation necessitates an assessment of how patients perceive the quality of services delivered in the in-patient department, with the goal of identifying and addressing service gaps. As patients today are more informed and discerning, their expectations and perceptions have evolved — challenging hospitals to continually monitor and manage service quality effectively.

This project employs the **SERVQUAL model**, a widely accepted framework for measuring service quality across five dimensions: **Tangibles**, **Reliability**, **Responsiveness**, **Assurance**, and **Empathy**. The SERVQUAL tool asks patients to rate both their **expectations** and **perceptions** across 22 service indicators. The difference between the two scores — known as the **Gap Score** — offers actionable insights into specific service areas that require enhancement.

Given the hospital's status as a leading multispecialty centre in Uttarakhand, leveraging such a model becomes essential for strengthening patient satisfaction and quality assurance. The SERVQUAL model is particularly suitable for healthcare due to its structured approach in measuring the intangible aspects of service delivery. It not only helps identify what patients value the most but also allows the hospital to reallocate resources more effectively toward areas that impact satisfaction.

The five dimensions of SERVQUAL are explained as follows:

- **Tangibles:** Physical facilities, equipment, cleanliness, and appearance of personnel.
- **Reliability:** The ability to perform the promised service dependably and accurately.
- **Responsiveness:** The willingness to help patients and provide prompt service.
- **Assurance:** The competence and courtesy of staff, and their ability to instil trust.
- **Empathy:** The provision of caring, individualized attention to patients.

Objective of the Study

The objective of this study is to assess **patient satisfaction in the in-patient department of Max Hospital, Dehradun**, using the SERVQUAL model. The findings will assist stakeholders in identifying critical service quality gaps and designing improvement strategies that enhance patient experience and trust. Achieving high levels of satisfaction will not only strengthen the hospital's goodwill but also improve retention and referral rates, contributing to long-term sustainability.

2. REVIEW OF LITERATURE

Patient satisfaction has emerged as a critical quality indicator in healthcare service delivery, influencing not only clinical outcomes but also hospital reputation, patient loyalty, and operational efficiency. In a hospital setting, patient satisfaction reflects how well a healthcare institution meets or exceeds patients' expectations across multiple touchpoints during their care journey.

According to Woodside et al. (1989), as cited in Peprah (2014), understanding patients' satisfaction is fundamental to delivering responsive and quality healthcare. He emphasized that healthcare providers must identify and address patient priorities across various dimensions of service quality. Several studies have highlighted that patient satisfaction directly influences patient compliance with treatment protocols, the healing process, and retention (Calnan, 1988; Roter et al., 1987). The level of satisfaction also affects whether patients return to or recommend a hospital (Jackson & Kroenke, 1997).

Hendriks et al. (2002) noted a systemic shift in healthcare from a provider-centric model to a patient-centric approach, where patient views are now considered essential for monitoring, managing, and improving service delivery. This cultural transformation has led to the growing relevance of patient experience surveys and satisfaction assessments.

Parasuraman, Zeithaml, and Berry (1985) created the **SERVQUAL model**, which is one of the most well-known instruments for evaluating service quality in the healthcare industry. According to this paradigm, service quality is the difference between **what patients expect and what they perceive** in five key areas: **tangibles, responsiveness, assurance, empathy, and reliability**. When expectations and perceptions diverge significantly, there is a service deficit and a clear path for quality improvement (Zeithaml et al., 1990).

Sewell (1977) emphasized the importance of capturing the patient's perspective to assess service quality and identify improvement areas. Similarly, Oliver (1981) defined satisfaction as the patient's emotional response based on a cognitive evaluation of the care received versus expected. Kotler (2003) further expanded this by framing satisfaction as the emotional outcome resulting from the comparison between perceived service delivery and patient expectations.

Research also identifies specific hospital service elements that influence satisfaction. According to Peprah (2014), critical factors include:

- The attitude and behaviour of doctors and nurses,
- The promptness of care delivery,
- The clarity and accuracy of information communicated to patients,
- Cleanliness of the hospital environment,
- Availability of infrastructure and medical equipment,
- Comfort and amenities provided in the inpatient setting.

A study conducted in a tertiary care hospital in Haryana (2018) involving 450 in-patients and out-patients revealed that **28.1%** of respondents expressed dissatisfaction with basic amenities. This underscores the importance of not just clinical care but also physical environment and support services in shaping overall patient satisfaction.

The **SERVQUAL model** has been validated across various healthcare settings and has demonstrated reliability in diagnosing service delivery gaps. It enables administrators to evaluate both structural and interpersonal aspects of service delivery, thereby guiding strategic resource allocation, staff training, and service redesign to enhance patient experience (Sixma et al., 1998).

2.1 SERVQUAL: A TOOL FOR MEASURING SERVICE QUALITY

To identify areas of performance improvement and ensure that patients' expectations are consistently met, both **expectation** and **perception** scores must be evaluated in a healthcare service setting (Accounts Commission of Scotland, 1999; Parasuraman et al., 1985, 1988). Hart (1996) emphasized that service quality dimensions offer a structured framework not only for designing measurement tools but also for prioritizing corrective actions based on results.

A commonly used tool for evaluating the quality of services is the **SERVQUAL model**, which was created by Parasuraman, Zeithaml, and Berry in 1988. It is based on the idea that the quality of a service is determined by the **discrepancy between what patients believe they received and what they expected**. Using a 5-point Likert scale that goes from "Strongly Disagree" (1) to "Strongly Agree" (5), SERVQUAL, which initially consisted of 22 paired statements, addresses the five main aspects of service quality: **tangibility, reliability, responsiveness, assurance, and empathy**.

SERVQUAL Dimensions and Their Relevance in Hospital Settings:

- **Tangibility:** Refers to physical facilities, medical equipment, hospital cleanliness, and the appearance of personnel. In a hospital like Max Dehradun, with its state-of-the-art infrastructure, this dimension directly affects patient perceptions. Bitner (1992) and Berry & Clark (1992) demonstrated that physical environment significantly shapes satisfaction levels.
- **Reliability:** Defined as the ability to deliver accurate, dependable services. Garvin (1987) found reliability to be a dominant service evaluation factor, and Parasuraman (1988) stated it as the most crucial dimension from the patient's perspective. In a multispecialty setup, ensuring consistency in care delivery is essential for building trust.
- **Responsiveness:** The willingness of staff to help patients and provide prompt service. In a high-volume facility like Max, where waiting time and response rate affect perceptions, this dimension becomes critical. Parasuraman (1998) highlighted that delays or staff unavailability directly impact satisfaction.
- **Assurance:** The staff's ability to convey trust and confidence through their expertise, courteousness, and professionalism. This is vital in hospitals like Max Dehradun, where patients seek assurance of clinical safety and competence.
- **Empathy:** Denotes personalized care, compassion, and attention to individual needs. Parasuraman et al. (1998) identified empathy as key in building patient-provider relationships and ensuring patient loyalty.

Each SERVQUAL item is asked twice — once to measure **expectation** and once to measure **perception** — and the **gap score** is derived by subtracting expectation from perception. Negative scores indicate that patient expectations exceeded perceived service, signifying

potential areas for improvement. Positive scores suggest performance has met or exceeded expectations.

By aggregating gap scores across dimensions, the hospital can pinpoint **which service aspects fall short**, thus enabling **data-driven improvements** in patient care delivery.

Applications of SERVQUAL in Healthcare

Numerous healthcare studies have made substantial use of the SERVQUAL paradigm:

- **Carman (1990)** in acute care hospitals
- **McAlexander et al. (1994)** in independent dental practices
- **Fusilier & Simpson (1995)** in AIDS service organizations
- **Anderson (1994)** in university health systems
- **Bowers et al. (1994)** to assess overall patient satisfaction

According to Buttle (1994), the SERVQUAL model:

- Is **reliable and valid** across various service sectors
- Offers a **standardized structure** for quality assessments
- Is **concise and easy to implement**
- Enables **comparative analysis** across departments and timeframes

While the original SERVQUAL model includes five dimensions, several researchers have proposed **modified versions**. For example:

- **Zeithaml et al. (1998)** expanded it to include 10 dimensions including access, communication, and competence.
- Accessibility and affordability were added by **Lim and Tang (2000)**.
- **Tucker and Adams (2001)** integrated outcomes and care.
- In hospital settings, **Camilleri & O'Callaghan (1998)** recommended incorporating price, catering, and customisation.

Despite these variations, the original **five-dimensional framework remains widely adopted** due to its clarity, adaptability, and empirical support in healthcare institutions like Max Hospital.

SERVQUAL's Four Gap Model in Healthcare Context

The SERVQUAL model identifies four critical gaps that influence patient perception of quality of service.

- 1. Gap 1: Understanding Gap**

Disparity between what patients expect and how management views their expectations.

- 2. Gap 2: Design Gap**

Discrepancy between management's expectations and the real requirements or standards for service excellence.

- 3. Gap 3: Delivery Gap**

The discrepancy between the staff's actual service delivery and the established service standards.

- 4. Gap 4: Communication Gap**

Discrepancy between what patients are told or promised and how services are actually provided.

The **fifth and final gap** — the **expectation-perception gap** — emerges from these internal gaps and directly reflects the **service quality from the patient's point of view**.

In a tertiary care setting like Max Hospital, Dehradun, where many services, specialties, and patient interactions occur daily, **SERVQUAL serves as an essential tool** to:

- Benchmark service performance,
- Understand changing patient expectations,
- Improve operational workflows, and
- Design patient-centred strategies for quality improvement.

Given the complexity and scale of healthcare delivery in Max Hospital, the SERVQUAL model offers a **scientifically validated, structured, and actionable framework** to assess and enhance in-patient service quality. By focusing on tangible, measurable dimensions and

leveraging gap scores, the hospital can **prioritize interventions** that truly align with patient needs and expectations — ultimately driving higher satisfaction, better outcomes, and stronger trust in the healthcare system.

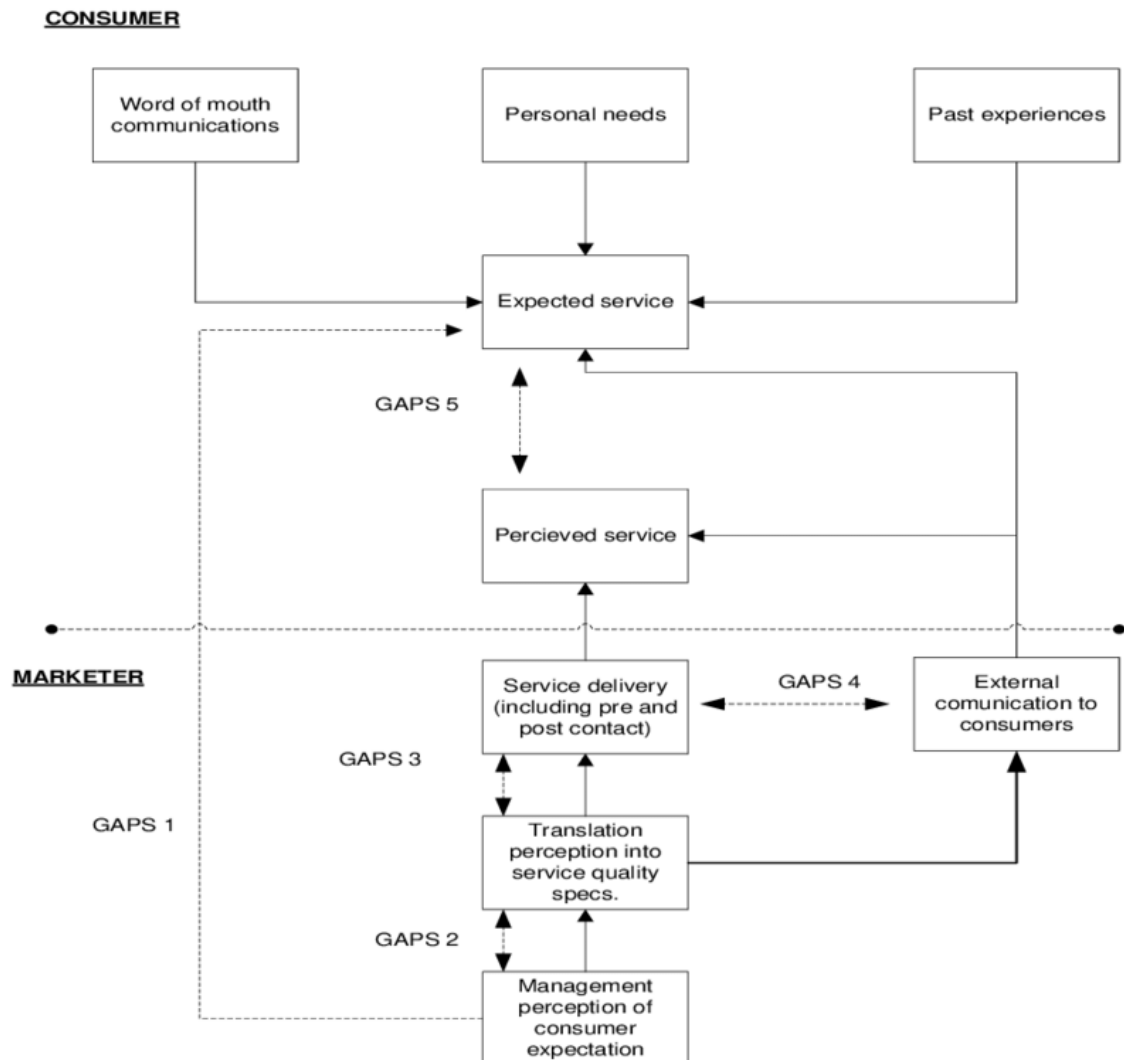


Figure 1: CONCEPTUAL MODEL OF SERVQUAL Resource; Parasuraman 1985

This paradigm states that the discrepancy between the customers' expectations and perceptions determines the quality of the services.

$$\text{Service Quality} = \text{Perception of service delivered} - \text{Expectations from service delivery}$$

3. METHODOLOGY

To assess in-patient satisfaction at Max Super Speciality Hospital, Dehradun, the **SERVQUAL model** was employed. This validated tool is widely used to evaluate the gap between patient **expectations** and **perceptions** across five key dimensions of service quality: **Tangibility**, **Reliability**, **Responsiveness**, **Assurance**, and **Empathy**.

Two structured questionnaires were developed:

- One to capture the **expectations** of patients upon admission
- One to record their **perceptions** at the time of discharge

Both questionnaires included **26 identical statements** distributed across the five SERVQUAL dimensions. A **five-point Likert scale**, coded as follows, was used to rate each item:

- 1 = **Strongly Disagree**
- 2 = **Disagree**
- 3 = **Neutral**
- 4 = **Agree**
- 5 = **Strongly Agree**

Each statement was answered twice — once to reflect what patients **expected** from the hospital, and once to reflect their **actual experience**. The following formula was used to get each item's **Gap Score**:

$$\text{Gap Score} = \text{Perception} - \text{Expectation}$$

Interpretation of the score:

- **Negative gap** → Perceived service is below expectations (area for improvement)
- **Positive gap** → Perceived service exceeds expectations
- **Zero gap** → Expectations are exactly met

The 26 statements were grouped under the SERVQUAL dimensions as follows:

- **Tangibility (5 items)**: Cleanliness, equipment condition, hygiene protocols, amenities, and physical infrastructure
- **Reliability (6 items)**: Accurate procedures, consistent results, protocol adherence, and availability of medical supplies

- **Responsiveness (6 items):** Timeliness of care, staff availability, medication and test turnaround time, and responsiveness to queries
- **Assurance (4 items):** Confidence, courtesy, communication, and billing transparency
- **Empathy (5 items):** Staff empathy, personalized support, elderly care, emotional support, and reception staff behaviour

This structure enabled a comprehensive evaluation of both clinical and non-clinical aspects of patient experience during in-patient care.

3.1 MODE OF DATA COLLECTION

The “expectation” set of questions was given to the patient or attendant within the first 24 hours of their stay at Max Super Speciality Hospital, Dehradun, to understand their expectations regarding various service quality dimensions. The “perception” set of questions was administered on the day of discharge to capture their actual experience during the hospital stay. In the case of patients below 18 years of age, responses were recorded with the help of a parent or guardian. After collecting the data, all questionnaires were compiled for tabulation and analysis. Over the course of two months, from **March 17, 2025, to May 20, 2025**, the survey was carried out. The sample included patients admitted to general wards and private rooms across multiple departments such as General Medicine, Cardiology, Orthopaedics, Neurology, Gastroenterology, Pulmonology, Obstetrics & Gynaecology, Oncology, and other specialties like ENT and Urology. Patients admitted to the ICU, psychiatric units, or isolation wards (e.g., for infectious diseases) were excluded from the study due to limited interaction with general services.

The demographic profile of the patients showed that **7.89% were below 18 years, 10.64% were between 18–30 years, 22.87% belonged to the 31–50 years age group, 34.57% were in the 51–70 years bracket, and 23.94% were above 70 years.** The length of hospital stays varied, with **23.08% staying for less than 2 days, 53.85% staying between 2 to 4 days, and another 23.08% staying for more than 4 days.** As for the clinical reasons for admission, **22.17% of patients were admitted under General Medicine, followed by 17.25% in Orthopaedics, 12.32% in Gastroenterology/Hepatology, 9.85% each in Neurology/Neurosurgery and Pulmonology, 8.87% in Cardiology, 6.41% in Obstetrics & Gynaecology, 5.91% in Oncology, and 7.39% in other departments such as ENT and**

Urology. These distributions ensured the representation of a wide variety of in-patient experiences for the SERVQUAL analysis.

3.2 OBJECTIVE OF THE STUDY

The study's goal is to calculate the gap score between the expected and perceived level of services delivered to the patient and to delineate the areas where there is a scope of improvement in the service delivery at the In- patient department of Max Super Speciality Hospital, Dehradun which would result in increased perception on the part of the patients.

3.3 SERVQUAL QUESTIONNAIRE INCLUDED IN THE STUDY

CODE	EXPECTATIONS (E)	PERCEPTIONS (P)			GAP SCORE= P – E
	This survey deals with your (patient’s) opinions of IPD services in a hospital.	The following statements relate to how you perceived the services received at the IPD			
1. TANGIBILITY (Physical Facilities, Equipment, and Appearance of Personnel)					
T1	Hospital room and washroom are cleaned regularly and properly maintained.		Hospital room and washroom were cleaned regularly and properly maintained during your stay.		
T2	All medical equipment (monitors, IV pumps, diagnostic machines) should be in working condition at all times.		All medical equipment (monitors, IV pumps, diagnostic machines) were in working condition during your stay.		
T3	Meals served should be hygienic, nutritious, and delivered on time.		Meals served were hygienic, nutritious, and delivered on time.		
T4	Hospital staff should follow proper hygiene protocols (e.g., wearing gloves and masks when required).		Hospital staff followed proper hygiene protocols (e.g., wearing gloves and masks when required).		
T5	Bed linens and other in-room amenities (towels, toiletries) should be changed or replaced regularly.		Bed linens and other in-room amenities (towels, toiletries) were changed or replaced regularly.		
AVERAGE TANGIBILITY SERVQUAL SCORE					
2. RELIABILITY (Ability to Perform the Promised Service Dependably and Accurately)					
RL1	Treatment plans and surgical procedures should be explained to you in detail before they are performed.		Your treatment plans and surgical procedures were explained to you in detail before they were performed.		

RL2	You should be provided with the correct medications and clear dosage instructions.		You were provided with the correct medications and clear dosage instructions.		
RL3	The hospital should follow standardized protocols for your treatment and safety.		You felt that the hospital followed standardized protocols for your treatment and safety.		
RL4	All necessary medical supplies (syringes, IV fluids, gloves) should be available when required.		All necessary medical supplies (syringes, IV fluids, gloves) were available when required.		
RL5	Your discharge summary and reports should be provided accurately and without errors.		Your discharge summary and reports were provided accurately and without errors.		
RL6	Test results should be accurate and consistent, with no discrepancies.		You received accurate and consistent test results without discrepancies.		
AVERAGE RELIABILITY SERVQUAL SCORE					
3. RESPONSIVENESS (Willingness to Help and Provide Prompt Service)					
R1	When you press the nurse call button, assistance should arrive within a reasonable time.		When you pressed the nurse call button, you received assistance within a reasonable time.		
R2	GDA staff should be available to assist patients with basic needs in a timely manner.		GDA staff were available and assisted with basic needs in a timely manner.		
R3	Housekeeping staff should respond promptly when cleaning or sanitation is needed.		Housekeeping staff responded promptly when cleaning or sanitation was required.		
R4	Prescribed medications should be available without long waiting times.		Your prescribed medications were available without long waiting times.		
R5	Test results should be provided within the promised timeframe.		Your test results were provided within the promised timeframe.		
R6	Emergency or urgent care services should be provided without delay.		Emergency or urgent care services were provided without delay.		
AVERAGE RESPONSIVENESS SERVQUAL SCORE					
4. ASSURANCE (Knowledge, Courtesy, and Ability to Inspire Trust)					
A1	Nursing staff should handle your care with confidence and professionalism.		Nursing staff handled your care with confidence and professionalism.		

A2	You should be informed about pain management options before and after your procedure.		You were informed about pain management options before and after your procedure.		
A3	The hospital should take necessary precautions to prevent infections (e.g., sanitizing hands before procedures).		The hospital took necessary precautions to prevent infections (e.g., sanitizing hands before procedures).		
A4	Hospital bills and charges should be explained transparently, with no hidden costs.		Hospital bills and charges were explained transparently, with no hidden costs.		
AVERAGE ASSURANCE SERVQUAL SCORE					
5. EMPATHY (Caring, Individualized Attention to Patients)					
E1	Hospital representatives should listen to and address your complaints with empathy.		Hospital representatives listened to and addressed your complaints with empathy.		
E2	Hospital staff should show patience and understanding when dealing with elderly patients.		Hospital staff showed patience and understanding when dealing with elderly patients.		
E3	Staff should provide adequate support for pain relief, comfort, or emotional well-being.		Staff provided adequate support for pain relief, comfort, or emotional well-being.		
E4	Your family members should be allowed to visit and support you appropriately.		Your family members were allowed to visit and support you appropriately.		
E5	Front desk and reception staff should be courteous and helpful in guiding you.		Front desk and reception staff were courteous and helpful in guiding you.		
AVERAGE EMPATHY SERVQUAL SCORE					

SCORES
Strongly Agree=5
Agree=4
Neutral=3
Disagree=2
Strongly Disagree=1

3.4 PLAN FOR DATA ANALYSIS

3.4.1 STEPS TO OBTAIN UNWEIGHTED SERVQUAL SCORE

Step 1. Using the SERVQUAL instrument, first obtain the score for each of the ‘expected’ questions. Next, obtain a score for each of the ‘perception’ questions. Calculate the Gap Score for each of the statements (Gap Score = Perception – Expectation)

Step 2. Calculate the average Gap Score for each dimension by dividing the total by the number of statements that make up the dimension after evaluating the Gap Scores for each statement that makes up the dimension.

Step 3. Transfer the SERVQUAL instrument's average dimension SERVQUAL scores (across all five dimensions) to TABLE 1. The unweighted measure of service quality is calculated by adding together all the scores and dividing the total by five.

3.4.2 STEPS TO OBTAIN THE WEIGHTED SERVQUAL SCORE

Step 1. Determine the important weights for each of the five SERVQUAL scale dimensions.

Step 2. The average SERVQUAL score for each dimension is entered in Table 3, along with the weight of relevance for every dimension. Next, multiply each dimension's importance weight by its average score.

Step 3. To get the total weighted SERVQUAL score, add the weighted SERVQUAL scores for each dimension.

3.4.3 CALCULATIONS TO OBTAIN UNWEIGHTED SERVQUAL SCORE

Table1: CALCULATIONS TO OBTAIN UNWEIGHTED SERVQUAL SCORE

Dimension	Gap Score
Average Tangible SERVQUAL Score	
Average Reliability SERVQUAL Score	
Average Responsiveness SERVQUAL Score	
Average Assurance SERVQUAL Score	
Average Empathy SERVQUAL Score	
TOTAL	
UNWEIGHTED SERVQUAL SCORE (TOTAL / 5)	

3.4.4 SERVQUAL IMPORTANCE WEIGHTS

To assess the relative significance of different service quality dimensions in the In-Patient Department (IPD), patients or their attenders were asked to distribute a total of 100 points among five key service features, based on how important each was to them. This method helps in understanding patient priorities and expectations from the hospital services. The five

dimensions—**responsiveness, assurance, empathy, tangibility, and reliability**—were given points by each respondent so that the sum equaled 100. After calculating the average important weight for each dimension across all responses, the results are shown below.

Table 2: SERVQUAL IMPORTANCE WEIGHTS

FEATURES	POINTS
The appearance of the physical facilities, equipment, personnel, and communication materials.	
The ability to perform the promised service dependably and accurately.	
Willingness to help patients and provide prompt service.	
The knowledge and courtesy of the employees and their ability to convey trust and confidence.	
The care and individual attention the hospital provides its patient.	
TOTAL	100

TABLE 3: SERVQUAL WEIGHTED SCORES

SERVQUAL DIMENSION	SCORE FROM TABLE 1	IMPORTANCE WEIGHT FROM TABLE 2	WEIGHTED SCORE
Average Tangibility			
Average Reliability			
Average Responsiveness			
Average Empathy			
Average Assurance			
TOTAL			
WEIGHTED SERVQUAL SCORE (TOTAL / 5)			

Table 4: CONSOLIDATED TABLE FOR SERVQUAL SURVEY

Dimension	Code	Performance	Expectation	Gap Score	Average SERVQUAL Perception Score	Dimension Weight	Average Unweighted Gap Score	Weighted Gap Score
Tangibility	T1							
	T2							
	T3							
	T4							
	T5							
Reliability	R1							
	R2							
	R3							
	R4							
	R5							
	R6							
Responsiveness	R1							
	R2							
	R3							
	R4							
	R5							
	R6							
Assurance	A1							
	A2							
	A3							
	A4							
Empathy	E1							
	E2							
	E3							
	E4							
	E5							

4. RESULTS

Once the questionnaire was collected, the responses of 500 in-patients were tabulated over the period from **March 17, 2025, to May 20, 2025**. The average perception score and expectation score for the five service quality dimensions were calculated for all the respondents. For each statement, the gap score was computed using the formula: **Perception (P) – Expectation (E)**. The average gap score for each dimension was subsequently calculated across all 500 patients.

Furthermore, an average important weight was calculated for each of the five SERVQUAL dimensions: Assurance, Empathy, Responsiveness, Tangibility, and Reliability. The final weighted SERVQUAL score was derived by multiplying the importance weight of each dimension with its corresponding unweighted dimension-wise gap score.

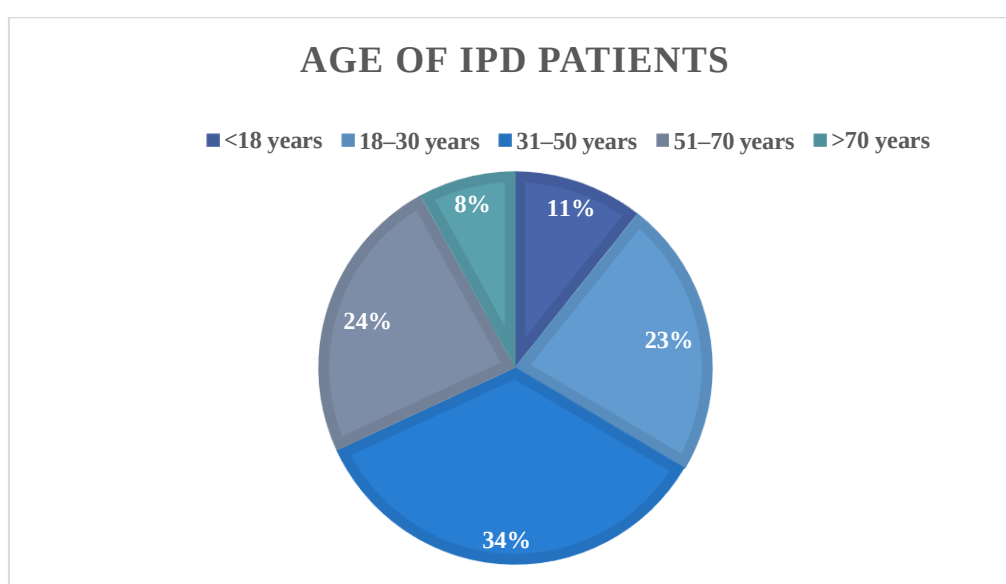
4.1 DEMOGRAPHIC DETAILS

The respondents' demographic information is as follows:

Table 5: Demographic Details – Age Group

Age Group	Percentage
<18 years	7.89%
18–30 years	10.64%
31–50 years	34.57%
51–70 years	23.94%
>70 years	22.87%
Total	100%

Figure 2: Demographic Details – Age Group



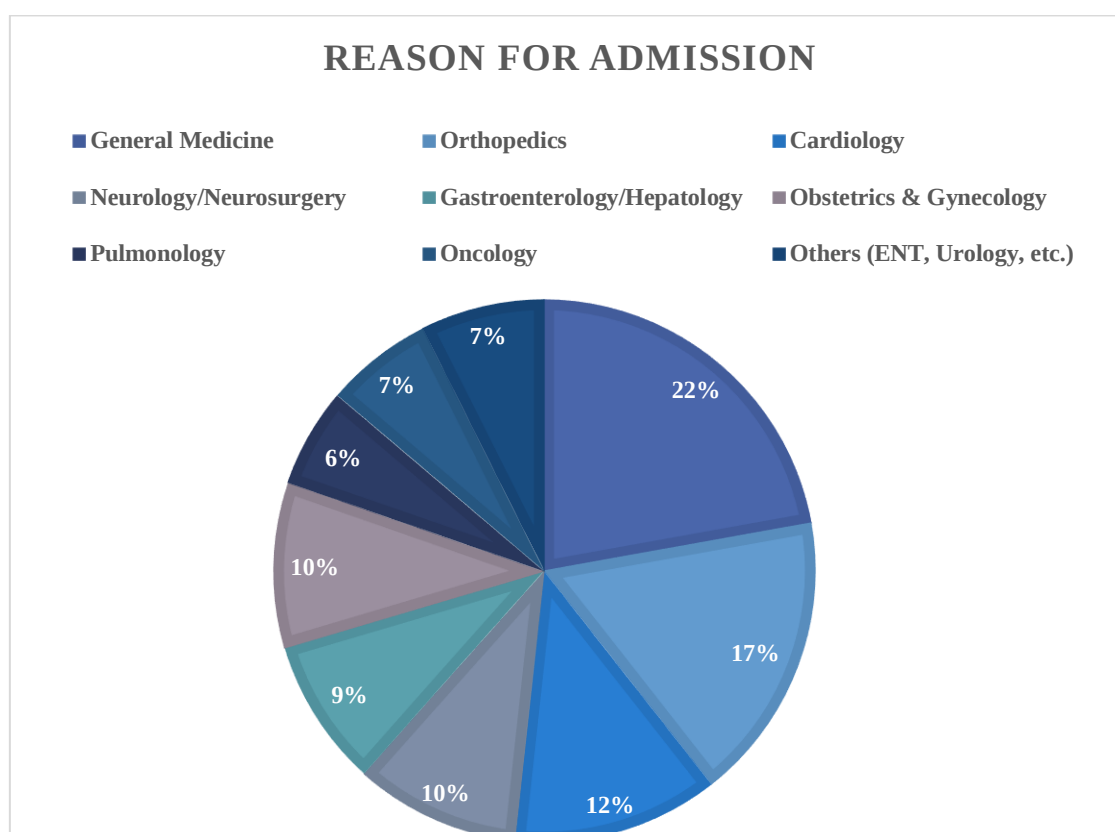
The bulk of responders (34.57%) were found to be between the ages of 31 and 50. This was followed by 23.94% in the age group of 51–70 years and 22.87% who were above 70 years. Respondents below 30 years constituted a smaller proportion, with 10.64% between 18–30 years and 7.89% below 18 years of age.

Table 6: Demographic Details – Reason for Admission

Reason for Admission	Percentage
General Medicine	22.17%
Orthopedics	17.25%
Cardiology	12.32%
Neurology/Neurosurgery	9.85%

Gastroenterology/Hepatology	8.87%
Obstetrics & Gynecology	9.85%
Pulmonology	5.91%
Oncology	6.41%
Others (ENT, Urology, etc.)	100%
Total	

Figure 3: Demographic Details – Reason for Admission

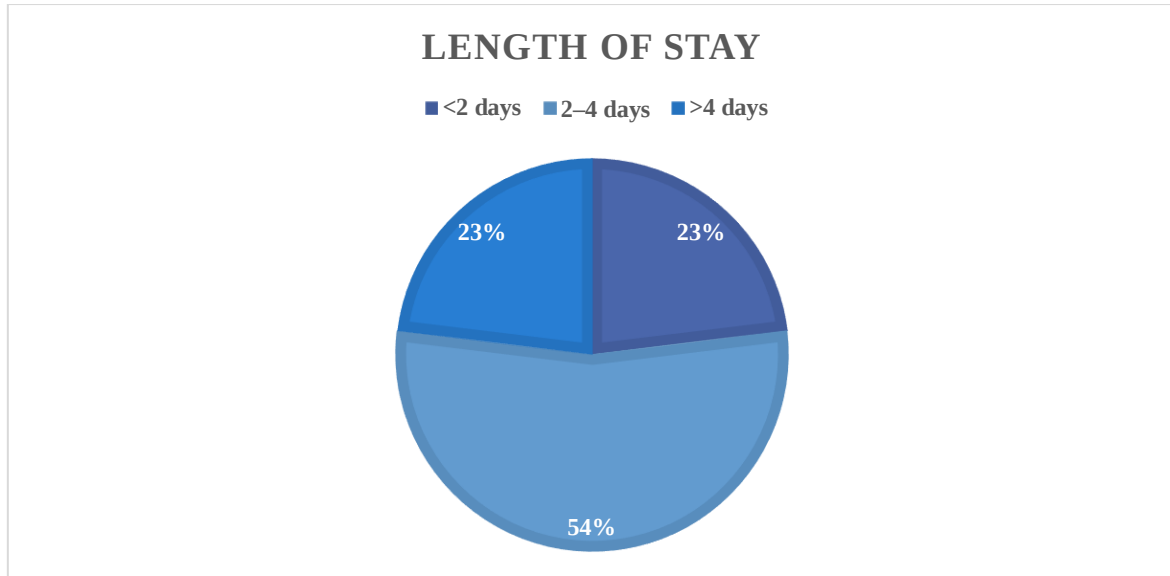


The majority of the respondents (22.17%) were admitted under general medicine. This was followed by 17.25% in orthopedics, and 12.32% in cardiology. Neurology/neurosurgery and obstetrics & gynecology accounted for 9.85% each. Other specialties such as gastroenterology/hepatology (8.87%), oncology (6.41%), pulmonology (5.91%), and other departments including ENT and urology (7.39%) also contributed to the total admissions.

Table 7: Demographic Details – Length of Stay

Length of Stay	Percentage
<2 days	23.08%
2–4 days	53.85%
>4 days	23.08%
Total	100%

Figure 4: Demographic Details – Average Length of Stay



It was found that the majority of patients (53.85%) had an average length of stay of 2–4 days. About 23.08% of the respondents were discharged in less than 2 days, while another 23.08% had a longer hospital stay of more than 4 days.

4.2 IMPORTANCE WEIGHT SCORE

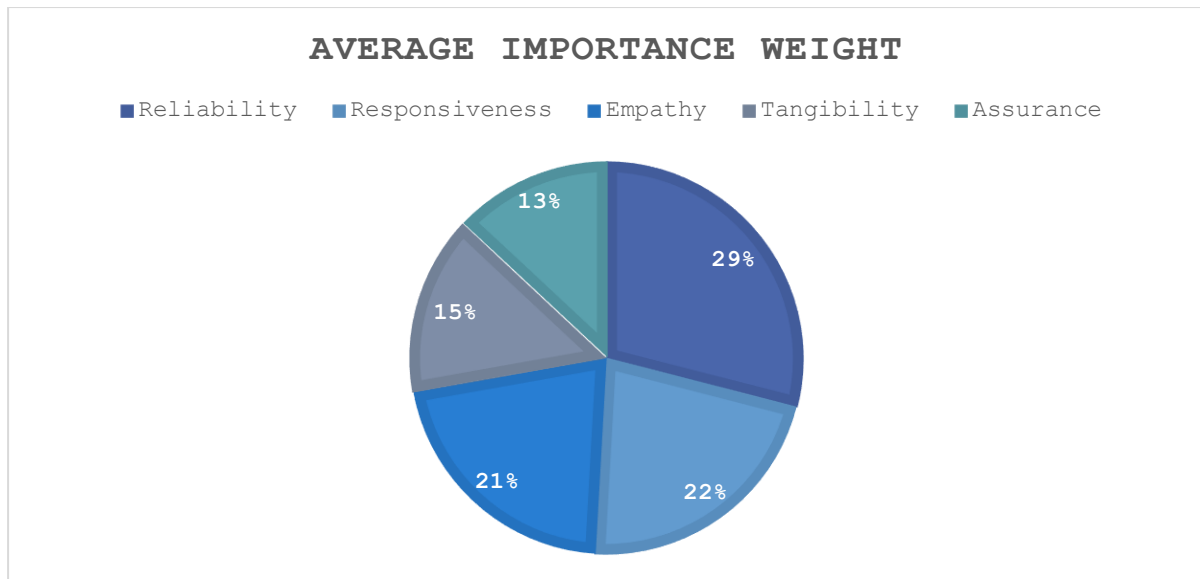
Though all the service dimensions are said to be important for determining the service quality, the participants in the study showed a varied differences when it came to prioritise the service dimension. It was requested of the participants to score the different aspects of service quality and weigh them such that the sum equals 100. Every respondent was explained the concept of Importance weight for the service quality when the “expectation” set of questionnaires were given to them at the time of admission into the ward.

On collecting the data on the importance weight by the 500 respondents, the ranking obtained was as follows:

Table 8: Average Importance Weight Score

Rank	Service Dimension	Average Importance Weight
1	Reliability	29
2	Responsiveness	21.9
3	Empathy	21.3
4	Tangibility	14.8
5	Assurance	13
Total		100

Figure 5: Average Importance Weight Score



The above chart shows that the respondents showed maximum attachment to Reliability dimension, followed by Responsiveness. Then comes the dimensions of Empathy and Tangibility. The dimension of Assurance was found to have the least importance weight score.

4.3 PERCEPTION THRESHOLD

Based on arguments put forth in the work of Heskett, Sasser, Schlesinger (1997), Azim (2008) put forth 80% as the benchmark as the perception threshold for customer satisfaction. 80% threshold would mean that a perception level score of minimum 4 out of a maximum 5 should be considered for any service dimension and a score lesser than 4 is taken as a non-acceptable level for that service dimension.

4.4 SERVQUAL RESULTS – THE TANGIBILITY DIMENSION

The **Tangibility** dimension of the SERVQUAL model in this study comprised **five questions** focused on assessing the physical infrastructure and visual elements of service delivery in the in-patient department of **Max Super Speciality Hospital, Dehradun**. These included cleanliness and maintenance of the hospital room and washroom, functionality of medical equipment, hygiene and timeliness of meal delivery, adherence to hygiene protocols by staff, and regular replacement of in-room amenities like bed linens and toiletries.

The analysis of the gap scores revealed a **negative score** for certain tangible elements such as **cleanliness and upkeep of hospital rooms and washrooms**, and **regular replacement of bed linens and in-room amenities**, indicating that patients perceived these aspects as falling short of their expectations. Similarly, the **timely delivery and hygiene of meals** received a lower perception score relative to expectations, suggesting a scope for improvement in hospital food services.

On the other hand, aspects such as the **availability and proper functioning of medical equipment** and **staff adherence to hygiene protocols (e.g., wearing masks, gloves)** yielded **positive gap scores**, reflecting that these tangible elements exceeded patient expectations. This suggests that Max Hospital performs well in maintaining clinical equipment and enforcing staff hygiene standards, contributing positively to the patient's perception of safety and professionalism.

These findings imply that while Max Hospital has effectively maintained critical medical infrastructure, there remains a need to enhance non-clinical tangibles like room maintenance, patient amenities, and food services to better align with patient expectations and improve overall satisfaction.

Table 9: SERVQUAL Result – Tangibility

Question	Average Expectation	Average Perception	Gap Score
Q1	4.55	4.14	-0.41
Q2	4.53	4.13	-0.41
Q3	4.57	4.15	-0.41
Q4	4.55	4.86	0.31
Q5	4.55	4.14	-0.41

In the below table one can see that the average dimension weight for **Tangibility** is found to be **14.8**, which is ranked **fourth** in comparison to other service dimensions. The **average unweighted gap score** is **-0.27**, and the **weighted gap score**, derived by multiplying the importance weight with the gap score, is **-0.04**. Both values being negative indicates that the tangible elements—such as cleanliness, medical equipment condition, and room hygiene—are **falling short of patient expectations**, even though these are not ranked as the top priority.

Table 10: SERVQUAL Result – Tangible

Dimension Weight	14.8
Average unweighted gap score	-0.27
Weighted gap score	-0.04
Average SERVQUAL Perception Score	4.28

The average perception SERVQUAL score comes to 4.28 which is well above the 80% threshold.

4.5 SERVQUAL RESULTS – THE RELIABILITY DIMENSION

The **Reliability** dimension included **six questions** assessing the consistency, accuracy, and dependability of service delivery. This encompassed detailed explanations of treatment plans, provision of correct medications, adherence to clinical protocols, availability of medical supplies, and accuracy in discharge summaries and test results.

The overall analysis of the reliability dimension revealed a **moderately negative gap score**. Key issues identified included inconsistencies in the communication of treatment procedures and occasional lapses in the availability of prescribed medical supplies. Some patients also highlighted discrepancies or delays in discharge summaries and medical reports.

Despite these issues, a few aspects such as the correctness of prescribed medications and compliance with hospital safety protocols reflected **minimal or neutral gap scores**, indicating partial alignment with patient expectations. Nevertheless, these results underscore the need for reinforcing reliability by ensuring that communication is consistent, medical supplies are well-stocked, and documentation is accurate and timely.

Table 11: SERVQUAL Result – Reliability

Question	Average Expectation	Average Perception	Gap Score
Q6	4.55	4.34	-0.21
Q7	4.55	4.34	-0.21
Q8	4.53	4.33	-0.2
Q9	4.54	4.33	-0.21
Q10	4.55	4.34	-0.21
Q11	4.55	4.33	-0.21

From the table below, the **Reliability** dimension is assigned the **highest weight** at **29**, indicating it is the **most critical** in-patient evaluations. Despite its importance, the **average unweighted gap score** is **-0.21**, and the **weighted gap score** is **-0.06**, both negative. This highlights a **key area for improvement**, as patients expect consistently accurate and dependable service which they are currently not receiving at the desired level.

Table 12: SERVQUAL Result – Reliability

Dimension Weight	29
Average unweighted gap score	-0.21
Weighted gap score	-0.06
Average SERVQUAL Perception Score	4.34

The average perception SERVQUAL score comes to 4.34 which is well above the 80% threshold.

4.6 SERVQUAL RESULTS – THE RESPONSIVENESS DIMENSION

The **Responsiveness** dimension consisted of **six questions** measuring the promptness and willingness of hospital staff to respond to patient needs and provide timely services. This included the speed of assistance after using the nurse call button, timely scheduling of appointments and tests, availability of emergency services, timely delivery of medications and test results, and responsiveness to queries or concerns.

The analysis showed a **consistently negative gap score** across most responsiveness indicators. Patients reported delays in receiving assistance after pressing the nurse call button, and there were perceived delays in the delivery of test results and availability of prescribed medications. Additionally, responsiveness to general patient queries and timely attention in emergency situations also showed minor gaps, though not as severe.

These negative gaps indicate that patients expected a higher level of immediacy and attention, suggesting a need to enhance staff availability, streamline communication protocols, and improve response times across departments. Responsiveness was one of the most critical service dimensions where perception lagged expectation, emphasizing the importance of focused operational improvements.

Table 13: SERVQUAL Result – Responsiveness

Question	Average Expectation	Average Perception	Gap Score
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Q12	4.55	4.0	-0.55
Q13	4.55	4.0	-0.55
Q14	4.54	4.0	-0.54
Q15	4.54	4.0	-0.54
Q16	4.53	4.0	-0.53
Q17	4.54	4.65	0.12

According to the table below, patients rank the **Responsiveness** dimension as the **second most essential**, with an average relevance weight of **21.9**. Both the **weighted** and **unweighted gap scores** are **-0.09** and **-0.43**, respectively. These consistently negative scores indicate a **significant gap in patient expectations versus actual experiences**, especially regarding promptness of service, responsiveness to concerns, and timeliness in appointments and treatments.

Table 14: SERVQUAL Result – Responsiveness

Dimension Weight	21.9
Average unweighted gap score	-0.43
Weighted gap score	-0.09
Average SERVQUAL Perception Score	4.11

The average perception SERVQUAL score comes to 4.11 which is well above the 80% threshold.

4.7 SERVQUAL RESULTS – THE ASSURANCE DIMENSION

The **Assurance** component included **four questions** that assessed staff members' professionalism, knowledge, and capacity to inspire patients' trust and confidence. This included confidence displayed by the nursing staff, pain management communication, adherence to infection prevention measures, and clarity in billing practices.

The gap analysis highlighted a **mixed outcome** for this dimension. Patients largely expressed confidence in the nursing staff's professional conduct and infection control practices, which showed **positive or neutral gap scores**. However, **communication regarding pain management** and **transparency in billing** were areas where expectations exceeded perceptions, leading to **negative gap scores**.

These findings indicate that while the clinical assurance aspects are generally satisfactory, there is room for improvement in explaining pain control options and making financial disclosures clearer. Enhancing these interactions can further strengthen patient confidence in the overall care process.

Table 15: SERVQUAL Result – Assurance

Question	Average Expectation	Average Perception	Gap Score
Q18	4.54	4.13	-0.41
Q19	4.56	4.14	-0.42
Q20	4.54	4.86	0.32
Q21	4.55	4.14	-0.41

As per the data shown below, the **Assurance** dimension holds a weight of **13**, placing it at the **lowest rank** in terms of patient priority. The **average unweighted gap score** is **-0.23**, and the **weighted gap score** is **-0.03**. Though this dimension is considered less critical, the fact that the perception still lags behind expectation reveals gaps in communication about safety protocols, staff professionalism, and billing transparency.

Table 16: SERVQUAL Result – Assurance

Dimension Weight	13
Average unweighted gap score	-0.23
Weighted gap score	-0.03
Average SERVQUAL Perception Score	4.32

The average perception SERVQUAL score comes to 4.32 which is well above the 80% threshold.

4.8 SERVQUAL RESULTS – THE EMPATHY DIMENSION

The **Empathy** dimension, consisting of **five questions**, assessed the degree of personalized care, understanding, and support provided by the hospital staff. This included attentiveness to patient complaints, patience with elderly patients, emotional support, visiting arrangements for family members, and courteousness of front desk staff.

The analysis indicated **positive gap scores** in areas such as the behaviour of front desk staff and staff interactions with elderly patients, reflecting a generally compassionate and respectful environment. Patients appreciated the ease of access to attendants and the empathy shown during their stay.

However, there were **slightly negative gap scores** related to how thoroughly complaints were addressed and the perceived sufficiency of emotional support during recovery. These scores suggest a need to strengthen hospital mechanisms for handling patient grievances more proactively and offering additional emotional or counselling support where required.

Overall, the empathy dimension reflects a **strong patient-centric culture**, with only minor service areas that can be improved to ensure an even more personalized experience.

Table 17: SERVQUAL Result – Empathy

Question	Average Expectation	Average Perception	Gap Score
Q22	4.56	4.14	-0.42
Q23	4.56	4.87	0.31
Q24	4.55	4.15	-0.4
Q25	4.55	4.14	-0.41
Q26	4.54	4.86	0.31

In the table below, the **Empathy** dimension has a weight of **21.3**, placing it **third** among all dimensions. The **average unweighted gap score** is **-0.12**, and the **weighted gap score** is **-0.03**. While the gap here is smaller compared to other dimensions, it still reflects that there is

scope for improvement in providing more personalized and compassionate care, particularly in listening to patient concerns and emotional support.

Table 18: SERVQUAL Result – Empathy

Dimension Weight	21.3
Average unweighted gap score	-0.12
Weighted gap score	-0.03
Average SERVQUAL Perception Score	4.43

The average perception SERVQUAL score comes to 4.43 which is well above the 80% threshold.

The average perception SERVQUAL score comes to 4.28 which is the 80% perception threshold.

Table 19: Average SERVQUAL Perception Score

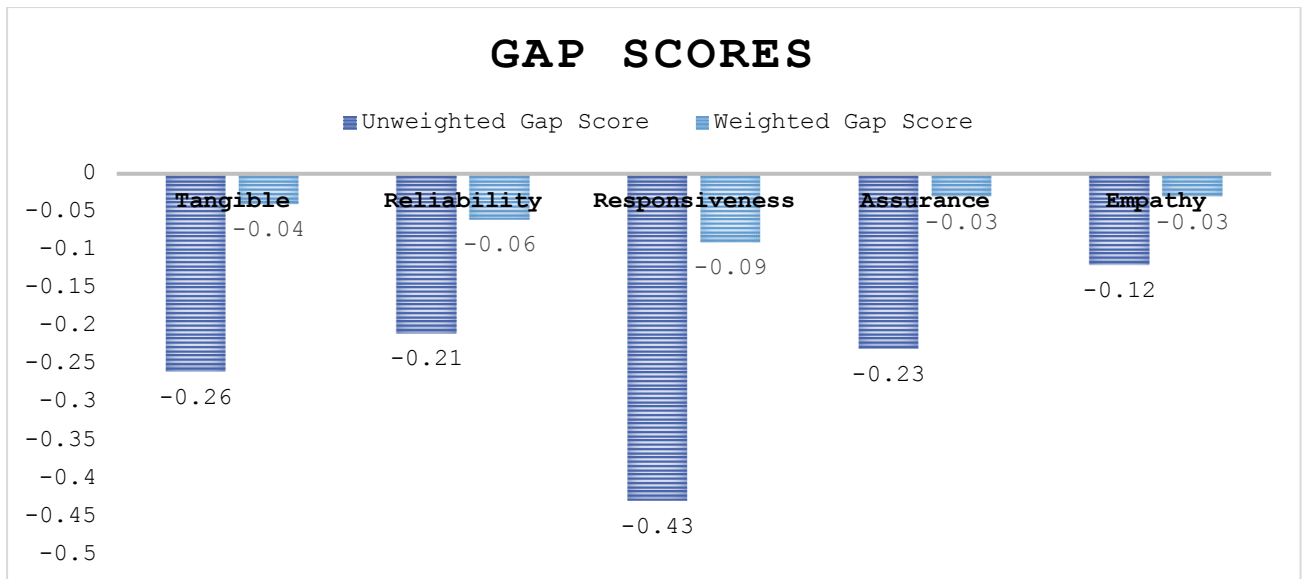
S.no	Dimension	Average SERVQUAL Perception Score
1	Tangibility	4.28
2	Reliability	4.34
3	Responsiveness	4.11
4	Assurance	4.31
5	Empathy	4.43

The quantitative results of the respondents regarding perception scores are summarized in the above table. A score of 5, the highest achievable, indicates that the services are excellent. 4.28 is considered the threshold perceptual score. Accordingly, it can be observed that responsiveness is just somewhat below the average perception score, whilst tangibility, reliability, assurance, and empathy all surpass the threshold perception level.

5. DISCUSSION

According to the current study, the average perceived SERVQUAL score is greater than 4.28, which is over the threshold level of patient satisfaction. This suggests that the majority of respondents are happy with the caliber of care provided by Max Super Speciality Hospital in Dehradun. The presence of places that still need service improvements is suggested by a thorough examination of the gap scores across the five SERVQUAL dimensions, which shows a mix of positive and negative sub-dimension scores. Below is a discussion of the five service dimensions' combined gap scores:

Figure 16: SERVQUAL Gap Scores



The presence of negative gaps highlights the scope of improvement within certain service dimensions. When considering the **weighted gap scores**, it is observed that the dimension of **responsiveness** has the **most negative weighted gap score**, followed by **reliability** and **tangibility**, indicating that these are the service areas where patients perceive a considerable shortfall in expected versus received service quality.

Responsiveness being a critical dimension (with the second-highest importance weight of 21.9), includes elements such as timely response to call bells, prompt appointment scheduling, availability of urgent care, and responsiveness to concerns—all of which received relatively low perception scores compared to patient expectations. Similarly, reliability—ranked as the most important dimension by patients with a weight of 29—also exhibited a gap in consistent service delivery, especially in terms of discharge process accuracy and supply availability.

Although **assurance and empathy** showed the **least negative weighted gap scores**, indicating relatively better performance, there is still a need for improvements. Assurance, which includes transparency in billing and professionalism, is at the perception threshold. Meanwhile, empathy, although having a better perception score, remains important from a service quality perspective due to its role in enhancing trust and emotional support.

To improve overall service delivery, the hospital should implement structured staff training, particularly focusing on **responsiveness and reliability**, and reinforce **protocol-based communication** across clinical and administrative touchpoints. As emphasized by Zeithaml, Parasuraman, and Berry (1990), it is essential for healthcare organizations to continuously monitor patient perceptions, investigate root causes of service gaps, and strategically act to bridge these gaps.

Thus, the present study identifies the specific dimensions and sub-areas where service enhancement is needed, which are presented in the subsequent section.

Table 20: SERVQUAL Statement Remarks

S. No	Statement	Gap Score	Remarks
1	Q1	-0.41	Fails to meet patient's expectations
2	Q2	-0.41	Fails to meet patient's expectations
3	Q3	-0.41	Fails to meet patient's expectations
4	Q4	0.31	Exceeds patient's expectations
5	Q5	-0.41	Fails to meet patient's expectations
6	Q6	-0.21	Fails to meet patient's expectations
7	Q7	-0.21	Fails to meet patient's expectations
8	Q8	-0.2	Fails to meet patient's expectations
9	Q9	-0.21	Fails to meet patient's expectations
10	Q10	-0.21	Fails to meet patient's expectations
11	Q11	-0.21	Fails to meet patient's expectations
12	Q12	-0.55	Fails to meet patient's expectations
13	Q13	-0.55	Fails to meet patient's expectations
14	Q14	-0.54	Fails to meet patient's expectations
15	Q15	-0.54	Fails to meet patient's expectations
16	Q16	-0.53	Fails to meet patient's expectations

17	Q17	0.12	Exceeds patient's expectations
18	Q18	-0.41	Fails to meet patient's expectations
19	Q19	-0.42	Fails to meet patient's expectations
20	Q20	0.32	Exceeds patient's expectations
21	Q21	-0.41	Fails to meet patient's expectations
22	Q22	-0.42	Fails to meet patient's expectations
23	Q23	0.31	Exceeds patient's expectations
24	Q24	-0.4	Fails to meet patient's expectations
25	Q25	-0.41	Fails to meet patient's expectations
26	Q26	0.31	Exceeds patient's expectations

It is thus evident that aspects such as the **availability of medical equipment, lighting in patient rooms, clarity of information shared by hospital staff, and the sense of safety and professionalism** have been successful in meeting patient expectations. These items, reflected in questions like Q4, Q17, Q20, Q23, and Q26, showed **positive gap scores**, indicating that patients perceived these elements of service quality as better than or equal to what they had expected.

However, several other items in the SERVQUAL questionnaire—a **total of 19 out of 26**—revealed **negative gap scores**, indicating these areas fell short of patient expectations. These include repeated gaps in areas like room hygiene, empathy during patient interaction, explanation of treatment procedures, billing transparency, and timeliness of services. These shortfalls must be considered for **corrective action** to enhance patient experience and improve perception scores.

The SERVQUAL-based analysis confirms that although the **overall perception of patients is above the threshold average (4.28)** and suggests generally acceptable service delivery, these **19 negatively scoring subcategories** signal an opportunity for the hospital to **address service delivery gaps systematically**. Sharma (2015) emphasized that quality of service and client satisfaction are tightly interlinked. Therefore, the current study suggests specific targeted interventions for **Max Super Speciality Hospital, Dehradun to enhance patient-centered care** and address the highlighted shortcomings.

5.1 IMMEDIATE TERM INTERVENTION

Based on the SERVQUAL gap scores, it was found that the dimension of responsiveness had the most negative unweighted gap score (-0.43), followed by reliability (-0.21). Intervention areas requiring immediate action are those where perception scores are significantly below expectation scores.

S.no	Intervention Area	Gap Score
1	Responsiveness – Timely response to call bells	-0.55
2	Responsiveness – Availability of GDA staff	-0.55
3	Responsiveness – Promptness in housekeeping response	-0.54
4	Responsiveness – Timely delivery of medicines	-0.54
5	Responsiveness – Timeliness of test results	-0.53
6	Reliability – Accuracy in discharge summaries and reports	-0.21

For the above areas, the hospital should focus on reducing turnaround time (TAT), improving staff availability during shifts, and conducting root cause analysis for operational delays. Time-motion studies and prompt staff deployment protocols should be implemented.

5.2 INTERMEDIATE TERM INTERVENTION

Moderate negative gap scores were observed in areas related to reliability and assurance. These suggest the need for medium-term interventions focused on improving consistency in service delivery and strengthening patient trust.

S.no	Intervention Area	Gap Score
1	Reliability – Communication of treatment plan	-0.21
2	Reliability – Timely availability of medical supplies	-0.21
3	Assurance – Communication of pain management	-0.42
4	Assurance – Billing transparency	-0.41

Focus on staff sensitization, communication training, and protocol reinforcement. Also ensure accuracy in billing and clear explanations of procedures to build patient confidence.

5.3 LONG TERM INTERVENTION

Although the empathy dimension had the least negative gap (-0.12), certain elements like emotional support and complaint redressal still underperformed. Long-term efforts should focus on building a culture of patient-centric care.

S.no	Intervention Area	Gap Score
1	Empathy – Complaint handling with empathy	-0.42
2	Empathy – Emotional support	-0.4
3	Tangibility – Room cleanliness and meal hygiene	-0.41

Establish formal grievance redressal systems, enhance emotional support services, and focus on continuous quality improvements in non-clinical aspects of care.

6. CONCLUSION

The results from this SERVQUAL-based study highlight several critical areas that Max Super Speciality Hospital, Dehradun should focus on to enhance patient satisfaction. While the overall perception score exceeded the 80% satisfaction threshold (average: 4.28), a closer look revealed that 19 out of 26 service indicators had negative gap scores, signaling gaps between patient expectations and actual service provided. The dimensions of **Responsiveness**, **Reliability**, and **Tangibility** were found to be the most underperforming, despite being among the highest in importance from the patient's perspective.

Patient perception can be significantly improved by responding to their concerns and complaints with greater promptness and empathy. Effective grievance redressal systems play a pivotal role in influencing overall satisfaction. Thus, it is essential that hospital staff are trained not only in clinical proficiency but also in communication, empathy, and service responsiveness. Additionally, enhancing transparency in billing, ensuring timely service delivery, and reinforcing hygiene protocols can positively impact patients' trust and hospital reputation.

The application of the SERVQUAL tool has provided actionable insights that can help the hospital restructure key service processes. It is recommended that Max Hospital develops a more patient-centered service model supported by staff sensitization, periodic training, and standard operating procedures that ensure consistent, high-quality care across all dimensions of service.

7. LIMITATIONS OF THE STUDY

This study relies solely on the SERVQUAL model and therefore inherits the limitations associated with the tool. A key concern is that both expectation and perception scores are captured **after** the hospital stay, whereas patients typically form their expectations much earlier—prior to or during admission. This time lag raises concerns regarding the reliability and stability of the expectation scores (Palmer, 2005).

Furthermore, patient expectations are inherently subjective and can vary based on prior experiences, health conditions, and socio-cultural backgrounds. This variability makes it difficult to consistently measure expectations across respondents or time periods. Consequently, while SERVQUAL provides a structured framework for service evaluation, the interpretation of results must consider this inherent subjectivity and evolving nature of patient expectations.

In conclusion, while SERVQUAL serves as a useful diagnostic tool, it should be complemented with **qualitative feedback mechanisms**, continuous patient engagement, and service audits to provide a holistic understanding of patient satisfaction and help drive sustained improvements in care quality.

8. REFERENCE

- Parasuraman A, Zeithaml VA, Berry LL. *A conceptual model of service quality and its implications for future research. J Mark.* 1985;49(4):41–50.
- Zeithaml VA, Parasuraman A, Berry LL. *Delivering quality service: balancing customer perceptions and expectations.* New York: Free Press; 1990.
- Hendriks AAJ, Oort FJ, Vrieling MR, Smets EMA. *Patient satisfaction surveys: a tool for quality improvement? Patient Educ Couns.* 2002;51(3):259–66.
- Oliver RL. *Measurement and evaluation of satisfaction processes in retail settings. J Retail.* 1981;57(3):25–48.
- Kotler P. *Marketing management. 11th ed.* Upper Saddle River (NJ): Prentice Hall; 2003.
- Calnan M. *The patient's perspective: explaining satisfaction. Soc Sci Med.* 1988;27(8):927–33.
- Roter D, Hall JA, Kern DE, Barker LR, Cole KA, Roca RP. *Physician-patient communication: the relationship with malpractice claims among primary care physicians and surgeons. JAMA.* 1997;277(7):553–9.
- Peprah AA. *Determinants of patients' satisfaction at Sunyani Regional Hospital, Ghana. Int J Bus Soc Res.* 2014;4(1):133–43.
- Sixma HJ, Kerssens JJ, Campen CV, Peters L. *Quality of care from the patients' perspective: from theoretical concept to a new measuring instrument. Health Expect.* 1998;1(2):82–95.