

## RESEARCH

# The impact of healthcare service quality dimensions on patient satisfaction: a case study of Ganta United Methodist Hospital, Liberia

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Patient satisfaction is an important measure of healthcare service quality and influences the overall effectiveness of healthcare systems. This study aims to evaluate the relationship between various dimensions of healthcare service quality and patient satisfaction. The dimensions include Tangibility, Reliability, Responsiveness, Assurance, and Empathy. A convenient sampling technique was employed. Data were collected via questionnaire distribution to people who have received services at the Ganta United Methodist Hospital. A total of 384 questionnaires were distributed. However, due to missing information, 381 valid responses were employed for analysis using the Statistical Program for Social Sciences (SPSS) software. Factor analysis was conducted for testing validity and reliability was carried out on the valid items to generate Cronbach's alpha values. Correlation and regression analysis were conducted on the constructs of interest. The findings revealed a satisfaction level below average among respondents. A positive association and a significant impact of the service quality dimensions on patient satisfaction were also revealed. It is recommended that the hospital management implement strategies to enhance these dimensions and patient overall satisfaction, which include providing training for all members of staff on communication skills, providing an environment that is easily assessable, and paying keen attention to patient feedback to create room for continuous improvement.

**Keywords:** healthcare quality, patient satisfaction, quality improvement, service delivery, service quality dimensions

## 1. Introduction

In the area of healthcare, the pursuit of offering quality healthcare extends beyond basic medical procedures to include the dimensions of service quality. Patient satisfaction is a significant metric of the overall efficiency and effectiveness of healthcare services (1). As healthcare systems strive to improve patient-centered care and improve service standards, the measurement of patient satisfaction with healthcare service quality dimensions arises as a relevant topic of study. Healthcare service quality dimensions is defined as the different aspects that collectively contribute to patient's perception of the quality of care received. These

dimensions include tangibility, reliability, responsiveness, assurance and empathy. Reliability is the capability to perform the service reliably and correctly. The reliability of a firm relates to how well it performs and completes its promised service, quality, and accuracy within the limits agreed upon between the hospital and the customer (2). It is defined as the ability to consistently and precisely deliver promised services, i.e., when something is promised, it is delivered, and services are delivered on time, such as appointments, registration, and problem solutions (3). Gachau (4) conducted a study that investigated customer satisfaction and insurance service delivery quality in Kenya and discovered that insurance customers derive complete

satisfaction from good treatment and prompt and accurate service from employees and agents, which leads to them purchasing more products from the same insurer and recommending the insurance company to family and friends. According to the study, clients value insurer flexibility and speed, both of which are markers of service reliability (timeliness in service delivery). Zygiaris et al. (5) conducted a study of the effect of service quality on customer satisfaction in selected insurance businesses in Addis Abeba and discovered a significant gap in service reliability, which was deemed to be insufficient, resulting in customer dissatisfaction. The staff and insurance agent made promises to customers that they could not keep, which led to low levels of customer satisfaction. Nguyen et al. (6) investigated the elements that influence customer satisfaction in the Iranian insurance business. The study also discovered gaps in service reliability, such as when service providers did not provide services on time, and hence were not reliable, causing customer dissatisfaction.

Assurance is the aspect of trust and confidence that patients perceive while engaging with healthcare providers and the entire healthcare system. Assurance is the capacity to instill trust and confidence in people. It also refers to the courtesy that healthcare staff must offer to their patients. It involves employees' skills and capabilities, as well as whether these skills and capabilities earn the customers' trust and confidence (7). If patients feel at ease with the staff, it is likely that they will return to the hospital. Competence, courtesy, excellent communication, and an overall attitude that serves patients successfully and efficiently are characteristics of assurance (8). Customers have faith in the hospital because of the behavior of the employees who are respectful and always have the requisite knowledge to address client questions. Previous studies on patient satisfaction in the healthcare sector have also discovered a link between service quality and satisfaction (9). Darrmawan et al. (10) for example, reveal that empathy and assurance dimensions, which mostly represent word-of-mouth communication, have a considerable influence on patients' willingness to return to the hospital. Another study, which examined the dimensionality of the SERVQUAL instrument in the Northern Cyprus healthcare system, found that assurance had some influence on patient satisfaction in public hospitals (11).

Tangibility encompasses a wide range of concepts, including physical buildings, equipment, and the outward look of individuals. Tangibles are characteristics of a service that can be 'felt' without actually paying for it. Tangibles are the 'visible' characteristics of a service that firms use to promote external client satisfaction. In other words, it refers to the physical attributes of employees, facilities, equipment, hospital surroundings, visitor seating, bathroom cleanliness, patient room cleanliness, and overall tangible infrastructure attractiveness that were drawn to get more patients, implying that patient attraction will be easily

produced if the hospital is improved, but if the hospital is not attractive, it cannot attract or retain patients (12). A study by Manzoor et al. (1) discovered that medical facilities have a significant influence on patient satisfaction. They go on to say that hygienic conditions, a healthy interior atmosphere for patients, natural light arrangements, a peaceful environment of the wards, clean wards, and adequate bed positioning are all vital ambient items in any hospital. If these items are well organized, they will influence 60 percent of the patients to return for treatment.

Empathy may be defined as the degree of sympathy and special care that is shown toward patients. Empathy is a means for hospital professionals to prioritize patients' needs. The most important factor was to get the patient's attention, which contributed to the patient's satisfaction. It comprises consumer access, communication, and understanding their needs. Patients today have higher expectations of service providers (13). Good communication between healthcare practitioners and patients frequently results in easy comprehension and attention from the patient. Humanism in healthcare is advanced by expressing patient empathy. In reality, demonstrating empathy in healthcare is a critical component of improving the patient experience and patient interaction. In healthcare, empathy plays an important part in the patient experience and is an important component of the physician-patient relationship (14). When a patient arrives at their healthcare provider's office, their medical condition, whether it is a severe sickness or accident, a chronic condition, or simply a normal check-up, may frequently express feelings such as anxiety, fear, and nervousness. Empathy is a highly effective and strong tool for increasing patient trust, calming anxiety, and improving health results. Research has shown that empathy has been linked to greater drug adherence, fewer malpractice charges, fewer errors, and more patient satisfaction (15).

Responsiveness is the ability to respond in a timely way to the requirements of one's customers while also exhibiting a desire to serve those customers (16). The eagerness to assist clients and offer prompt service is referred to as responsiveness. This component is concerned with paying attention to patients, responding to questions, and resolving problems (17). The responsiveness of the system is a key component of patients' overall experience when receiving medical care (18). If a service is not provided, the capacity to recover promptly and competently can result in highly positive evaluations of quality (19). As a result, people are dissatisfied after having to wait for a lengthy time for a prescription, consultation, or treatment. Patients comprehend and evaluate the many facets of their experiences while in a healthcare facility (20). Successes in patient responsiveness can have a direct impact on patient well-being. If the patient's experience with services falls short of his or her expectations, the patient will be unsatisfied (21). Unmet expectations, in other words, may contribute to dissatisfaction, which may lead to poor compliance

(22). However, if the services received meet the patient's expectations, he or she will be satisfied (23). Based on the foregoing, it is predicted that meeting patients' realistic expectations (responsiveness) will result in their satisfaction.

The evaluation of these dimensions has the potential to reveal areas for improvement within healthcare systems, hence leading strategic activities targeted at increasing patient satisfaction and improving the overall care experience.

In recent years, there has been a shift in the healthcare landscape toward patient-centered care models, in which patients are regarded as active participants in their healthcare journeys rather than passive users of services (24). This shift underscores the need for understanding patient viewpoints and implementing their suggestions in the enhancement of healthcare service delivery and as such, assessing the satisfaction of patients has grown in significance not just as a performance indicator but also as a driver of favorable health outcomes. The study aims to evaluate the satisfaction level of patients who have visited Ganta United Methodist Hospital based on the service quality dimensions.

## 2. Methodology

**Figure 1** below shows the proposed model of different service dimensions that have an effect on patient satisfaction.

### 2.1. Sample and procedure

In this cross-sectional study, data were collected from people who have previously been treated at Ganta United Methodist Hospital. Before filling the questionnaire, full consent was obtained from each participant after the objectives of the study were stated. The selection of respondents was conducted via the convenience sampling technique. Convenience sampling is a non-probabilistic sampling technique in which respondents who are easily accessible to the researcher are selected. The sample size was obtained using the statistical formula  $n = Z^2 (pq)/e^2$ , which is used to estimate the sample size for an unknown population (25). The sample size after calculation resulted in 384. After distributing to participants, all questionnaires were returned. However, 3 questionnaires were removed due to missing information in them. From the descriptive analysis presented in **Table 1**, most respondents (55.6%) were in the age range 26–35 years, while the least number (6.0%) were 46 years and above. There was a significant difference in the number of males and females, as 15.2% was for the former and 84.8% for the latter. Most of the participants (55.9%) acquired education up to primary/secondary level and the least (2.4%) obtained graduate education.

**TABLE 1** | Demographic characteristics of surveyed patients ( $n = 381$ ).

Variables	N	(%)
<b>Age</b>		
20–25 years	30	7.9
26–35 years	212	55.6
36–45 years	116	30.4
46 and above	23	6.0
<b>Gender</b>		
Female	323	84.8
Male	58	15.2
<b>Educational level</b>		
None	73	19.2
Primary/secondary	213	55.9
Diploma	60	15.7
First degree	26	6.8
Masters/PhD	9	2.4

### 2.2. Measures

The administered questionnaire had 2 sections. The first was centered on the demographic information of the participants. The second category measured the main constructs (Service quality dimensions and patient satisfaction). The items were adopted from research by Parasuraman et al. (1988) with responses utilizing a 5-point Likert Scale (“Strongly disagree”–“Strongly agree”).

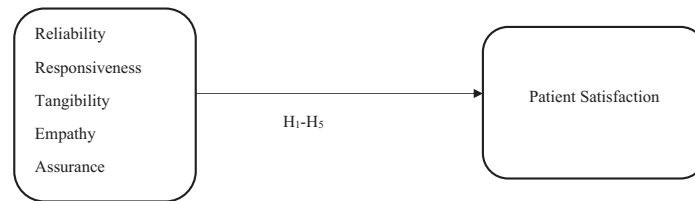
### 2.3. Data analysis

Statistical analysis was carried out using the SPSS program. A validity test was carried out using factor analysis, which is widely known to be one of the most effective techniques for construct validity (26). A reliability test of the valid items was conducted to obtain Cronbach's alpha ( $\alpha$ ) values which are used to determine internal consistency (27). A rule of thumb is that a coefficient  $\geq 0.6$  is deemed suitable (28). For the correlation analysis, the constructs were tested and coefficients generated using the Pearson Correlation test was used to determine the strength and direction of the examined associations. A regression analysis was then performed to determine the presence of a significant direct effect between the predictor and outcome variables.

## 3. Results

### 3.1. Descriptive analysis

**Table 2** reveals the mean and standard deviation of the different items as filled by the respondents. Since a 5-point Likert scale was employed, a median value of 3.0 was



**FIGURE 1** | Research model (29).

employed as a benchmark. Thus, values below 3.0 imply a dissatisfaction regarding the item and those from 3.0 and above imply satisfaction. The responses obtained revealed a general dissatisfaction with the service quality dimensions.

### 3.2. Reliability and validity analysis

**Table 3** shows the validity and Cronbach's alpha values of the items. Values from 0.5 and above were considered a significant factor loading as suggested by Gupta and

Falk (30). All items were above the threshold and a reliability test was conducted.

### 3.3. Correlation analysis

The analysis represented in **Table 4** revealed a significant and positive association between the constructs. The findings met the criteria for conducting the regression analysis.

### 3.4. Hypothesis testing

**Table 5** shows a summary of the hypothesis test and the outcome after conducting a regression analysis. All

**TABLE 2** | Descriptive analysis.

	Mean	Std. deviation
<b>Tangibility</b>		
T1	1.93	0.883
T2	1.86	0.804
T3	1.82	0.840
T4	2.09	1.161
<b>Reliability</b>		
R1	2.01	1.004
R2	1.81	0.750
R3	1.83	0.873
R4	1.89	0.987
R5	1.83	0.811
<b>Responsiveness</b>		
RE 1	1.83	0.828
RE 2	1.88	0.884
RE 3	2.04	0.923
RE 4	2.08	0.925
<b>Assurance</b>		
A1	2.02	0.939
A2	2.08	1.017
A3	2.17	1.099
A4	2.00	0.972
<b>Empathy</b>		
E1	2.18	1.139
E2	2.07	1.060
E3	2.05	1.030
E4	2.08	1.002
E5	1.94	0.907
<b>Patient satisfaction</b>		
PS1	1.96	0.905
PS2	1.95	0.965
PS3	2.01	0.912
PS4	1.96	1.002

**TABLE 3** | Validity and reliability.

Variable	Indicator	Factor loadings	Cronbach's $\alpha$
Tangibility	T 1	0.576	0.791
	T 2	0.635	
	T 3	0.891	
	T 4	0.624	
Reliability	R 1	0.732	0.864
	R 2	0.711	
	R 3	0.516	
	R 4	0.721	
	R 5	0.665	
Responsiveness	RE 1	0.865	0.748
	RE 2	0.612	
	RE 3	0.714	
	RE 4	0.729	
Assurance	A 1	0.737	0.894
	A 2	0.702	
	A 3	0.811	
	A 4	0.762	
	A 5	0.698	
Empathy	E 1	0.770	0.893
	E 2	0.682	
	E 3	0.787	
	E 4	0.773	
	E 5	0.783	
Patient satisfaction	PS 1	0.696	0.849
	PS 2	0.783	
	PS 3	0.891	
	PS 4	0.771	

**TABLE 4 |** Correlation analysis.

Constructs	1	2	3	4	5	6
Patient satisfaction (1)	1					
Tangibility (2)	0.260**	1				
Reliability (3)	0.283**	0.768**	1			
Responsiveness (4)	0.378**	0.305**	0.376**	1		
Assurance (5)	0.471**	0.292**	0.339**	0.770**	1	
Empathy (6)	0.586**	0.343**	0.360**	0.636**	0.799**	1

\*\*Correlation is significant at the 0.01 level (2-tailed).

**TABLE 5 |** Hypothesis summary.

Constructs	Beta	p	Decision
Tangibility-patient satisfaction	0.260	<0.001	Supported
Reliability-patient satisfaction	0.283	<0.001	Supported
Responsiveness-patient satisfaction	0.378	<0.001	Supported
Assurance-patient satisfaction	0.471	<0.001	Supported
Empathy-patient satisfaction	0.586	<0.001	Supported

service dimensions were shown to significantly influence patient satisfaction.

## 4. Discussion

Healthcare professionals generally strive to satisfy their patients by treating their medical concerns. The level of patient satisfaction is a crucial indicator of how well healthcare providers are doing at addressing patients' demands (29). It plays a big role in determining what patients desire (31). Our findings suggest a significant impact on reliability on patient satisfaction is in line with that of Abidova et al. (32). The reliability of a firm relates to how well it performs and completes its promised service, quality, and accuracy within the limits agreed upon between the hospital and the customer (2). Zygiaris et al. (5) conducted a study of the effect of service quality on customer satisfaction in selected insurance businesses in Addis Abeba and discovered a significant gap in service reliability, which was deemed to be insufficient, resulting in customer dissatisfaction. The staff and insurance agent made promises to customers that they could not keep, which led to low levels of customer satisfaction. Responsiveness also had a positive impact on patient satisfaction. Eberle et al. (33) also suggest a significant relationship between responsiveness and customer satisfaction. Successes in patient responsiveness can have a direct impact on patient satisfaction. If the patient's experience with services falls short of his or her expectations, the patient will be unsatisfied. Unmet expectations, in other words, may contribute to dissatisfaction which may lead to poor compliance

(22). However, if the services received meet the patient's expectations satisfaction is enhanced. Tangibility also had a positive impact on patient satisfaction, which supports the results of (34). A study by Manzoor et al. (1) discovered that medical facilities have a significant influence on patient satisfaction. They go on to say that hygienic conditions, a healthy interior atmosphere for patients, natural light arrangements, a peaceful environment of the wards, clean wards, and adequate bed positioning are all vital ambient items in any hospital. If these items are well organized, they will influence 60 percent of the patients to return for treatment. In line with our expectation, empathy had a positive influence on patient satisfaction, which is in tandem with the findings of the study carried out by Hafeez and Muhammad (35). They argue that there is a positive and significant impact of empathy on customer satisfaction, which influences customer loyalty. Humanism in healthcare is advanced by expressing patient empathy. In reality, demonstrating empathy in healthcare is a critical component of improving the patient experience and patient interaction. In healthcare, empathy plays an important part in the patient experience and is an important component of the physician-patient relationship (14). When a patient arrives at their healthcare provider's office, their medical condition, whether it is a severe sickness or accident, a chronic condition, or simply a normal check-up, may frequently express feelings such as anxiety, fear, and nervousness (36). Research has shown that empathy has been linked to greater adherence, fewer malpractice charges, fewer errors, and increased patient satisfaction (14). Lastly, assurance had a significant impact on patient satisfaction which concurs with the findings of Umoke et al. (37). Their research revealed a strong correlation between assurance and patient satisfaction. The majority of patients were satisfied with the thoroughness of the medical examination, medication/follow-up care instructions, medical advice received, and the competency of healthcare professionals. Assurance is the capacity to instill trust and confidence in people. It also refers to the courtesy that healthcare staff must offer to their patients. It involves employees' skills and capabilities, as well as whether these skills and capabilities earn the customers' trust and confidence (7). If patients feel at ease with the staff, it is likely that they will return to the hospital. Competence, courtesy, excellent communication, and an overall attitude that serves patients successfully and efficiently are characteristics of assurance. Customers have faith in the hospital because of the behavior of the employees who are respectful and always have the requisite knowledge to address client questions.

### 4.1. Limitations and future research

This study examines service quality broadly; a more focused evaluation of a specific department such as the Intensive Care Unit (ICU), or dental office may be conducted. A quantitative

study was employed; mixed studies should be carried out in the future to give patients an in-depth opportunity to express their perceptions. Also, the study was done only in one government-run hospital; the results may not be applicable to other government hospitals. This subject requires further research.

## 5. Conclusion

Patient satisfaction was revealed to be positively correlated with tangibility, responsiveness, assurance, and empathy. According to the study, patients are less satisfied when medical professionals take too long to attend to their needs. The research provides managers and healthcare providers with valuable insight into approaches to achieving patient satisfaction. Healthcare managers who want to retain customers and achieve overall patient satisfaction should implement evidence-based strategies which include providing training for all members of staff on communication skills, providing an environment that is easily assessable, and paying keen attention to patient feedback to create room for continuous improvement.

## Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

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