

Impact of NABH Accreditation on Service Quality of Hospitals in Bengaluru and Tumakuru City

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Abstract

Maintaining quality in service is the central magnetism of the organizational ethos that fulfill the customer's expectation and ensure the maximum level of satisfaction. The concept is more relevant in the hospital services. Enhancing the quality of care is not only the basic need for the hospitals but has become an important element to survive in the market. The motive of the research study was to understand the importance of maintaining service quality in hospital that can satisfy the customers' expectation and build a goodwill for the long run survival. The research was conducted based on the primary and secondary sources of data that designated the inclusive representation of the principal motive. In the present research study, both descriptive and exploratory research design were implemented and the data were collected from the selected stakeholders of NABH accredited hospitals in Bengaluru and Tumakuru. Six chapters for NABH standards five dimensions of SERVQUAL by A. Parasuraman was considered for the research. The independent and dependent variables were identified and multiple regression analysis was executed for data analysis using SPSS software. Correlation was done in order to examine the extent of influence of independent variable on dependent variable with confidence level of 95%. The principal outcome of the research indicates that hospitals with NABH accreditation, maintain the service quality parameters and ensure the better healthcare services to the patients.

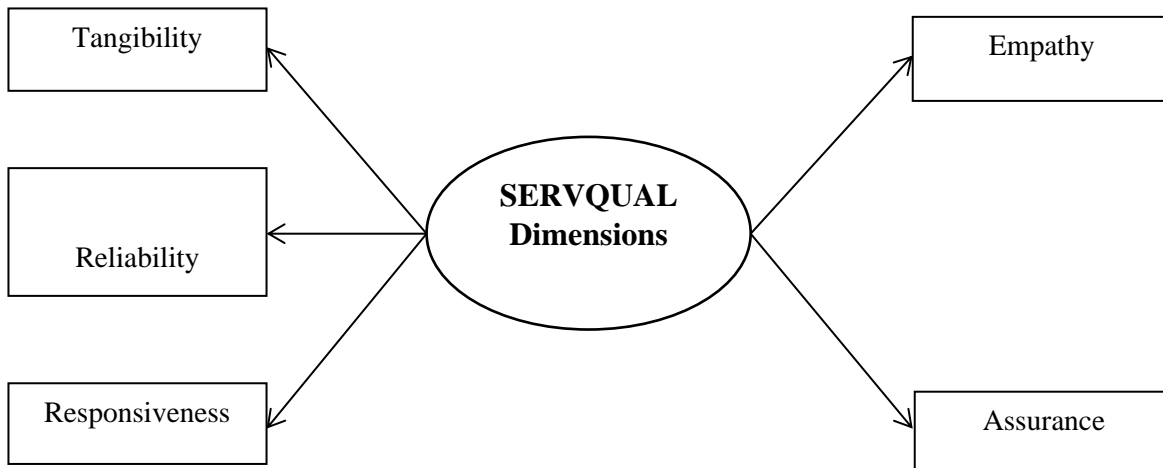
Key Words: Service Quality, Customers' Expectation, NABH Accreditation, NABH accredited hospitals, SERVQUAL, Healthcare Services

1. Introduction

Healthcare services consider the most essential sector under services industry that demand quality assurance and continuous safety measures. This is one of the fastest-growing sectors across the world in the area of business, management and commerce. In Indian economy both in terms of revenue and employment the Healthcare sector has become one of the largest sectors [3, 24].

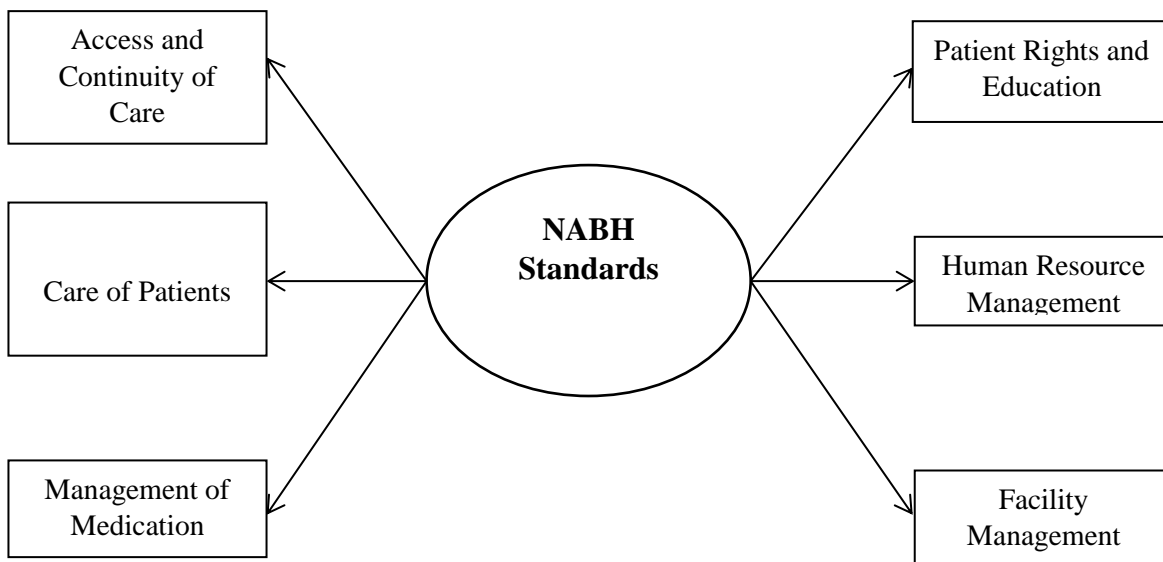
The major category of the hospital is Private hospital and Public Hospital. India being the second largest country population wise has to take care of the health of its population. Government of India believes that a healthy population is the happier one [1]. In recent years people visiting hospitals has increased tremendously due to the aging population, lifestyle, health awareness, insurance claim facilities [2, 16]. The social development in terms of increased sources of income and improvement of living standard demanding better healthcare services in India [5, 15].

In the modern days, the hospitals not only to achieve competitive advantage but also to survive in the market it is most important to focus on service quality of healthcare because patients are more conscious about quality [3]. Quality of service helps the hospitals to retain its customers. Unlike other services or products healthcare services are related to life of an individual and every individual wants the best service and would not like to compromise with the service as it involves risk of life.



[Fig. 1 shows the five dimensions of SERVQUAL to measure the quality of services]

While Services are intangible and inseparable, measuring the quality of service is not an easy task. Many models of measuring the service quality are existing [4]. The most popular and widely used Service quality model is SERVQUAL model by A. Parasuraman. The empathy of the individual attention and the care helps to service provider given to each service receiver. Tangibles the physical equipment's, ambience and appearance of the service providers. The responsiveness is the prompt response by the service provider to his or her customer's request, feedback, questions and issues [6]. Accreditation of hospital is a voluntary program, the benefits of which is immense. With the predetermined standards NABH certification assists and take care of each clinical segment right from patient admission to final discharge and post discharge check- up and medications [17]. The policies of NABH ensure clear, transparent and smooth flow of the procedures [8]. These standards ensure patient's safety and maximize patient satisfaction [19]. Moreover, IRDA has made it mandatory for private hospitals to get NABH accreditation in order to get cashless benefits. NABH accreditation gives brand recognition and improves quality standards. The better productivity among staff increases the confidence of public in the services provided by the hospital staff [18]. NABH makes the Doctors and medical staff to become proficient in the care they provide to the patient by getting updated with the medications and technology time to time.



[Fig. 2 shows the NABH Accreditation Standards]

The qualities of service provided by hospitals are assessed in 10 chapters Access, Assessment and Continuity of Care (AAC). This chapter consists of the regular assessment and reassessment of care provided to the patients admitted to the hospital regarding the access of facility and information [20]. There should be uniformity in patient care at various stages and services to all patients which includes inpatient, outpatient, ambulance service, emergency service, clinical procedures, nursing care, intensive care, anesthesia, surgical services, rehabilitation, and nutritional therapy [9,21]. Management of

Medication (MOM) - Availability, storage, prescription, administration of medications, pharmacy and usage must be done properly and safely. Medical supplies should be available when required. Patient Rights and Education (PRE) - Hospitals should adhere to their vision and mission [10]. The staff members aware and are trained to protect the rights of patients. Patients and their families have right to information regarding the care, medication costs. Hospital Infection Control (HIC) - hospital management should provide proper resources for infection control and it implements. It should have different programs which aims at reducing or eliminating risk of infection to patients, staff and visitors [22]. Patients' safety and quality improvement (PSQ) - Data from each departmental head regarding safety measures and quality should be collected, collated and analyzed [11]. Regular clinical audits must be conducted for assessing service quality and outcomes should be evaluated and further measures should be taken for improving quality Responsibilities of Management (ROM) - Management should identify the roles and responsibilities of all healthcare providers for governance. Facility Management and Safety (FMS)- that organization should have all facilities to operate and ensure safety of its staff, patients, their families and visitors [12]. It has proper medical equipment's required for care, safe water, no smoking area, safely handles hazardous measures, plans for fire and non- fire emergencies. Human Resource Management (HRM) - Human resource is major asset for any service organization [23]. Hence care must be taken while recruiting people as it is related to patient care [13, 25]. Uniform selection process should be maintained. Regular development programs, training to enhance the skill and competence of staff members. Information Management System (IMS). - a well-developed information system, data base should be maintained. Information to patients, staff, visitors, management are maintained [24]. Medical records, patient's records are maintained. Also ensures confidentiality and security of records.

2. Review of Literature

Related works have been reviewed in the area of Service Quality, NABH, Hospitals, SERVQUAL dimensions, Healthcare sectors.

Lakshmi .V.G (2015) describes that factors influencing in deciding hospital are different in public and private hospitals in terms of cost, referrals, modernized facility and reputation. Though both the hospitals have done excellent job in providing the specialized, auxiliary services through specialist and substitute doctors it was concluded that Customer's Perception on the Quality of private Hospital Services is high.

David SN, Valas S (2017) describes the history of accreditation of hospitals starting from USA and the origin of NABH, assessing chapters of NABH, benefits and process in his paper.

Indumathy, J. & Ravichandran, M.. (2017) asserted that Nurses are the frontline staff who deliver medical services to patients and NABH accreditation influences the nursing care by reducing work stress, helps in getting training and serving patients efficiently.

Thomas A, Raghunath S, Rana BK, Nagpal S (2017), asserted that CEO's of hospitals taken for research perceived that getting accreditation improves overall quality for patient extending the benefit in getting awareness on statutory compliance, staff response to emergencies, decision making with data evidence and also From the financial perspective the income per bed used has improved after accreditation.

Sambhasivan E (2018), describes the in-measuring Patient Perception of Service Quality and Satisfaction in Healthcare and Hospital Services priority of choosing hospital depends on the recommendation of other patients and Word of mouth. When patients are satisfied with the service chances of recovering is faster and better.

Shilpa. (2020), describes that while 93% of the respondents are satisfied with the facilities provided by the hospitals like parking, seating capacity, sign boards for directions, other infrastructure facilities, 82% highly expect the doctors to keep their promise and behavior of staff that instil patient's confidence.

Akdere, M., Top, M., & Tekingündüz, S. (2020). Posited that in measuring service quality through SERVPERF model reliability and responsiveness had most significant correlation and Staff being knowledgeable had highest and hospital having visually attractive physical facilities lowest level of dimension of perception of the quality of services.

3. Statement of the Problems

Among the service companies Hospitals are unique service area which involves human caring and curing. Hence quality of the healthcare provided by the hospitals must be good and needs to maintain and improve time to time. It is said that the NABH accredited hospitals provide better service. The standards of the NABH ensures that each stage at hospital is guided to enhance patient satisfaction and patient safety. The past studies on NABH accreditation have concentrated from the point of view of service provider. According to the standards of the NABH hospitals might be well equipped with all infrastructural facilities, trained staff, organized medication availability but whether patients are satisfied with the services has to be examined.

4. Objectives of the Research Study

With the consideration of research motive and statement problems the following objectives are listed:

- To identify the factors that influence the Service Quality of hospitals
- To find out the standards set by NABH for hospitals
- To analyse the level of impact of NABH standards on service quality of hospitals in Bengaluru.
- To evaluate the level of impact of NABH standards on service quality of hospitals in Tumakur.

Hypothesis Formulation

H₀₁: There is no significant level of impact of NABH Accreditation on service quality of hospitals in Bengaluru.

Or,

Mathematically, H₀₁: [the level of impact of NABH Accreditation on service quality of hospitals in Bengaluru] = 0

H₀₂: There is no significant level of impact of NABH Accreditation on service quality of hospitals in Tumakur.

Or,

Mathematically, H₀₂: [the level of impact of NABH Accreditation on service quality of hospitals in Tumakur] = 0

5. Research Methodology

Empirical research using Snowball sampling is conducted with quantitative data collected through questionnaires from both service providers and service receivers. The scope of the study was limited to the private hospitals of Bengaluru and Tumakur city. Total 550 questionnaires were distributed but 460 responds were received of which 400 were taken into consideration (300 respondents from Bengaluru district and 100 respondents from Tumakuru district).

To know the impact of the NABH standards on service quality of hospitals out of ten NABH standards six standards were identified as independent variable and five dimensions of SERVQUAL method as dependent variable. The data collected is analyzed through statistical tool.

Descriptive statistics was used to know the features of the data. Regression analysis was conducted to find out the impact of NABH standards on service quality. Correlation was done in order to examine the relation and extent of influence of independent variable on dependent variable with confidence level of 95%.

6. Limitations

The limitations of the research study were listed below:

- (i) The present research study was limited to the private hospitals of Bengaluru and Tumakur city. The respondents were identified based on the database and references from private hospitals.
- (ii) Both the online and offline sources were implemented for reaching to the ultimate respondents for data collection.
- (iii) The variation of personal experiences and opinion related to hospital services with reference to geographical constrains were neglected.

7. Results and Discussion

The analysis and interpretations are summarized in the form of results and discussion by implementing the statistical tools like Frequency Distribution, Multi Regression Analysis, ANOVA test and t-test. Frequency distribution presents the percentage of occurrence related to expert opinion regarding the significant level of impact of NABH Accreditation on service quality of hospitals in Bengaluru and Tumakuru. Multiple Regression Analysis describes the relationship between dependent and independent variables and level of impact.

7.1 Analysis Regarding the factors that influence the Service Quality of hospitals

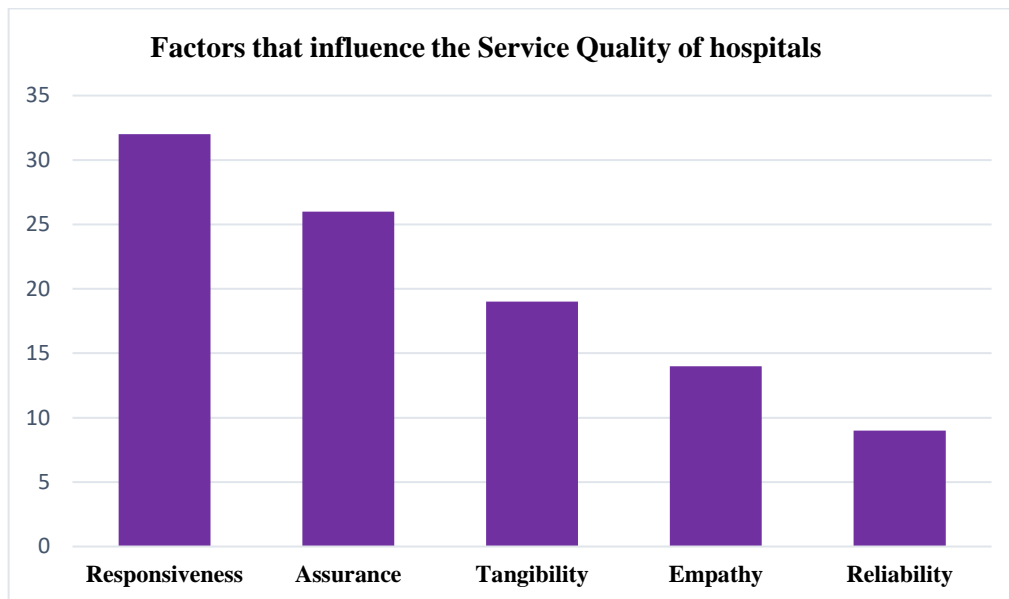
The influencing factors of maintaining services quality in hospitals are given below:

Sl. No.	Factors that influence the Service Quality of hospitals	Percentage of Occurrence
1	Responsiveness	32
2	Assurance	26
3	Tangibility	19
4	Empathy	14
5	Reliability	9

[Table.1 shows the factors that influence the Service Quality of hospitals]

The responsiveness is considered as the first preference (32%) that ensures immediate impact on service quality, 26% assurance, 19% tangibility, 14% empathy and 9% reliability. Service quality in hospitals is a critical aspect that directly influences patient satisfaction and overall healthcare outcomes. Several factors contribute to the service quality of

hospitals. The effectiveness and accuracy of medical care provided significantly impact service quality [26]. Convenient scheduling, availability of services, and ease of reaching healthcare facilities play a role.



[Graph-1 shows the factors that influence the Service Quality of hospitals]

The experts specified that the assurance build the trust among the patient and the relatives to maintain long term relationship. Tangibility is indicated the next level of preferences for better service quality. Empathy and reliability are the important factors that influence service quality.

7.2 Analysis Regarding the standards set by NABH for hospitals.

Various activities related to the standards set by NABH for hospitals were identified by the personal observation, opinion and responses through questionnaire.

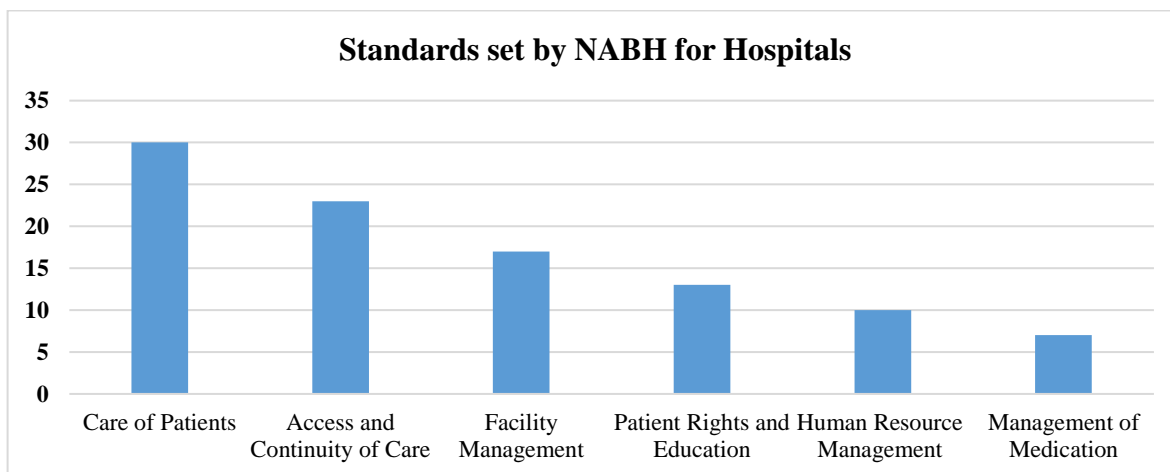
Sl. No.	Standards set by NABH for Hospitals	Percentage of Occurrence
1	Care of Patients	30
2	Access and Continuity of Care	23
3	Facility Management	17
4	Patient Rights and Education	13
5	Human Resource Management	10
6	Management of Medication	7

[Table.2 shows the standards set by NABH for Hospitals]

As per the expert opinion, Care of Patients is considered as the most preferable standards (30%) set by NABH for Hospitals. In the next level, the Access and Continuity of Care gives the priority for service standards in hospital.

The National Accreditation Board for Hospitals and Healthcare Providers (NABH) is an autonomous body in India that sets standards and benchmarks for the accreditation of healthcare organizations, including hospitals. NABH accreditation is a recognition of the high quality and safety standards maintained by healthcare providers.

Hospitals seeking NABH accreditation need to comply with these standards and undergo a rigorous assessment process. The standards are designed to ensure the quality, safety, and efficiency of healthcare services provided by accredited hospitals.



[Graph-2 shows the standards set by NABH for Hospitals]

Facility Management is the next preference as service standards for hospitals. Patient Rights and Education, Human Resource Management, and Management of Medication are the important aspects of the standards set by NABH for Hospitals.

7.3 Analysis Regarding the level of impact of NABH standards on service quality of hospitals in Bengaluru

NABH standards emphasize patient safety as a fundamental aspect of healthcare delivery. Accredited hospitals are required to implement robust systems for identifying and mitigating potential risks, reducing the occurrence of adverse events, and ensuring patient safety at all levels. Accreditation standards focus on clinical excellence, evidence-based practices, and positive patient outcomes. Hospitals are encouraged to adopt best practices in medical care, leading to improved clinical outcomes and patient satisfaction.

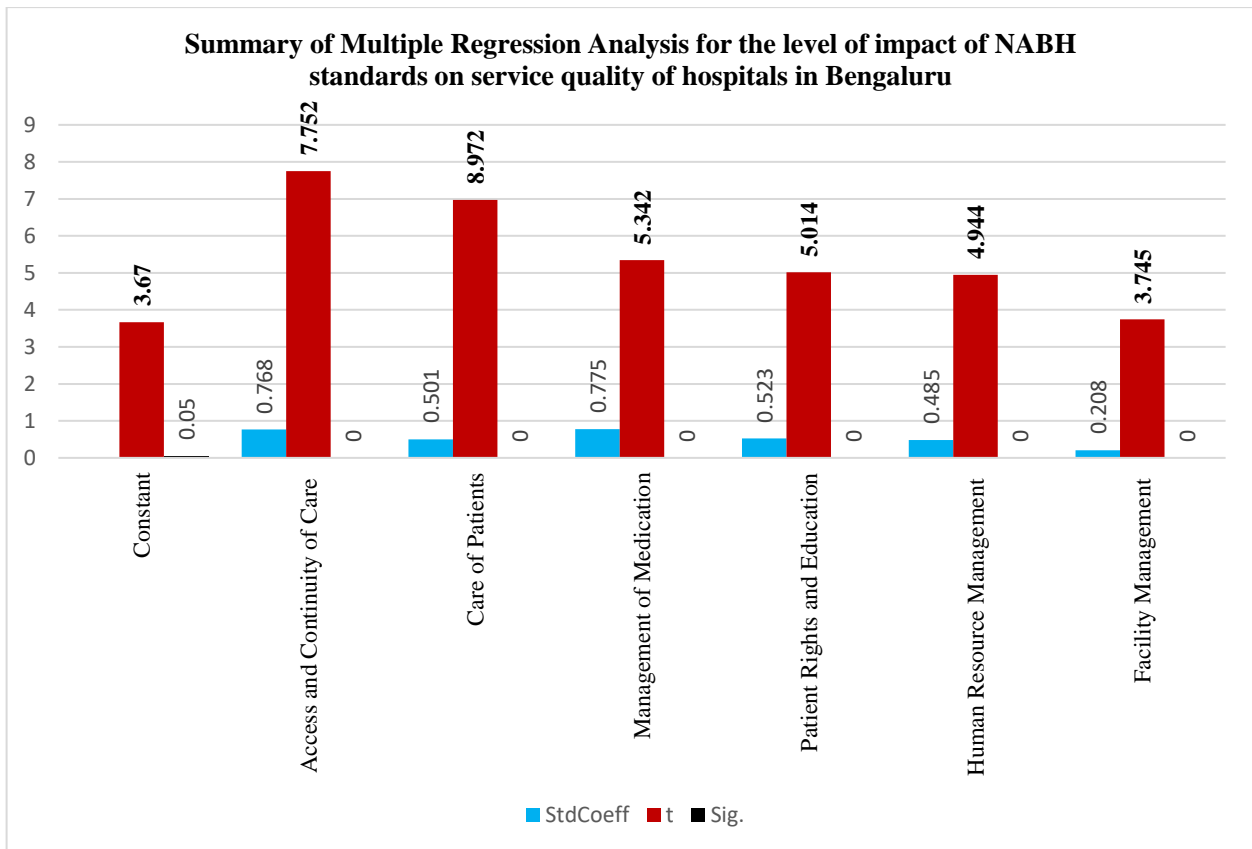
NABH standards promote the implementation of efficient and streamlined processes within healthcare organizations. Accredited hospitals are expected to have well-defined protocols and procedures, reducing errors, delays, and inefficiencies in service delivery.

The level of impact of NABH standards on service quality of hospitals in Bengaluru is analysed by implementing the multiple regression analysis with t-test and ANOVA.

DepVar: SERVQUAL Dimensions, N: 300, Multiple R: 0.461, Squared multiple R: 0.325, Adjusted squared multiple R: 0.406, Standard error of estimate: 0.736					
Summary of Multiple Regression Analysis					
NABH Standards	Coeff	Std Error	Std Coeff	t	Sig.
Constant	0.748	0.938		3.67	0.032
Access and Continuity of Care	0.485	0.033	0.768	7.752	0.000
Care of Patients	0.235	0.037	0.501	8.972	0.000
Management of Medication	0.763	0.074	0.775	5.342	0.000
Patient Rights and Education	0.437	0.062	0.523	5.014	0.000
Human Resource Management	0.365	0.061	0.485	4.944	0.000
Facility Management	0.195	0.052	0.208	3.745	0.000
Significant at 0.05 level					
ANOVA					
Source	Sum-of-Squares	df	Mean-Square	F-ratio	Sig.
Regression	183.479	8	22.935	11.908	0.000
Residual	560.521	291	1.926		
Significant at 0.05 level					

[Table.3 shows the impact of NABH standards on service quality of hospitals in Bengaluru]

The calculated p-value is 0.000 which is less than 0.05 at the level of significance that indicates the rejection of Null Hypothesis. The individual t-test report shows the value of Access and Continuity of Care (7.752), Care of Patients (8.972), Management of Medication (5.342), Patient Rights and Education (5.014), Human Resource Management (4.944), and Facility Management (3.745). The t-test results indicate the impact of independent variable on individual dependent various which are positive.



[Grapg-3 shows the impact of NABH standards on service quality of hospitals in Bengaluru]

Hypothesis Testing

The p value is less than 0.05 at the level of significance in case of t-test as well as ANOVA test. So, the null hypothesis is rejected. Rejection of Null Hypothesis (H_{01}) indicates there is a significant level of impact of NABH Accreditation on service quality of hospitals in Bengaluru.

7.4 Analysis Regarding the level of impact of NABH standards on service quality of hospitals in Tumakuru.

The level of impact of NABH standards on service quality of hospitals in Tumakuru is analysed by implementing the multiple regression analysis with t-test and ANOVA.

Accreditation standards highlight the importance of a patient-centric approach, ensuring that patients are treated with dignity, respect, and empathy. This focus on patient rights, education, and engagement contributes to an overall positive experience for patients. NABH standards require hospitals to establish mechanisms for continuous quality improvement. This involves regular monitoring, evaluation, and feedback processes to identify areas for improvement and implement corrective actions, fostering a culture of ongoing quality enhancement.

Accredited hospitals are required to comply with legal and regulatory requirements. This ensures that the healthcare facility operates within the framework of established laws, further contributing to the overall quality and legitimacy of the services provided.

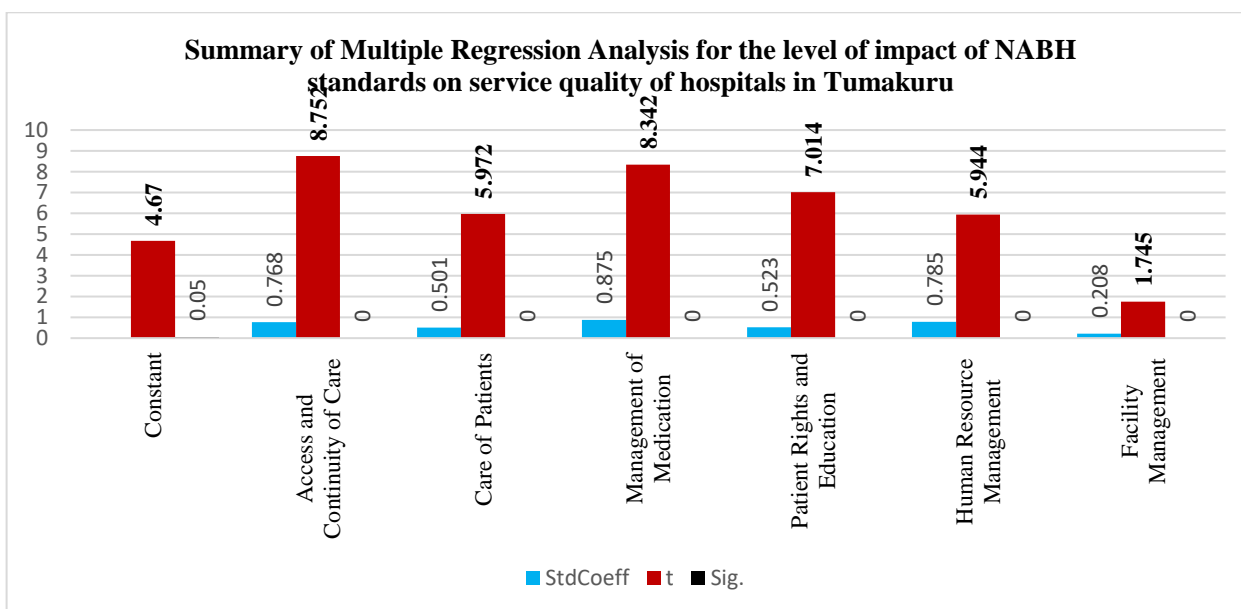
NABH standards emphasize the importance of staff competence, training, and development. Accredited hospitals invest in the professional development of their staff, ensuring that healthcare professionals are well-trained, knowledgeable, and capable of delivering high-quality care.

DepVar: SERVQUAL Dimensions, N: 100, Multiple R: 0.561, Squared multiple R: 0.325, Adjusted squared multiple R: 0.406, Standard error of estimate: 0.736					
Summary of Multiple Regression Analysis					
NABH Standards	Coeff	Std Error	Std Coeff	t	Sig.
Constant	0.748	0.938	-	4.67	0.042
Access and Continuity of Care	0.485	0.033	0.768	8.752	0.000
Care of Patients	0.235	0.037	0.501	5.972	0.000

Management of Medication	0.763	0.074	0.875	8.342	0.000
Patient Rights and Education	0.437	0.062	0.523	7.014	0.000
Human Resource Management	0.365	0.061	0.785	5.944	0.000
Facility Management	0.195	0.052	0.208	1.745	0.000
Significant at 0.05 level					
ANOVA					
Source	Sum-of-Squares	df	Mean-Square	F-ratio	Sig.
Regression	93.479	8	11.684	6.635	0.000
Residual	160.311	91	1.761		
Significant at 0.05 level					

[Table.4 shows the impact of NABH standards on service quality of hospitals in Tumakuru]

The calculated p-value is 0.000 which is less than 0.05 at the level of significance that indicates the rejection of Null Hypothesis. The individual t-test report shows the value of Access and Continuity of Care (8.752), Care of Patients (5.972), Management of Medication (8.342), Patient Rights and Education (7.014), Human Resource Management (5.944), and Facility Management (1.745). The t-test results indicate the great impact of independent variable on individual dependent various which are positive and interconnected.



[Graph. 4 shows the impact of NABH standards on service quality of hospitals in Tumakuru]

Hypothesis Testing

The p value is 0.000 in all the cases including individual t-test and ANOVA Test which were less than 0.05 at the level of significance in case of t-test as well as ANOVA test. So, the null hypothesis is rejected. Rejection of Null Hypothesis (H_{01}) indicates there is a significant level of impact of NABH Accreditation on service quality of hospitals in Tumakuru district.

8. Major Findings

Findings are the principal outcomes of the data analysis with the consideration of research objectives and the connectivity to social issues.

(a) Responsiveness is considered as the first preference that ensures immediate impact on service quality. The experts specified that the assurance build the trust among the patient and the relatives to maintain long term relationship [14]. Tangibility is indicated the next level of preferences for better service quality. Empathy and reliability are the important factors that influence service quality. Both the stakeholders in services sector like service provider and the patients are consistently agreed that responsiveness in most required aspects in health care sector.

(b) As per the expert opinion, Care of Patients is considered as the most preferable standards (30%) set by NABH for Hospitals. In the next level, the Access and Continuity of Care gives the priority for service standards in hospital. Facility Management is the next preference as service standards for hospitals [15]. Patient Rights and Education, Human Resource Management, and Management of Medication are the important aspects of the standards set by NABH for Hospitals.

(c) The calculated p-value is 0.000 which is less than 0.05 at the level of significance that indicates the rejection of Null Hypothesis. There is a significant level of impact of NABH Accreditation on service quality of hospitals in Bengaluru.

(d) The calculated p-value is 0.000 which is less than 0.05 at the level of significance that indicates the rejection of Null Hypothesis. The t-test results indicate the great impact of independent variable on individual dependent variables which are positive and interconnected. Rejection of Null Hypothesis (H_{01}) indicates there is a significant level of impact of NABH Accreditation on service quality of hospitals in Tumakuru district.

9. Conclusion

In service area customers can be retained only by providing better service quality. Quality of care has become utmost important out of other services as it involves care of life. People at the cost of life do not compromise with the quality. Hence, for all healthcare providers providing best care is supreme requirement [17]. To ensure the quality service in healthcare NABH has set standards to abide for hospitals who wish to get accreditation. As the accreditation period of NABH is not for a longer duration it necessitates the healthcare providers to keep themselves updated and become proficient in the service they are providing. NABH accreditation helps hospitals to get enumerated with insurance companies and also boosts medical tourism. Accordingly, there are benefits of NABH certification to both hospitals and stakeholders [18]. At the same time accredited hospitals must work for better quality and not only for documentation. It is suggested that all hospitals must go for accreditation to reap the benefits.

10. Suggestions

The SERVQUAL Dimensions and NABH Accreditation on service quality of hospitals are the mechanism for monitoring and controlling the healthcare services in private hospitals. But the assurance of service quality depends on so many other factors like professional experiences, experts through practices in real time situations, Research & Development, upgradation of latest technology.

Public awareness is one of the vital aspects of ensuring and verifying service quality in hospitals. The comparative analysis among the various hospital services and prices facilitates the better service with minimum costs.

Government can play the vital role of regular inspections and renewal of registration based on the quality services assurance in hospitals. Priority based health care services need to be implemented for the patient from various remote areas of the society.

11. Future Scope of the Study

NABH accreditation is recognized globally as a mark of quality in healthcare. Hospitals that meet NABH standards are more likely to attract international patients and collaborations, contributing to the global recognition of the healthcare institution. The study has limitations of time and scope restricted to Bengaluru and Tumakuru City and only six chapters of NABH standards were taken for the research. In future, researchers can do analysis with all ten standards and other method of measuring service quality extending their geographical area of study.

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