Research Article

TOTAL QUALITY MANAGEMENT IN YEMENI PUBLIC HOSPITALS: ENHANCING CUSTOMER SATISFACTION AND PATIENT-CENTERED CARE

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ABSTRACT

This study investigates the relationship between Total Quality Management (TQM) practices and customer satisfaction in Al-Thawra Hospital, the biggest Yemeni public hospital. TQM implementation has emerged as a potential solution to elevate service quality and improve patient experiences in response to industry challenges. The study employs a mixed-methods approach, using structured surveys to collect data from hospitalized patients. These surveys assess patients' perceptions of medical service quality, provider responsiveness, waiting times, hospital hygiene, and overall hospital satisfaction. The findings contribute to our comprehension of TQM's applicability and efficacy in Yemen's public hospitals by identifying key areas where TQM impacts customer satisfaction and guiding decision-making for service enhancements. The study's ultimate objective is to provide evidence-based recommendations for integrating TQM principles to promote a patient-centered approach and continuous quality improvement, enhancing the overall patient experience and outcomes within the Yemeni healthcare system.

Keywords: Total Quality Management (TQM), customer satisfaction, public hospitals, Yemen, healthcare.

INTRODUCTION

TQM is used worldwide to improve healthcare services. TQM can enhance the quality of treatment and patient-centered experiences in Yemeni state hospitals, which struggle to meet patient expectations and provide good medical services. This study will analyze Yemeni public hospitals' Total Quality Management practices and client satisfaction to improve patient-centered treatment and quality improvement. Yemen's public healthcare system struggles. Conflict and economic difficulties have made many public hospitals struggle to offer sufficient care. A 2021 UN OCHA assessment shows that 50% of Yemen's health institutions operate entirely. Problems include a shortage of trained healthcare staff, infrastructure, and energy and water interruptions. In Sana'a, 70% of public hospitals lacked sterilizing equipment, and 100% had insufficient pharmaceutical supplies.Total Quality Management involves all stakeholders in improving products, services, and processes. Healthcare requires it. TQM improves healthcare service quality, patient safety, and patient satisfaction (Crosby, 1979). TQM helps healthcare organizations overcome challenges and meet patients' evolving needs by promoting continuous improvement. When TQM prioritizes patient needs, public health care use, satisfaction, and trust increase (Al Tehewy*et al.,* 2009). Despitea limited budget, public hospitals may improve processes, staff training, and culture to provide more compassionate care. Rebuilding the health system requires patient-centered treatment and customer satisfaction. Patient-centered care is critical in Yemeni public hospitals. Patient-centered care emphasizes compassionate, flexible, and patient-specific healthcare, according to Epstein and Street Jr. (2011). TQM can help healthcare practices meet patient expectations and emphasize empathy, compassion, and participation.

Research Objectives:

1. To demonstrate the impact that quality has on the level of satisfaction experienced by the consumer.
2. To do research and come up with a list of the aspects that can help improve the overall quality of the service.

LITERATURE REVIEW

Total quality management (TQM) has recently gained popularity in healthcare organizations worldwide. TQM frameworks increase quality, efficiency, and patient happiness. This review synthesizes TQM studies in varied healthcare situations worldwide. These studies examine TQM adoption in emerging nations' healthcare systems, such as India, Yemen, Malaysia, and Iran, and in established Western nations like the US and Germany. Jordanian and Saudi TQM research is also examined. This evaluation also discusses public health TQM conceptual work. Healthcare TQM has potential advantages, but more study is needed to determine the best practices and implementations for varied cultural and organizational situations. This chapter summarizes existing knowledge and gaps for further research.

Balasubramanian (2016) discussed TQM in Indian healthcare. The researcher highlights infrastructure concerns, rising costs, doctors' resistance to change, and conventional leadership obstacles. The research uses the SERVQUAL model to propose a TQM framework to detect service quality deficiencies and satisfy patients and staff. Leadership support, quality policies, staff training, team building, understanding customer needs, standardizing processes, process improvement, and satisfaction measurement are crucial. TQM in healthcare requires linking resources, patients, and activities. The study declares that TQM can help Indian healthcare overcome barriers but recommends adapting practices to the local environment.

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In northern Indian multispecialty hospitals, Kamra *et al.* (2016) studied the variables determining patients' satisfaction with tertiary healthcare services. The researchers highlight eight critical characteristics based on survey data: accessibility/convenience, clinical needs, nursing/staff care, doctor behavior, registration/administration, infrastructure/amenities, professionalism of the doctor, and reception/OPD facilities. Afford ableness and clinical requirements came in first. T-tests revealed that satisfaction levels differed by health insurance status, gender, place of residence, level of education, and occupation. Patient priorities and satisfaction in Indian hospitals are included in the report. This study implies that patient-centered healthcare organizations can boost service and quality. The study also demonstrates how patient perspectives can enhance comprehensive quality management and healthcare quality.

Ahmed (2021) has looked at the impact of total quality management (TQM) procedures on Yemeni healthcare organizations' operational efficiency. Data from surveys given to healthcare workers revealed that effectiveness was positively improved by staff training and continual development. The results suggest using TQM techniques to boost healthcare systems in underdeveloped nations, such as continuous improvement and staff development.

(Anbori *et al.,* 2010). To assess patient loyalty and healthcare satisfaction, a survey questioned 819 private hospital patients in Sana'a, Yemen. A modified SERVQUAL questionnaire covered 30 elements in 6 categories (tangibility, reliability, responsiveness, assurance, empathy, cost). Over two-thirds were satisfied. However, only 40% would return to the same hospital. Females and those evaluating reliability, certainty, empathy, and cost higher expressed more loyalty. The study found that Yemen's private hospitals need changes to improve patient loyalty and service quality.

Hazilah (2005) has examined Malaysian public hospital personnel and discovered that although quality management practices are used, physician participation lags. Although essential elements like strategic planning, cooperation, and continuous improvement are in place, physician support lags behind other employees. Smaller district hospitals are superior in quality management compared to large state hospitals. The study reveals that quality management is well-established, although more physician support is required.

Short, P. J. (1995) shows that implementing total quality management (TQM) in hospitals concerns, including rising costs and patient discontent,are highlightedin the study. Compared to other organizations, it emphasizes the challenges hospitals encounter, such as the bureaucratic structure, adversarial management-physician relationships, conflicts between TQM and conventional quality assurance programs, and bad labor relations. Gaining physician support, integrating TQM with current programs, shifting the leadership style from authoritarian to participative, and working together with labor and management are all necessary for successful TQM. Moreover, this studyshows how to maximize the possibility of success, and it is concluded that hospital administrators must comprehend TQM's substantial commitment and evaluate necessary adjustments to structure, policies, and management before adoption. A conceptual rather than empirical approach is one limitation.

Talib *et al.,* (2011) used a literature evaluation of 15 research on TQM in hospitals to identify best practices for adopting TQM in the healthcare industry. Top management commitment, teamwork, process management, customer focus, resource management, organizational culture, continuous improvement, and training were identified to be the eight most important TQM practices based on frequency. These procedures may serve as a foundation for healthcare quality improvement. The paper concludes that effective TQM implementation has advantages, including increased performance, patient satisfaction, and lower costs. It advises healthcare administrators to implement TQM utilizing these best practices, with commitment from high management as a requirement. Some limitations include reliance on cross-sectional studies and heterogeneity in study sites that affect generalizability.

Al-Shdaifat (2015) describes a cross-sectional study that looked at the level of total quality management (TQM) adoption in Jordanian hospitals. A questionnaire was used to gather information from 332 nurses working in government, military, academic, and private institutions. Five essential TQM principles, continuous improvement, teamwork, training, top management commitment, and customer focus,were found using factor analysis accounting for 70% of the variance. The results indicated that TQM was not well adopted in Jordanian hospitals, with continuous improvement being the least applied and customer focus being the most. In comparison to the public sector, the private sector had higher implementation. More excellent TQM implementation is positively connected with the presence of a TQM department. According to the study's findings, efforts should be concentrated on creating a body to evaluate and accredit the quality of Jordan's healthcare system.

Aleisa*et al.,* (2014) examine Saudi Arabia's healthcare system's structure, TQM implementation, and obstacles. It describes the public system's primary, secondary, and tertiary care. With oil wealth, infrastructure has risen, but TQM adoption has been delayed due to centralized financing, workforce dependency on foreign medical specialists, and lack of a national health information system. TQM financing, incentives for quality management specialists, and regional health information systems to uncover local implementation challenges are suggested. Saudi Arabia has invested heavily in infrastructure and care access, yet TQM remains underdeveloped and essential for quality care. Conceptual rather than empirical approach limits.

Kaluzny *et al.,* (1992) apply TQM principles like process analysis and participatory decision-making to public health organizations. TQM improves internal procedures to improve community health outcomes, complementing the Model Standards Programme and APEX-PH protocol. Challenges include management roles, quality culture, stakeholder buy-in, benchmarking, and realistic timelines. TQM can help public health adapt to growing challenges if correctly applied.

Andrzejewski and Lagu (1997). Describe a health regulatory body's customer satisfaction survey to assess and improve supervision services. Three hundred twenty-four licensed hospitals, nursing homes, and other facilities responded 56%. Questions encompassed staff competency, discretion, responsiveness, communication, accommodations, and relevancy. Nine areas missed the 10% unhappiness threshold, including inconsistent regulatory interpretations and insufficient repair direction. Responses included rule training and report writing as improvement priorities. The survey helped regulators collaborate with providers on total quality management-based quality improvement. Restrictions include response bias and generalizability.

Mohammad Rad 2006 studied how organizational culture impacts TQM implementationin Iranian hospital administrators and staff. The areas where TQM had the most success were process management, customer focus, and leadership. Issues with human resources, performance reviews, and strategic planning also hampered it. TQM succeeded more in organic, medium-cultural companies than in mechanical, bureaucratic companies. Implementing TQM required senior management's support, employee empowerment, transparent communication, and quality control. This study discovered that integrating organizational culture with TQM ideals is necessary for improving healthcare quality.

(Moeller *et al.,* 2000) Used the EFQM Excellence Model to evaluate German hospital quality management. It looks at Germany's rising healthcare costs and fiscal problems. Healthcare businesses can assess their leadership, strategy, people, partnerships, processes, and outcomes using the EFQM Model. The study included a case study on the Max-Bürger-Center and a pilot project to implement the EFQM Model in German hospitals. The Benefits of this research study include determining organizational gaps and priorities, benchmarking performance, and encouraging employees to improve. Lin (1995), in a research study on Northern Louisiana hospital TQM survey, found that most hospitals had 1-3 years of TQM experience, driven by competition and treatment quality. Hospital leaders emphasize TQM and cooperation. Quality measures healthcare complexity. Strategic planning, contracts, and TQM are popular. Leadership values teamwork. Smaller hospitals may do TQM better and cheaper. Despite advances, top management commitment, worker involvement, and patient contentment can extend TQM. The report reveals TQM in Louisiana hospitals and emphasizes healthcare quality research.

In conclusion, this literature review provides a summary of studies on the application of total quality management in a variety of healthcare settings all over the world. According to the research that was addressed, when correctly adapted, TQM frameworks can enhance healthcare quality, efficiency, patient satisfaction, and organizational results in various nations and settings. However, there are always obstacles to overcome, such as harmonizingorganizational culture, acquiring the complete commitment of staff members, and establishing which practices are the most effective in a given setting. Even with a significant amount of promise, the study makes it abundantly evident that the successful adoption of TQM takes a significant amount of work, the backing of leadership, and adaptation. It is necessary to do further comparative research to establish the methods that will be most successful in improving the quality of healthcare in various cultures and delivery systems. This study sheds light on the possibilities and constraints of total quality management in healthcare around the globe to inform both future research and evidence-based practice. Overall, the research indicates that TQM programs that are deliberately designed and carried out locally have the potential to contribute significantly to improving healthcare quality.

RESEARCH METHODOLOGY:

1-Descriptive methodology: Describing the data gathered from secondary sources, such as books, references, and prior studies relevant to the research issue.

2-Analytical methodology: Examining the information from the questionnaire survey to arrive at the findings and suggestions of the study.

Population and Sample:

Fifty patients were randomly recruited from Al-Thawra Hospital in Sana'a, Yemen. Yemen's most prominent public hospital, Al-Thawra, serves thousands. Fifty hospital admission records over the past three months were randomly chosen. This ensured a diversified hospital patient sample. The reasonable sample size of 50 allowed statistically meaningful conclusions about Al-Thawra Hospital patients while remaining survey-administrable. Random selection reduced sample bias and improved generalizability compared to non-probability sampling approaches. One facility was sampled; therefore, it may not have represented all Yemeni public hospitals. Future research might include numerous healthcare centers from different Yemeni areas to boost national representation.

Research Variables:
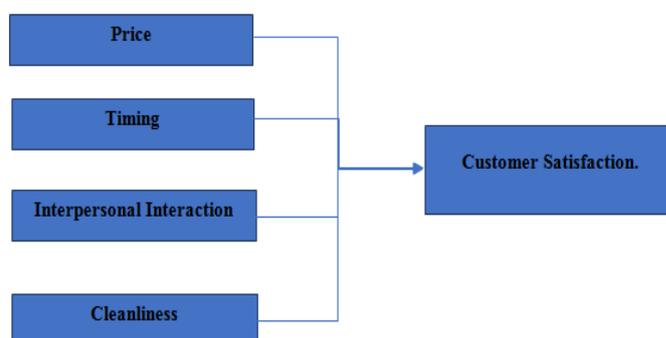
Data Analysis:

The statistical analysis findings of the survey data obtained from patients at Yemen's Al-Thawra Hospital are presented in the Data Analysis. SPSS statistical software was used for all data analysis. To achieve the study's aims, descriptive analysis was performed in SPSS. The features of the sample population were summarized and described using descriptive statistics such as frequencies, percentages, means, and standard deviations.

Table 1. Demographic information of the participants

Respondent profile	Items	Frequency	Percent	Interpretation
Gender	Male	68.0	68.4	Analysis of the respondent demographics reveals that 68% of the sample (n=34) were male respondents, while 32% (n=16) were female respondents,
	Female	32.0	31.6	
	Total	50	100.0	
Age	Less than 18 years	6	12.0	Examination of respondent age ranges shows 48% (n=24) fell between 31-50 years, while 28% (n=14) were 18-30 years, 12% (n=6) were under 18, and 12% (n=6) were over 50, indicating the most significant subset of respondents were in the 31–50-year-old demographic.
	Between 18 to 30 years	14	28.0	
	Between 31 to 50 years	24	48.0	
	Above 50 years	6	12.0	
	Total	50	100.0	
Visits	Once	16	32.0	Analysis of respondent visit frequency demonstrates that 40% (n=20) visited more than once, while 32% (n=16) visited only once, and 28% (n=14) visited regularly, signifying that most respondents visited the location more than one time.
	More than once	20	40.0	
	Regularly	14	28.0	
	Total	50	100.0	
Education	Read and write	14	28.0	Examination of the sample's educational background shows 36% (n=18) had a secondary education, while 28% (n=14) had only essential reading and writing skills or an undergraduate degree, respectively, and 8% (n=4) had a postgraduate degree, indicating most respondents had a secondary or undergraduate level education.
	Secondary	18	36.0	
	Under Graduate	14	28.0	
	Postgraduate	4	8.0	
	Total	50	100.0	
Character	Patient	38	76.0	Examination of respondents' characteristics reveals that 76% (n=38) considered themselves patients, while 24% (n=12) viewed themselves as companions, signifying that approximately three-quarters of respondents identified as patients.
	Companion	12	24.0	
	Total	50	100.0	

Table 2: Descriptive Statistics of the Price in Public Hospitals'

Items	N	Minimum	Maximum	Mean	Std. Deviation
The price of medical examinations at Al-Thawra Hospital differs from that at other hospitals.	50	1.00	4.00	1.7200	.72955
The price of medical examination at Al-Thawra Hospital is proportional to all social categories of patients.	50	1.00	4.00	1.8400	.73845
The price of diagnostic tests (laboratory tests) at Al-Thawra Hospital is appropriate and suitable.	50	1.00	4.00	1.9600	.66884
The price of hospitalization at Al-Thawra Hospital aligns with your financial capabilities.	50	1.00	5.00	2.3600	1.06445
Valid N (listwise)	50				

Table 2 analyses 50 respondents' impressions of public hospital prices across four survey topics. The poll means vary from 1.72 to 2.36 on a 5-point scale, indicating that public hospital prices are neither adequate, proportionate, or cheap. The item means to show the most significant disagreement that medical examination and diagnostic test costs are reasonable (M=1.72 to 1.96), with significantly less disagreement that hospitalization prices match financial capabilities (M=2.36). The most unanimity was on examination and test prices (SD=.67-.74), whereas hospitalization pricing was more diverse (SD=1.06). The descriptive data reveal that respondents overwhelmingly feel public hospital pricing is neither cheap nor linked across services, notably for exams and tests, while attitudes varied significantly regarding hospitalizations.

Table 3: Descriptive Statistics of the Timing in Public Hospitals'

Items	N	Minimum	Maximum	Mean	Std. Deviation
The hospital strictly adheres to the specified timing for service delivery.	50	2.00	5.00	3.8400	.54810
There is a delay in the service delivery time.	50	1.00	5.00	2.8000	1.24540
The hospital staff are well-prepared and responsive in meeting patients' requests.	50	2.00	5.00	4.0000	.69985
The service delivery time is appropriately managed, even for unusual emergency cases.	50	2.00	5.00	4.0800	.69517
Valid N (listwise)	50				

Table 3: shows descriptive data for four public hospital timing survey questions with 50 responders. The means are 2.80–4.08. Staff response (M=4.00) and emergency time management (M=4.08) are adequately managed; however, service delivery delays (M=2.80) are not. The mean for the following timing (M=3.84) shows widespread agreement. Staff responsiveness and emergency timeliness are more consistent (SD=.55-.70) than perceptions of delays (SD=1.25) and adherence to specifications (SD=.87). In conclusion, hospital employees are attentive and handle atypical emergency cases well. However, opinions on service delivery timing and delays are more mixed.

Table 4: Descriptive Statistics of the Interpersonal Interaction in Public Hospitals'

Items	N	Minimum	Maximum	Mean	Std. Deviation
The hospital cares about patients' concerns and issues	50	2.00	5.00	3.8400	.73845
Hospital staff are keen on providing the service as expected	50	2.00	5.00	3.8400	.73845
Patients feel safe and secure when dealing with hospital staff	50	1.00	5.00	3.5200	.90891
The hospital provides medical service to all patients fairly	50	1.00	5.00	4.0800	1.02698
Valid N (listwise)	50				

Table 4: shows descriptive data for four survey items on public hospital interpersonal contact from 50 respondents. The means vary from 3.52 to 4.08 on a 5-point scale, showing that hospital employees treat patients well. Fair medical service provision (M=4.08) is the most agreeable, followed by staff attention (M=3.84), staff caring for patient concerns (M=3.84), and patients feeling comfortable with staff (M=3.52). The most consensus was around fair service provision (SD=.74) and staff attention (SD=.74), whereas opinions of care and safety showed more significant variation (SD=.91-1.03). Public hospital employees give attentive service, solve patient complaints, and treat patients fairly, but attitudes differ more about staff providing care and patients feeling safe.

Table 5: Descriptive Statistics of the Cleanliness in Public Hospitals'

Items	N	Minimum	Maximum	Mean	Std. Deviation
The hospital's cleanliness meets my expectations	50	2.00	5.00	3.6800	.74066
Sanitization within the hospital facilities is done regularly	50	2.00	5.00	3.4800	.76238
Waste and used instruments are disposed of promptly	50	1.00	5.00	3.4000	.85714
I trust the cleanliness of the equipment used for patients after each use	50	1.00	4.00	3.2400	.82214
Valid N (listwise)	50				

Table 5: provides descriptive data for four survey questions that examine views of cleanliness and sanitization in public hospitals, with fifty respondents serving as the sample size. The fact that the means vary from 3.24 to 3.68 on a scale of 5 points demonstrates widespread consensus that the hospital's cleaning and sanitation procedures live up to expectations. The degree of agreement on the cleanliness of the hospital is the highest (M = 3.68), followed by the frequency with which it is sanitized (M = 3.48), the speed with which trash is disposed of (M = 3.40), and the cleanliness of patient equipment (M = 3.24). There was some variety in replies, as shown by standard deviations ranging from .74 to .86, with the most significant amount of agreement about the cleanliness of hospitals (SD =.74) and the most significant amount of disagreement regarding the cleanliness of equipment (SD =.82). The majority of respondents believe that the level of cleanliness and sanitization at the hospital is adequate; nevertheless, opinions differ significantly on the cleanliness of the equipment shared by patients and the promptness with which trash is removed.

Table 6: Descriptive Statistics of the Employee Satisfaction in Public Hospitals'

Items	N	Minimum	Maximum	Mean	Std. Deviation
The hospital encourages patients' feedback and suggestions	50	1.00	5.00	3.8400	1.09470
Provided clear and sufficient information about your medical condition and treatment	50	1.00	5.00	3.4000	.98974
The service provided satisfies the needs and desires of patients	50	1.00	5.00	3.6800	1.01900
I recommended this hospital to others seeking medical care	50	1.00	5.00	3.2400	1.11685
Valid N (listwise)	50				

This table shows descriptive data for four survey topics on public hospital patient care quality, with 50 respondents. Hospital service quality is good, with values ranging from 3.24 to 3.84 on a 5-point scale. Encourage patient input (M=3.84), serve patient needs (M=3.68), provide clear medical information (M=3.40), and suggest the hospital (M=3.24) have the most significant agreement. The most excellent agreement was on encouraging feedback (SD=.99), and the most disagreed with recommending the hospital (SD=1.12). Public hospitals promote patient involvement, meet needs, and give enough medical information, although opinions differ on endorsing them.

DISCUSSION

The chapter on data analysis provides valuable insights into patient perceptions of service quality and satisfaction at Al-Thawra, the largest public hospital in Yemen. Utilizing descriptive statistics permits a comprehensive examination of the demographic composition of the sample. The frequencies and percentages reveal a cross-section of typical patients biased towards middle-aged, moderately educated, male recurrent visitors. This provides essential context for the survey results. Additional descriptive analysis of Likert scale survey data permits meaningful comparisons of means across variables of interest. For instance, there was substantial disagreement regarding the affordability of medical examination and test expenses, whereas there was more significant variation regarding the affordability of hospitalization. Similarly, although the responsiveness of the staff was rated highly, the perceptions of service delays were divided. Using patients' perspectives, these nuanced findings permit the identification of specific aspects of treatment that need development.

The data analysis employs descriptive statistical techniques pertinent to the research objectives and survey methodology. However, the reliance on a single public facility and the relatively small sample size suggest caution when extrapolating trends to Yemen's public healthcare system. The researcher appropriately acknowledges this limitation. There are also additional opportunities for inferential analysis, including using t-tests, ANOVA, correlation, and regression to evaluate the relationships between quality perceptions, satisfaction, and demographic factors.

Overall, the quantitative analysis provides concrete insights into patient experiences that can inform initiatives for quality development based on real-world evidence. In conjunction with the literature review, it provides a solid foundation for the conclusions and recommendations of the study. Through its meticulous descriptive analysis, the chapter contributes to a better comprehension of public hospital care in Yemen and TQM-based avenues for enhancing quality. It lays the groundwork for translating research findings into actionable steps to enhance patient-centered care.

CONCLUSION

This study substantially contributes to our understanding of overall quality management practices and how such practices are related to patient satisfaction at Yemen's most significant public hospital (Al-Thawra). The most important findings from the study highlight areas where TQM shows potential in enhancing experiences and areas where there are continuing issues shown in unhappiness with particular parts of service. According to the research findings, distinct prioritiesmust be optimized within TQM procedures to promote patient-centeredness, quality, and safety. Even though it only looked at one hospital, the study offers significant empirical insights into the Yemeni healthcare setting, which has received very little previous research. It supports patient-centered care as a national priority and includes evidence-based advice for changing TQM techniques to suit the requirements of patients better. Additionally, it offers guidelines for continuous improvement in healthcare. The findings of this study have significance for hospitals worldwide that are working to improve patient care experiences and outcomes by using TQM concepts. In further research, it would be beneficial to build on this study by extending the scope of the investigation to include more hospitals and locations in Yemen.

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