Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future

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ABSTRACT

Healthcare industry in developing countries has recorded high growth rate in the recent years. This study seeks to identify the most critical factors in hospitals related to service quality that will ensure survival and success in the future. This study was conducted using the data from the consumers who received services from 40 different private hospitals in Hyderabad, India. Tangibility, reliability, responsiveness, assurance and empathy (Service Quality dimensions), patient satisfaction and loyalty to the hospital were the variables considered for this study. A path analysis was done on AMOS V20 in order to compute path coefficients, direct and indirect effects of the variables on patient's satisfaction and also loyalty to the hospital. We found that reliability and responsiveness (not empathy, tangibility, and assurance) impact patients' satisfaction. Patient's satisfaction is directly related to patients' loyalty to the hospital. Marital status and age have no impact on the regression weights of the variables analyzed; however, it was found that to some extent gender does.

1. Introduction

The delivery of high-quality service is the key to success in service industries. In the present era of intense competition, monitoring and improving service quality is highly essential for developing efficiency and business volume (Anderson and Zeithamal, 1984; Babakus and Boller, 1992; and Garvin, 1983). In both manufacturing and service industries, quality improvement is the principal factor that impacts consumer satisfaction and consumer's purchase intention (Oliver, 1980). Several scholars agree that the quality is critical to consumer's satisfaction (Omar and Schiffman, 1995; Gremler et al., 2001; and Radwin, 2000). Several business organizations focus on service-quality issues to drive customer's satisfaction above the rest (Kumar et al., 2008). The healthcare industry in developing countries like India, has recorded a relatively high growth rate with a high demand for its services from both foreign and local patients; despite constraints such as inadequate amount of hospital beds and shortage of highly qualified doctors. But, the growth could be sustained throughout several years that lie ahead (Burns, 2014). Delivery of high-quality service and building patient loyalty are considered to be critical anchors (Anderson and Zeithamal, 1984). The specific dimensions of quality service that contributes substantially to patient's satisfaction need to be identified. Thus, hospital management can prioritize better their focus on such specific factors, despite the heavy reliance of patients on physicians who first treat them and also refers them to certain a hospital.

The overall Indian healthcare market is worth US$65 billion (Burns, 2014). Healthcare industry in India is a source of employment and revenue with strong domestic demand, corporatization of healthcare, rise in innovation, influx of medical tourism, and government pushes. India spends just 4% of its GDP on healthcare, while USA spends 17% of its GDP, while the share of government national healthcare expenditure is 50% in USA compared to a little more than 25% in India (Burns, 2014). On the other hand, India has world-class medical facilities attracting a large number of medical tourists who get a high-quality medical care at the cost of just a fraction of what it costs in USA. In India, only middle and upper classes have access to quality healthcare. Healthcare expenditure is a major cause of household debt in India, since many patients borrow money or sell off their assets to meet their healthcare expenditure, as the majority of the people do not have medical insurance.

The hospital industry has become quite competitive in recent times (Raju and Lonial, 2002). Hospitals are interested in identifying the most critical factors in hospitals that, if managed well, will ensure survival and success in the future. For this to happen, the strategic factors need to be identified. Some hospitals are also taking efforts to promote their business overseas in the 'medical tourism' segment. They

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could prioritize areas related to quality management and should determine them most astutely. This euphoria and excitement about healthcare industry is worth examining in the context of service quality. Particularly, after the competitive space becomes crowded and rules of the game get tougher in the sector, quality matters a lot for succeeding in the long run.

The widely accepted service quality (SERVQUAL) dimensions — tangibility, empathy, reliability, responsiveness, and assurance — could be studied to understand their impact on the important quality outcomes such as patient's satisfaction, particularly in the developing countries' context, where government offers subsidies on healthcare costs. Patients' over-reliance on physicians for crucial choices might also influence the importance of quality dimensions in developing countries such as India. Another defining character of these developing countries is that healthcare costs are heavily subsidized. Importantly, it deserves a mention here that what with low literacy and what with concomitant low awareness, there is information asymmetry. This potentially makes the patients depend on the referring physician's advice on choice of the service provider. The extant literature does not address this area in the context of populous developing countries described in the foregoing lines. We seek to fill this gap in the literature. Besides, there was no well-designed study examining the impact of each of SERVQUAL dimensions on patient's satisfaction in a developing country like India particularly when the healthcare costs are heavily subsidized by governments, and moreover, patients relying heavily on referring physicians for advice on the choice of service provider. Our research will determine those most important quality dimensions, applicable to developing countries and physician-reliant patients. In nutshell, we analyze the impact of Service Quality variables on the consumer satisfaction among patients in a fast growing developing country. This study uncovers those critical factors, which can be useful for service organizations in developing countries in general.

2. Literature review and hypothesis

The foundation for the SERVQUAL scale is the gap model proposed by Parasuraman, Zeithaml and Berry (1985, 1988). SERVQUAL concept has been criticized and discussed extensively. For instance, Cronin and Taylor (1992, 1994) developed SERVPERF, a service-based performance measure, highlighting the weaknesses of SERVQUAL model developed by Parasuraman et al. (1988, 1994). They questioned the conceptual basis of the SERVQUAL scale and opined that expectation (E) component of SERVQUAL be disregarded and instead performance (P) component alone be used. Therefore, they proposed 'SERVPERF' scale with empirical evidence across four industries.

Service quality is not a monolithic concept and so it leans on several dimensions, each of which varies in importance with regard to overall service quality, and their impact on patient's satisfaction (Saunders, 2008). World Health Organization (WHO, 2006) recommends that a health system should make improvements in six dimensions. They are: *(1)* effectiveness (adherence to evidence base and results in improved health outcome), *(2)* efficiency (maximize resource use and avoid waste), *(3)* accessibility (timely and geographically reasonable), *(4)* acceptance/patient-centered (takes into account individual preferences), *(5)* equitability (does not vary in quality due to factors such as gender and socioeconomic status) and *(6)* safety (minimizes risk and harm); in order to improve the quality of care. This WHO framework is general and relates more to public delivery system, but not the managerial aspects of quality service.

Since our research centers exclusively on these service quality dimensions, an elaborated discussion is presented as literature review.

Quality service has emerged as an important determinant of customer satisfaction and word-of-mouth communication (Lang, 2011). Regarding service quality dimensions, there are two concepts: (1) Nordic school view and (2) American school view. On one side, Nordic school view (Grönroos, 2000), holds that quality service has two dimensions: (a) functional quality (process) — usefulness directly

relevant to the consumer, and (b) technical quality (core) – the factor that brings about functional quality (Grönroos, 2000).

On the other side American school view holds that there are five dimensions of quality service. They are: (1) tangibility (physical facilities, equipment, and appearance of personnel); (2) reliability (ability to perform the promised service dependably and accurately); (3) responsiveness (willingness to help customers and provide prompt service); (4) assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence); and, (5) empathy (caring and individualized attention the firm provides to its customers). These were first propounded by Parasuraman et al. (1985, 1988). In a way, these five dimensions constitute a quality system that will potentially improve functional quality and service performance.

The patients in developing countries tend to depend heavily on recommendations of the treating physician. A McKinsey study (Grote et al., 2007) also demonstrates the importance of the physician's decision even in a developed country. To determine factors influencing hospital selection, McKinsey surveyed more than 2000 US patients with commercial insurance or Medicaid in 2007; the patients surveyed were asked to allocate 100 points according to the importance they would give to each of them. The four factors were: (a) patient experience, (b) hospital reputation, (c) physician's decision, and (d) location; on an average, they gave 41 points to patient's experience, 21 points to physician's decision, 20 points to reputation of the hospital, and 18 points to location. Notably, physician's decision is the second most important factor.

Isik et al. (2011) studied the applicability of SERVQUAL dimensions to healthcare service through structural equation modeling analysis. Their research suggests that the SERVQUAL is a useful measuring instrument in assessing service quality in hospitals. Through the elements of quality service improvements on each dimension could be identified. For instance, quality service and customer satisfaction are relevant to achieve improved organizational performance (Isik et.al, 2011). Some of the notable studies in the area of quality service with a focus on quality tenets in the hospitals are summarized in Table 1.

A brief discussion on the concepts of patient's satisfaction and patient's loyalty to the hospital, and its implications is presented in the following section.

2.1. Consumer's satisfaction

Consumer's satisfaction is the key factor that drives when the performance of the product or service exceeds expectations. Satisfaction is a post-purchase state of consumer's mind that mirrors how much the consumer likes or dislikes the service after experiencing it (Woodside et al., 1989). In the extant literature, there are two conceptualizations of consumer satisfaction: (a) transaction-specific satisfaction, and (b) cumulative satisfaction (Woodside et al., 1989). The former relates to the one that results from a single purchase of a product or service and its use. The latter relates to the overall satisfaction with a product or service after several purchases and their experience over time, which leads to consumer loyalty. Another definition states that consumer satisfaction is consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product or service after consumption (Tse and Peter, 1988). Consumer's satisfaction may be a guide for monitoring and improving the current and potential performance of businesses (Zairi, 2000). Customer's satisfaction, leads to customer's loyalty, recommendation and repeat purchase (Wilson et al., 2008).

2.2. Patient's loyalty to hospital

The consumer who returns several times to buy the service from the same firm is a loyal customer. But customer defection is not the opposite of customer loyalty and vice versa for several reasons like availability or lack of choice. According to Levesque and McDougall (1993), approximately half of the consumers stay with the firm even

Table 1

Related Studies on Impact of Service Quality on Customer satisfaction.

Author and Year	Purpose / Objective	Method	Findings
Prabhakar (2014). Service Quality in Healthcare Sector: An Exploratory Study on Hospitals. *IUP Journal Of Marketing Management*, 13(1), 7–28.	To measure quality of service in select hospitals in Krishna District of Andhra Pradesh, India and diagnose gaps	Using Parasuraman et al. SERVQUAL model (1988) that measures service quality.	Demographic factors and socioeconomic status have a deep impact on patients' satisfaction.
Makarem and Al-Amin (2014). Beyond the service process: The effects of organizational and market factors on customer perceptions of health care services. *Journal of Service Research*, 17(4), 399–414.	A new model to gauge organizational and market factors that impact customer's experience both directly and indirectly through their influence on the service process.	Based on the patient ratings from the Hospital Consumer Assessment of Healthcare Providers and Systems and the American Hospital Association Annual Survey was employed to determine organizational and market factors.	Physician ownership, specialization, and market competition significantly affect patient ratings. Dimensions of the service process act as a mediator between organizational and market factors and patient ratings.
Wongrukmit, P., and Thawesaengskulthai, N. (2014). Hospital service quality preferences among culture diversity. *Total Quality Management & Business Excellence*, 25(7/8), 908–922.	A comparative analysis to show the differences in the perceived service quality among patients from different nationalities (Japan, Myanmar, Arabic States, and Thailand).	Both a modified SERVQUAL scale and the Kano model to categorize and prioritize a hospital's service quality attributes. Variance analysis to differentiate market segmentation based on nationality,	The level of quality attributes was different for different nationalities.
Chia-Wen et al. (2013). Configural algorithms of patient satisfaction, participation in diagnostics, and treatment decisions' influences on hospital loyalty. *Journal Of Services Marketing*, 27(2), 91–103.	To investigate the various sufficiency conditions influencing patient loyalty to a hospital.	645 self-administered questionnaires from patients of all categories in a major medical center in Taiwan and applied fuzzy set qualitative comparative analysis (fs/QCA) to it.	Patient satisfaction, patient participation in the process of diagnosis, and patient participation in treatment decision-making combined together suffice for high patient loyalty to the hospital;
Bohm (2013). Relating Patient Satisfaction to Insurance Coverage: A Comparison of Market Based and Government Sponsored Health Care. *Academy Of Business Research Journal*, 26–16.	To investigate if patient satisfaction with healthcare varies by different type of insurance coverage held by the patient. Also to determine whether overall satisfaction is higher within market-based health care systems as found in the United States.	8700 participants (61% American, 39% Canadian) information, which they made available with information. A comparison between Medicare and, Medicaid, employer based insurance, and the National Health Insurance of Canada.	Patient satisfaction varied greatly with the type of insurance they held. Also, American patients with employer-based insurance report higher levels of satisfaction as compared to the national Canadian system.
Lee (2012). The impact of high-performance work systems in the health-care industry: employee reactions, service quality, customer satisfaction, and customer loyalty. *Service Industries Journal*, 32(1), 17–36.	To study the impact of high-performance work systems (HPWS) on employee attitude, service quality, customer satisfaction, and customer loyalty in various healthcare organizations.	The research model was tested using structural equation modeling for hypotheses using data from 196 pairs of employee–customer respondents spread among four selected hospitals with more than 500 beds.	Hospitals can indeed improve customer satisfaction and loyalty through efficient operations, employee engagement, and better service quality.
Hodge nd Wolosin (2012). Addressing Older Adults' Spiritual Needs in Health Care Settings: An Analysis of Inpatient Hospital Satisfaction Data. *Journal Of Social Service Research*, 38(2), 187–198.	To determine the association between a patient's spiritual needs and their overall perception of satisfaction with care.	A sample of 4,112 adults aged 65 years and older and who were consecutively discharged during a 12-month period (July 2007 through June 2008) from hospitals in three geographically diverse regions of the US: California, Texas, and New England.	Highlights the importance of addressing a patient's spiritual needs by conducting proper and efficient spiritual assessment.
Xiaoyun, H., Kwortnik Jr., R. J., and Chunxiao, W. (2008). Service Loyalty: An Integrative Model and Examination across Service Contexts. *Journal Of Service Research*, 11(1), 22–42.	To develop a model that links dimensions of customer loyalty such as cognitive, affective, intention, and behavioral with a cohesive and sound system of determinants.	The data comprises 3500 customers across China from various services such as airlines, banks, beauty salons, hospitals, hotels, mobile telephone.	This research added a new aspect of customer loyalty to the literature that of —commercial friendship. The key loyalty factors are customer satisfaction, commitment, service fairness, service quality, trust.
Raju and Lonial (2001). The impact of quality context and market orientation on organizational performance in a service environment. *Journal Of Service Research*, 4(2), 140–154.	To investigate quality context, market orientation and their effect on organization performance.	Survey date of Top executives from 740 hospitals in five-state region of central US. The relationships between constructs with organizational performance within the hospital industry using structural equations modeling.	Market orientation and quality context significantly influence organizational performance.
Dubé, and Morgan (1998). Capturing the dynamics of in-process consumption emotions and satisfaction in extended service transactions. *International Journal Of Research In Marketing*, 15(4), 309–320.	To examine the premise that trends in consumption emotions (increasing positive and decreasing negative) and satisfaction (under high in-process positive emotions only) could be modeled with statistical confidence and the model showed a good ability to predict retrospective global judgments.	Broad range of patients (93: 49 male, 44 female) who reported in-process positive and negative satisfaction and emotions during their entire stay (median length of stay of 5 days) and global retrospective judgments of the same variables upon departure. Trends were tested using a dynamic nonlinear model	Positive as well as negative emotions were not impacted by decisions based on in-process satisfaction. There were individual (gender) and contextual (health status) factors influencing different trends in emotions. A sharp increasing trend in +ve emotions was noticed for men as compared to women.

when their problem is not solved with firm's service. A variety of reasons such as high switching costs, non-availability of truly differentiated alternatives, choice constrained by the location, money and time, and inertia or habit make a customer stay with the firm (Bitner, 1990; Ennew and Binks, 1996).

Chahal (2000) argues that patient's loyalty can be measured on three components (*tri*-component model); they are: (a) using the providers again for the same treatment (UPAS), (b) using the providers again for different treatments (UPAD), and (c) referring the providers to others (RPO). This research shows that service quality, which is measured on these three components, can predict patient loyalty and demonstrates how to measure the service quality on three constructs, namely, (1) physician's performance, (2) nursing performance, and (3) operational quality. This is premised more on the performance of individuals but not the total system of delivery. SERVQUAL that assesses a delivery system better suits the purpose of our paper.

2.3. Service quality and consumer satisfaction

Methodologically, the SERVPERF framework marked an improvement over the SERVQUAL (Jain and Gupta, 2004). However, SERVQUAL framework has been used to assess service quality in a variety of sectors such as banking (Ehigie, 2006; Paul et al., 2016), hospitality (Nadiri and Hussain, 2005), internet marketing (Long and McMellon, 2004), insurance (Tsoukatos and Rand, 2006), and restaurants (Qin et al., 2010) as measuring performance could be difficult to implement in many organizations due to inherent and structural problems relating to consent for collecting sensitive data etc.

Smith and Swinehart (2001) observed a strong relationship between quality of product or service and satisfaction of consumers. They found that consumer's perception of the quality is an important variable determining the satisfaction level. Similarly, Caruana (2002), based on the study of customers of Malta's banks, found that customer's satisfaction plays a mediating role in service quality driving customer loyalty; importantly, service quality is an important driver of customer satisfaction which explains 53% of variance. Similarly, Yongyui (2003) confirmed the direct relation between each of the five dimensions of service quality and bank's reputation; bank's reputation, in turn, impacts customers' repeated purchases and loyalty.

Anbori et al. (2010) examined the relationship of quality service dimensions to loyalty and showed that empathy and assurance dimensions had strong influence on patient's willingness to return to the hospital. Kuo et al. (2009) also found that quality service impacts customer's satisfaction. Similarly, a positive relation between quality service and customer's satisfaction was confirmed by Hsiu-Yuan Hu et al. (2011). Perceived quality service drives satisfaction, according to the study of Lee et al. (2000); Murray and Howat, (2002); similarly, according to the research by Ladhari, (2009), perceived quality service has direct and indirect effects on behavioral intentions.

Kitapci et al. (2014) has tested the framework of Parasuraman et al.'s SERVQUAL variables using the data collected from 369 patients and found that empathy and assurance dimensions are positively related to customer's satisfaction but not others; customer's satisfaction has a significant effect on repurchase intention and word-of-mouth communication. Contrary to general trend in research findings on quality service dimension and patient loyalty, Hsiu-Yuan Hu et al. (2011) has shown that the essential service attributes do not relate to customer's satisfaction in Taiwan's medical services; similarly, customer loyalty does not depend on customer satisfaction and customer complaints since barriers set up do not allow the customer to change the service provider. Itumalla (2012), based on the data from 210 patients of a private hospital in Hyderabad, in India, estimated a customer satisfaction index score and the values were computed as 75.87 (out of a maximum of 100). The factors on which the index was computed are: (1) reliability, (2) knowledge, (3) attitude, (4) communication, (5) availability, (6) safety, (7) trustworthiness, (8) consistency, (9) equipment and facilities, and (10) promptness. The factors, which got relatively low scores indicating the necessity of immediate improvement, are: (1) communication, (2) promptness, and (3) availability. The above-mentioned study did not use the dimensions of SERVQUAL and so could not establish the contribution of each of the dimensions to the overall quality service nor the impact of quality service on satisfaction. Further, there was no attempt made to understand how age, gender or marital status of patients influences the ratings.

In developing countries like India, the government pays the healthcare costs of poor patients in the below-the-poverty (BPL) categories in public hospitals and approved private hospitals; Secondly, the doctor who first treats them and who is generally affiliated to a private corporate hospital chooses the hospital for the patient. As our main purpose of this study is to examine the factors that affect patient satisfaction and loyalty in hospitals in a developing country, we believe that SERVQUAL dimensions are more relevant than that of SERVPERF constructs.

So this research has to establish which of the SERVQUAL dimensions most impact the patient satisfaction and the mediating relationship of the latter with the patient's loyalty to hospital.

Thus, we derive our first hypothesis.

Hypothesis 1. All the SERVQUAL dimensions equally impact the patient satisfaction in a populous developing country.

2.4. Patient satisfaction and age

Patients of older age are more satisfied with healthcare service than those of younger age (Thi et al., 2002; Jenkinson et al., 2002). Venn and Fone (2005) reported that patient satisfaction vary with age, gender, employment status and marital status. Brown et al. (2008) found older, male, less educated and healthier patients showed the tendency to rate the care provided by the hospital higher than female, younger, more educated and comparatively sicker patients. Shabbir (2010) found that demographic variables such as education, income, gender and age have a significant impact on patient satisfaction. On the other hand, Baldwin and Sohal (2003) found no significant effect of age, gender and location as moderating variables between quality and satisfaction. Tucker and Adams (2001) had also shown that the demographic variables such as age, gender, race, education, and marital status have no moderating effect on satisfaction.

Based on an interview-based study on 440 patients, Vidhya and Rajkumar (2014), show that young patients look for service quality level higher than what they receive at present. Notably, persons of 46–55 years of age are more satisfied with service quality than persons of other age groups. Overall, the findings of the study indicate that older, married, less educated persons rate the service quality of the hospitals higher than younger, single and more educated patients. However, there are no studies on the healthcare services that particularly show the relationship of age, gender and marital status of the patients with their evaluation of satisfaction with services. Therefore, we formulate a second hypothesis.

Hypothesis 2. Age, Gender, and Marital Status impact the evaluations of the patients in a typical developing country.

2.5. Patient satisfaction and loyalty

The healthcare industry in populous developing countries, like India, is on the growth stage as seen from the way a huge number of hospital construction projects are under construction. Patient satisfaction and loyalty are the two strategic constructs that have to be monitored and kept at a higher pedestal, so that success is sustained throughout the years. The hospitals should understand the link between specific dimensions of quality healthcare service, patient satisfaction, and patient loyalty. Critical dimensions have to be identified so that they will be focused on. But the distinct characteristics of the healthcare industry taken for the study are: (1) heavily depending on the recommendations of a treating physician on the patient's choice of private corporate hospital, and (2) government's reimbursement of healthcare costs to BPL patients who constitute a significant proportion of patients being treated at private corporate hospitals. A hospital's principal goal is building patient loyalty; does it relate to the level of patient satisfaction? What is the role of patient satisfaction in bringing about customer loyalty? Based on these questions we arrive at the third hypothesis.

Hypothesis 3. Patient satisfaction has a mediating role in increasing the patient loyalty.

3. Research methodology and measures

3.1. Sample

The study was conducted on 180 respondents who have undergone treatments in 40 different hospitals in Hyderabad during 2014. The

Table 2
Research Instrument and Chronbach's alpha of measures used.

Dimension/Construct	Items used	Chronbach's Alpha
1. Tangibility	1. The hospital has up-do-date equipment. 2. Hospital's physical facilities are visually appealing. 3. Hospital's employees appear neat.	.701
2. Reliability	1. The hospital provides its services to the patients at the time it promises to do so. 2. When patients have problems, hospital's employees are sympathetic and reassuring. 3. The hospital is accurate in its billing.	.710
3. Responsiveness	1. Hospital employees tell patients exactly when services will be performed. 2. Patients receive prompt service from the employees. 3. Hospital employees are always willing to help patients.	.740
4. Assurance	1. Patients feel safe in their interactions with employees. 2. Employees are knowledgeable. 3. Employees are polite. 4. Employees get adequate support from the management to do their jobs well.	.768
5. Empathy	1. The hospital's employees give patients personal attention. 2. The hospital has patients' best interests at heart.	.721
6. Patient Satisfaction	1. I am satisfied with the medical services of the hospital. 2. The medical treatments are successful. 3. The medical services have fulfilled my requirements.	.820
7. Patient Loyalty	1. I will prefer to use the services of this hospital because I am satisfied and acquainted with the hospital. 2. I will use this hospital in spite of competitors' deals. 3. I would prefer to use additional products and services (such as specialist advices, treatments, diagnosis and other medical services) in this hospital. 4. I prefer this hospital to others.	.812

sample comprises 55% men, and 45% women. The respondents consist of 72% married persons and 28% singles. The sample comprises 36% young persons, 42% middle-aged persons, and 22% old persons. Respondents were selected on a random basis. For example, from each hospital, only 4–5 patients (who received the service) were selected; to ensure randomization, only the first –encountered patients with odd identification numbers only were chosen in one hospital but in the next hospital, only those with even numbers selected.

3.2. Research instrument

SERVQUAL scale was slightly modified to suit local perceptions. Items of each dimension of modified SERVQUAL are in Table 2. The items were modified in accordance with the idea of the industry veterans. For example, under tangibility, the item relating to information on products and packages are not important since the costs are reimbursed and so item is deleted; similarly, atmosphere and décor were not found relevant since other items like visually appealing physical facilities and neatness of employees are found to be adequate to measure the tangibility dimension. Similar treatment was given to other items also if they were found to be irrelevant and redundant.

Path analysis was run with SPSS AMOS 20. Five dimensions of service quality, namely, tangibility, responsiveness, reliability, assurance, and empathy were taken as exogenous variables while patient satisfaction was taken as an endogenous variable. Patient's Loyalty to Hospital was taken as the second endogenous variable.

3.3. Background of the study location

Hyderabad metropolitan area has a population of about 6.5 million people requiring about 25,000 hospital beds against which there are hardly around 12,000 beds in total. Hyderabad boasts 50 government hospitals, 165 private hospitals, 4000 clinics, and 500 diagnostic centers. While about 28% of residents in Hyderabad use government hospitals, which have about 5800 beds, a majority of them prefer treatment in private hospitals, which have just roughly as many beds as the government hospitals. Private hospitals are perceived to be effective and reliable, although they are expensive, as evidenced by the way the non-availability of beds is confronted by the patients in emergency, on any day of the year. Government hospitals, which are known for poor

hygiene, and shortage of staff and facilities are preferred only by the poor/below-the-poverty line persons. But many people are of the view that the cost of healthcare in private hospitals is relatively affordable in Hyderabad compared to other cities of India.

In Hyderabad, there is a unique community health insurance scheme called 'Rajeev Arogya Sree' offered by the government to low income patients; it does not involve any premium payment from the patient; this scheme provides for a gratuitous financial assistance of INR 200,000 (US$3175) to a patient belonging to Below Poverty Line (BPL) group, this assistance is more than enough for treating any major expensive surgical treatments. Under this scheme, the patient can walk into a private hospital with the eligibility card and does not have to pay anything at all. Obtaining an eligibility card for this scheme is hassle free; even ineligible persons can obtain an eligibility card with some bribing, which is not at all uncommon here. Generally, a physician/surgeon who is treating the patient in his private clinic also serves as a consultant doctor in a big private hospital; when it is found that the patient has to be treated in a big hospital, he refers the patients to the very private hospital in which he is already a consultant.
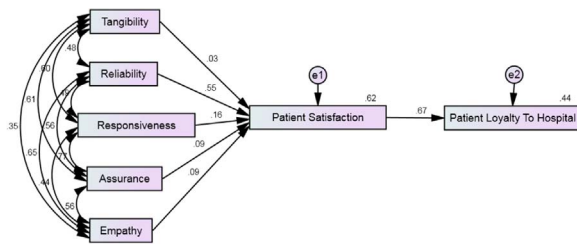
4. Findings and discussion

4.1. Model fitness

See Table 5. CMIN/DF is 3.883, which is below the upper limit of 5.0. SRMR, which should be less than .08 to be a good fit, is .093; this is slightly bigger than upper limit of .08. General Fit Index (GFI) is .971, which is more than the recommended level of .9. Adjusted General Fit Index (AGFI) is .840, which is less than the recommended level of .9. NFI, TLI, and CFI are .974, .917, and .98, respectively. They all indicate a good fit. RMSEA of the model is .127 but it should have been less than .05; similarly, PCLOSE, which is .015 for this model, should have been more than .05. But for these few indices which indicate poor fit, the overall model fitness is good.

The path diagram (Path Diagram 1) and Table 3 shows the regression weights (with their significance levels) of reliability (.550) and responsiveness (.160) (on patient satisfaction), and regression weight of patient satisfaction (.666) on patient's loyalty to hospital.

Table 4 shows direct, indirect and total effects of Tangibility, Empathy, Assurance, Responsiveness, and Reliability on Patient satis-

Path Diagram 1. Model showing factors influencing patient satisfaction.

faction and also the direct effects, indirect and total effects of patient's satisfaction on patient's loyalty to hospital. Post-data analysis, 10 patients not included in the survey were contacted to confirm the findings, particularly the irrelevance of tangibility, empathy, and assurance to patient satisfaction. They all agreed that they go by what their physician has advised them no matter what kind of infrastructure and staff the hospital had. (Table 5).

Responsiveness (.160) and Reliability (.550) only have direct effects on Patient satisfaction like it was found by the study of Kuo et al. (2009) and also of Hsiu-Yuan Hu et al. (2011). Patient's satisfaction has direct effects on Patients' Loyalty to Hospital (.660). Interestingly, this research gives a new insight that if the main goal of any research of kind is to identify the factors that underlie patient satisfaction, SERVQUAL dimensions are redundant, since barely two of the five dimensions of SERVQUAL are relevant. It bears repetition here that tangibility, empathy, and assurance are have no relevance in this kind of context. So caution is advised in the use of SERVQUAL if the context is characterized by developing countries, information asymmetry, and patients depending heavily on referring physicians' advice for choice of service provider.

Table 4 shows the indirect effects of Tangibility, Empathy, Assurance, Responsiveness, and Reliability on Patient's Loyalty to Hospital. Responsiveness (.147) and Reliability (.481) have indirect effects on Patient's Loyalty to Hospital. The intervening (mediating) variable is Patient satisfaction. These findings are in line with those of Caruana (2002).

The total effects of responsiveness and reliability on patient satisfaction are .160 and .550.

The total effects of responsiveness and reliability on patients' loyalty to Hospital, which are obviously indirect effects mediated by patient satisfaction, are .160 and .366, respectively. The total effects of patient's satisfaction on Patients' Loyalty to Hospital are .666. The mediating role of patient satisfaction is very high since the indirect effects of responsiveness and reliability influence it.

The most important aspects to focus on, as per our findings, are: (1) timely delivery of services, (2) caring employees, (3) billing accuracy, (4) proper communications about the time of service delivery, (5) promptness of services, and (6) employees' willingness to help employees. In essence, employees' attitude towards patients, their communication, and accurate delivery of services are highly critical to hospital's success. These findings corroborates with that of Itumalla (2012).

Further, we find that women patients' satisfaction is more critical to building loyalty since they are more inclined to visit the hospital again if their satisfaction with the service is high. As regards the influence of demographic variables, Critical Ratios (CRs) for age (Table 6) are within the threshold limits of −1.96 and +1.96. There is no evidence for impact of age on the variables taken for this study. The critical ratios for coefficients based on marital status (Table 7) are within the threshold limits of −1.96 and +1.96. Hence marital status has no impact on patient's ratings on selected variables.

The critical ratio for coefficients of female is outside the threshold limits (Table 8); it can be surely inferred that gender impacts the quality service evaluations, i.e., patient satisfaction and loyalty. These findings are in line with those of Venn and Fone (2005) and Shabbir et al. (2010).

The regression weight of patient's satisfaction with Patients' Loyalty to Hospital is .185 for female group; this is significantly bigger than .113, which is the regression weight for male group (Table 9). Women's satisfaction with service quality has greater impact on Patients' Loyalty to the Hospital while it is not so with the male group. Marital Status and Age have no impact on regression weights of the variables taken, but gender does.

Based on the results of the research, we consider the status of hypotheses as follows.

Hypothesis 1 is rejected since all the SERVQUAL dimensions do not equally impact patient's satisfaction. Only reliability and responsiveness do impact.

Hypothesis 2 is rejected since only gender impacts the evaluations but other factors do not as hypothesized.

Hypothesis 3 is fully accepted since there is an evidence for the mediating role of patient satisfaction on loyalty.

For ease of visual checking, the hypotheses and their status after research are set out in the Table 10.

5. Directions for future research

We provide some directions for other researchers to carry out and extend this line of research. For instance, the sample, although large, could be larger than this to get 100% representation of the population. Importantly, the reliability coefficients of Tangibility, Assurance, Empathy should be much larger although they are greater than .7. Future research should focus on the influence of referring/treating physician on the choice of hospital by the patient. Another question that should be examined is whether hospitals borrow their image from the referring physicians. It is possible that patients trust what the physician chooses for the patients. This should be examined. An exclusive study with physicians as respondents and their satisfaction with each of the dimensions of SERVQUAL should be conducted for a better insight into the issue.

Another suggestion for those researchers who are interested in this area is to conduct studies using frameworks other than service quality model. For instance, researchers could use either i) Heskett and Schlesinger (1994) framework of Service Profit Chain or ii)

Table 3
Regression weights: (ungrouped).

			Standardized estimate	Un-standardized estimate	S.E.	C.R.	P
Patient Satisfaction	< —	Reliability	.550	.498	.059	8.370	***
Patient Satisfaction	< —	Responsiveness	.160	.152	.071	2.150	.032
Patient Satisfaction	< —	Assurance	.089	.070	.063	1.109	.267
Patient Satisfaction	< —	Empathy	.092	.101	.070	1.447	.148
Patient Satisfaction	< —	Tangibility	.027	.036	.082	.437	.662
Patient Loyalty To Hospital	< —	Patient Satisfaction	.666	.966	.081	11.939	***

Table 4
Direct, indirect and total effects.

Effects	Tangibility	Empathy	Assurance	Responsiveness	Reliability	Patient satisfaction
Patient Satisfaction(Direct Effects)	.027	.092	.089	.160	.550	.000
Patient Loyalty To Hospital(Direct Effects)	.000	.000	.000	.000	.000	.666
Patient Satisfaction (Indirect effects)	.000	.000	.000	.000	.000	.000
Patient Loyalty To Hospital(Indirect Effects)	.035	.098	.068	.147	.481	.000
Patient Satisfaction (Total effects)	.027	.092	.089	.160	.550	.000
Patient Loyalty To Hospital(Total Effects)	.018	.061	.060	.106	.366	.666

Table 5
Model fitness.

Index	
CMIN/DF	3.883
RMR	.093
GFI	.971
AGFI	.840
NFI	.974
TLI	.917
CFI	.98
RMSEA	.127
PCLOSE	.015

Table 6
Critical ratios for regression coefficients based on age.

	Young	Middle age	Old
Young	.000		
Middle Age	1.345	.000	
Old	1.624	.605	.000

Table 7
Critical ratios for regression coefficients based on marital status.

	Single	Married
Single	.000	
Married	.940	.000

Table 8
Critical ratios for regression coefficients based on gender.

	M	F
M	.000	
F	2.655	.000

Table 9
Coefficients male and female groups.

			Estimate (Male)	Estimate (Female)
Patient Satisfaction	< —	Tangibility	.126	.155
Patient Satisfaction	< —	Responsiveness	.199	.181
Patient Satisfaction	< —	Reliability	.184	.226
Patient Satisfaction	< —	Assurance	.227	.245
Patient Satisfaction	< —	Empathy	.161	.175
Patient Loyalty To Hospital	< —	Patient Satisfaction	.113	.185

Rosenbaum (2006)'s Relational Third Place theory iii) Complex Organizational Problems and Solutions (COPS) framework propounded by Paul and Sahadev (2016) in the context of hospitals. According to Service Profit Chain model, the service quality delivered by a service provider is the consequence of a chain of cause-effect relationships. Similarly, Rosenbaum's theory suggests that some consumers rely upon third places to satisfy not only their consumption needs but also their needs for companionship and emotional support. Further, the context of developing countries where the patients get healthcare free of cost could be the backdrop of the research. In such a context, the relationship of SERVQUAL dimensions with patient satisfaction should be studied and established.

6. Conclusion

The most important aspects the hospital managers need to focus on, based on the findings of our research, are: (1) timely delivery of services, (2) caring employees, (3) billing accuracy, (4) proper communications about the time of service delivery, (5) promptness of services, and (6) employees' willingness to help patients. Assurance,

tangibility, and empathy matter little presumably due to the patient's dependence on the treating physician's recommendation. Further, it is important to mention that women's satisfaction with service quality has greater impact on patients' loyalty to hospital while it is not so with the male group.

Reliability and responsiveness (but not empathy, tangibility and assurance) impact patients' satisfaction. Patient's satisfaction impacts patients' loyalty to hospital. Reliability and responsiveness are mediated by patient's satisfaction in influencing the loyalty of the patients to hospital. The most important aspects to focus on, as per this research, are: (1) timely delivery of services, (2) caring employees, (3) billing accuracy, (4) proper communications about the time of service delivery, (5) promptness of services, and (6) employees' willingness to help employees. In other words, employees' attitude towards patients, their proper communication with patients, and accurate delivery of services are highly critical to hospital's success. Simply stated, Attitude, Communication, and Delivery (ACD Model) are the key to making patients return to the same hospital.

An important inference that can be made from this study is that assurance, empathy, and tangibility matter little to the patient since he/she depends heavily on the treating physician in developing countries. In a way, SERVQUAL is not fully relevant to this scenario since only two of five constructs were found to have links with patient satisfaction. It can be inferred from this that patients might assume that their physician is already sure about tangibility, assurance and empathy. These findings are aligned with the quality dimensions of WHO framework (2006) which prescribes that the healthcare should be acceptable/patient-centered and take into account local cultures and preferences of users. Last, but not least, the hospitals derive their brand equity from the referring doctors.

Table 10

Status of hypothesis based on the findings.

Hypothesis No.	Hypothesis	Status after research
Hypothesis 1	All the SERVQUAL dimensions equally impact the patient satisfaction in a populous developing country.	Reliability and Responsiveness only contribute significantly to patient satisfaction but the other three do not.
Hypothesis 2	Age, Gender, and Marital Status impact the evaluations of the patients.	Gender impacts evaluations but age and marital status do not.
Hypothesis 3	Patient satisfaction has a mediating role in increasing the patient loyalty.	Patient satisfaction mediates the relationship of reliability and responsiveness with patient loyalty.

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