

Quality Management Practices and Quality Improvement Outcomes of Accredited Hospitals in India

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Abstract:

Indian Healthcare sector is swiftly expanding in terms of varied employment opportunity and augmented revenue. Healthcare organisations aims to possibly achieve highest quality of care with optimum resources available. However, whether the expansion translates into better quality of services and improving outcomes for patients, still remains a question. While it is widely accepted that accreditation programmes have been a predictor for improvement of quality in healthcare, rigorous and transparent examination of successful implementation in accredited hospitals has not been explored much. This study examines the relationship between quality improvement practices and Quality improvement outcomes in accredited hospitals. Respondents for the study included various healthcare professionals' viz. doctors, nurses, technicians and administrators experienced in NABH (National Accreditation Board for Hospitals) accredited hospitals in India. The study results revealed a positive and significant relationship between Quality improvement practices (QIP) with Quality Improvement Outcomes (QIO). This study will aid in better understanding of quality accreditation being a driver for quality improvement practices. It helps hospital management to add accreditation in their agenda for continuous quality improvement.

Keywords: *Quality, Hospital, accreditation, outcomes.*

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1. Introduction:

Healthcare industry is currently facing the urge to improve the quality of services provided due to competitive business environment, escalating complexity and globalization of quality. Thus, globally healthcare is considered the highest growing and most challenging among all service industries. Therefore it needs special attention because they cause direct impact on the economy

of the country and in addition to its impact on employment and income generation. In many developing countries, including India the service sector has claimed abundant market share. Quality of service is the most preferred parameter while assessing the performance of any industry. Service industries keeps quality in the upfront while mapping the important strategic elements (Barbara R. Lewis, 1988). The past two decades have

witnessed several literatures on quality of services right from exploring the fundamental dimensions of quality to the impact it creates on service outcomes (Aagja & Garg, 2010; Padma, Rajendran, & Sai, 2009). Healthcare industry is now under constant pressure of upholding and sustaining their quality status to gain credibility for delivering quality services matching the satisfaction and preferences of patients (Rahat, 2017). This has created avenues for various external benchmarking methods of quality for keeping track of the progress of quality improvement initiatives in healthcare sector. Healthcare Benchmarking shall be understood as a concrete and continuous mechanism which measures, compares the results of the key processes with those of the best performers while evaluating organisational performance. Quality healthcare is defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”(N.Lohr & Steven A.Schroeder, 1990).

Concept of quality in healthcare denotes the impact created by the services provider on the health and safety of its beneficiaries. The purpose of measuring quality in healthcare is to determine its effects on expected outcomes. Most importantly this effort is intended to ensure healthcare processes are adhering to scientific evidences as agreed by professional experts and is in line with patient preferences. It is agreed that quality is earned through continuous and persistent efforts focused to achieve excellence in the services provided. In the past decade the increased demand for quality in healthcare has introduced new strategies viz. medical tourism, medical insurance, corporate growth and empanelment with government health schemes. Such new trends infused the need for standardizing quality of care in healthcare

facilities. Thus quality accreditation bodies both national and international level to act as a quality assurance mechanism have developed.

In the light of improving quality of medical care, the Institute of Medicine (1990) has introduced a tangible effort which defined as ‘the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge’. However, the recent studies have thrown light on the greater deficiencies in healthcare quality, and health care society is confronting a great challenge in implementing quality-improvement programs effectively (Institute of Medicine, 1990). Although it is accepted globally that the need for quality improvement in healthcare is very important, not much understanding prevails about the means to achieve effective improvement in overall care provided (Glickman, Baggett, Krubert, Peterson, & Schulman, 2007). The contextual factors that influence the effectiveness of quality improvement strategies and hospital accreditation, have been described, assessed and analysed by many systemic reviews (Kringos et al., 2015). Qualitative study conducted amid the healthcare professionals at Iranian hospitals (Brubakk, Vist, Bukholm, Barach, & Tjomsland, 2015) gave out the concept, challenges and possible drivers for successful implementation of quality improvement practices and accreditation. This study revealed that inadequate knowledge, training and lack of commitment of managers and physician was the main barriers for accreditation that can be overcome through extensive training and awareness building

Instituting a quality system in a healthcare setup expedites the standardization of the systems and processes in terms of both clinical and administration. This standardization further ensures performance improvement of healthcare organisations. Quality in healthcare services

delivery cannot be defined in simpler terms nor measured by applying a thumb rule or formula. It is a merger of multiple factors that encompass the practices, policies, processes, etc., of the care giver and the outcomes related with it. The concluding gradation is the level of satisfaction by the beneficiaries in the process, which yet again is an unpredictable matter, subject to varying grades given by the care receiver. The institution is thus making efforts mainly to strive to deliver the best of all. With these background, this paper attempts to provide a framework for understanding the relationship between quality management practices and quality improvement outcome through survey of healthcare professionals from accredited hospitals in India. The research objectives are to analyze

- Relationship between Top management commitment and quality improvement outcomes.
- Relationship between Human resource efforts to quality and quality improvement outcomes.
- Relationship between Participation in accreditation process and quality improvement outcomes.

The objectives of the research is translated in to a preliminary research model as presented in Figure1.

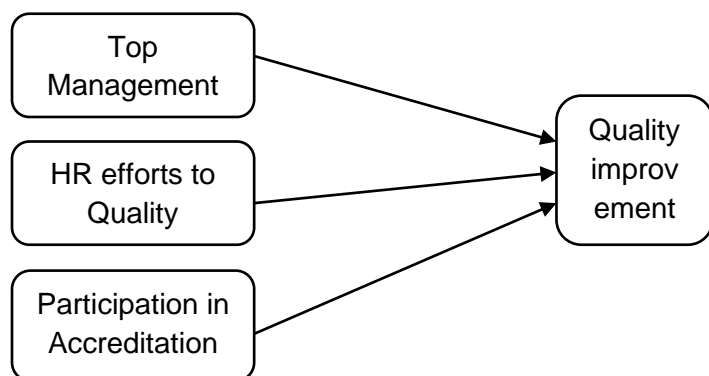


Fig 1 : Proposed Research Model for this study

2.Literature Review and Hypotheses Development

Quality management is an approach which systemises processes and restructures flow of work in order to achieve optimal quality outcome in terms of service quality, satisfaction of customers and employees and overall performance outcomes of healthcare organisations. Organizational capabilities that include leadership, human resources engagement and motivation, data management, hospital electronic health record systems, organisation culture, group dynamics, rewarding mechanism, are crucial elements for affirming quality improvement in healthcare. They act as primary driving force for achieving successful change in the workflow and process.

Quality management is an integrated management philosophy which intends to achieve constant improvement in the process, products and services to reach or go beyond consumer preferences (Prajogo & McDermott, 2005; Sousa & Voss, 2002). Healthcare leaders are focusing on integrating values and preferences of patients in all the services provided by healthcare sector.

2.1 Top Management Commitment to Quality: studies support that leadership ability to guide and nurture quality in all services of healthcare is one of the prime factors in determining the success of quality management practices (Tan, C.K., & Rahman, 2008). Quality management practices are positioned as top priority among the strategic leaders and decision makers belonging to both management and medical fraternity. It has become a key element for defining the competency for successful organizations (Juran & Godfrey, 1998) also created a tight link between leadership commitment and quality-improvement processes (Waldman et al., 1998). Transformational leadership styles were associated with top management's involvement, visible presence and interest towards quality improvement. The

leadership in healthcare organisation has direct impact on the culture and commitment of an organization towards quality improvement. Involvement of physicians, administrators and as well paramedical staff in implementing quality improvement practices are easily promoted by the involvement of senior leadership, board members, which enables focus towards quality outcomes (Weiner, Shortell, & Alexander, 1997). The role of leadership being a driving force to implement changes and leading the healthcare team towards successful implementation of quality is well documented in the literature (Richard Bolden, 2006). Study revealed senior managers' participation and involvement in understanding customer focus are the key requirements of TQM success (Taylor & Wright, 2003). Studies support the fact that commitment of the leaders and top management are important for successful implementation quality management process (Arshida & Agil, 2013). Based on the literature reviewed, proposed hypothesis is

H₁: Top management commitment has positive and significant relationship with Quality improvement outcomes

2.2 HR efforts for Quality improvement: HR efforts could be summarized as employee involvement, engaging them appropriately to boost their contribution, moulding their attitude towards positive results, skill enhancement through training and increase motivation through rewards. Studies and literatures have recognised employees efforts as one of the key factor for successful quality improvement and implementation (Alolayyan, Ali, Idris, & Ibrehem, 2011; Sadikoglu & Zehir, 2010). Similar studies also emphasizes that successful TQM implementation require adequate education, appropriate training and involvement of the workforce (Mosadeghrad, 2014). Proper channelization of employee engagement and empowerment at all levels of the hierarchy will

yield significant contributions. Employee empowerment also helps in problem solving, processes improvement, creative decision making, and customer satisfaction (Mohrman, Lawler III, E. E., & Ledford Jr, 1996). Employee participation and suggestions are motivated in a total quality setting to achieve positive employee engagement. Employees attitude towards TQM was explored in a large Malaysian organization and revealed that employees' perception of TQM significantly relate to employees' attitudes (Ooi, Arumugam, Teh, & Chong, 2008). Thus, the following hypothesis proposed.

H₂ HR effort to quality has a significant and positive relationship with quality improvement results.

2.3 Participation in Accreditation process: Many studies have explored the influence of accreditation process on satisfaction of patients (Al Tehewy, Salem, Habil, & El Okda, 2009; Jersey Chen, Saif S. Rathore, Martha J. Radford, 2003; Peabody, Quimbo, & Solon, 2009). Several studies revealed that accreditation process has guaranteed adherence to evidence based standards, developed commitment towards quality improvement. Participating in accreditation programmes ensures implementation of the quality management practices and earns good outcomes addresses patients expectations for high quality services (Barker, Flynn, Pepper, Bates, & Mikeal, 2002; Pollack & D'Aunno, 2008; Wells et al., 2007). Based on the literature reviewed, proposed hypothesis is

H₃ Participation in accreditation process has a positive and significant relationship with quality improvement results.

2.4 Quality Improvement outcomes: Quality improvement as originally an approach adopted and developed by other industry has slowly and rapidly received attention from the healthcare system. It is a "management philosophy and system which involves management, staff and

health professionals in the continuous improvement of work processes to achieve better outcomes of patient care". Quality Improvement always aims to constantly achieve or exceed the patients', health professionals and overall community needs (Harriigan, 2009). The degree with which the expectations and satisfaction of the patients are addressed becomes the norm to measure the quality improvement outcomes. In healthcare quality improvement, it is well-known fact that "you cannot manage what you cannot measure". It is mandatory to design and implement a system to monitor and measure the results of quality improvement. Such evidence based monitoring system will ensure good performances by health systems and consistently upkeep better focus on patients preferences. According to another author, the systematic measurement of Quality improvement and understanding patients' feedback are useful tools for assessing the successfulness of quality improvement practises. Also it will aid in the development of specific interventions and strategies for accreditation (Shaller, 2007).

Several specific studies, such as (Hijazi et al., 2018), carried out in Jordon, points out the significant success factors of TQM (top management commitment; quality assurance framework and patient centeredness) From careful literature review this study adopted some factors to evaluate Quality improvement outcome in Indian accredited Hospitals. Quality improvement practices starting from leadership commitment, quality improvement outcomes, quality management process, as well as consumer satisfaction (Mosadeghrad, 2014; Paccioni, Sicotte, & Champagne, 2008) have been studied and the relationship between quality improvement, fiscal performance, competitive advantage and employee commitment have been explored in US hospitals. Similarly another study by (El-jardali, Jamal, Dimassi, Ammar, &

Tchaghchaghian, 2008), assessed quality management practices and patient centeredness (Hijazi et al., 2018).

From the above mentioned studies 4 dimensions were taken for the study where 3 variables influences quality improvement practices viz; Top Management commitment, Participation in accreditation program, HR efforts to quality and intend to assess the relationship with quality improvement outcome.

3 Research Methodology

In order to test these hypotheses we adopted systematic sampling. In the First stage, list of 60 NABH accredited hospitals were selected through simple random sampling in India. We distributed 10 questionnaires to each of the 60 hospitals for content analysis. The hospitals with NABH accreditation were approached for study to ensure the implementation of quality improvement practices.

The instrument of (El-jardali et al., 2008; Hijazi et al., 2018) was adopted with a total of 23 items under 4 constructs using 5 point Likert's scale where 5 being most agreeable and 1 being most disagreeable. Pilot study was done among healthcare employees of accredited hospital. Based on the nature of response from the pilot study 654 questionnaire was distributed to nurses, doctors, paramedical technicians and administrative employees having minimum of two year experience in the organisation and minimum 1 year experience in practicing NABH quality management system.

Table. 1. Reliability of the concepts

Reliability			
	Cronbach's Alpha		No. of items
1	Top Management Commitment	0.893	6
2	Participation in Accreditation Process	0.889	5

3	HR efforts for QI	0.817	6
4	Quality Improvement Outcomes	0.837	6
	Total Variables		23

The reliability test proved positive through the survey. The Cronbach's value was found to be greater than 0.7 for all the selected dimensions of the construct, confirming that the selected items are internally consistent for each dimension (Nunnally & Bernstein, 1978).

4 Analysis and Results:

PLS – SEM Bootstrapping is a nonparametric procedure that permits exploring the statistical significance of various PLS-SEM results such path coefficients, Cronbach's alpha, and R² values. VIF values for collinearity is a useful indicator. Recent research supports the use of partial least squares structural equation modelling (Rasoolimanesh & Ali, 2018). Our study used PLS SEM to provide a fresh insight to the analysis.

The following diagram fig: 2 explains the independent and dependent variables and their relationships

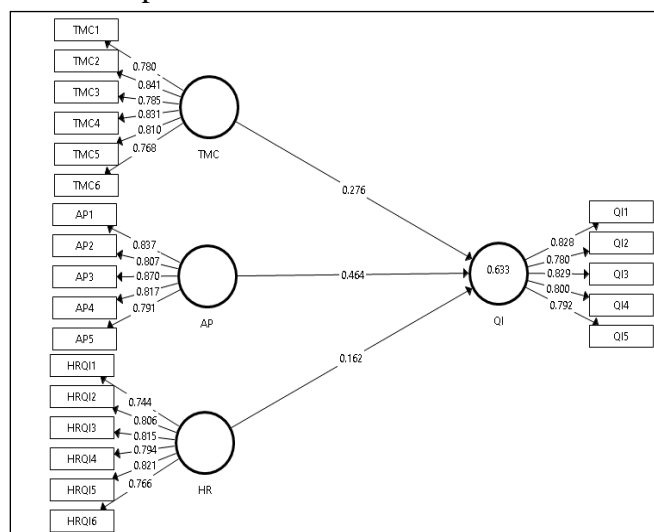


Fig: 2. The PLS path modelling

4.1 Measurement model of the study:

	Internal consistence	Indicator	Convergent validity
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	Internal consistency	Reliability	
Dimensions	rho_A	Composite Reliability	Average Variance Extracted(AVE)
Top Management Commitment	0.892	0.916	0.645
Participation in Accreditation Process	0.884	0.914	0.680
HR efforts for Quality Improvement	0.882	0.909	0.626
Quality Improvement Outcomes	0.868	0.903	0.650

Tabel:2 Result summary for reflective outer models

4.1.1. Internal consistency reliability – According to (Revelle & Zinbarg, 2009) internal consistency as the extent to which all of the items of a test measure the same construct. From table 2 all Cronbach's values are > 0.6, so high levels of internal consistency reliability have been demonstrated among all items included under the independent variables selected for the study (Bagozzi & Yi, 1988; J. F. Hair, Sarstedt, Ringle, & Mena, 2012; Tenenhaus, Vinzi, Chatelin, & Lauro, 2005).

4.1.2.Indicator reliability values are more than 0.70 in our study found under composite reliability indicates (Henseler et al., 2014).

4.1.3.Convergent validity – Table 2 indicates AVE values greater than the acceptable threshold of 0.5, which confirms convergent validity, hence the measures of the three reflective constructs can be said to have high levels of convergent validity. (Bagozzi & Yi, 1988; J. J. F. Hair, Anderson, L.Tatham, & BlackC., 2011)

4.1.4.Collinearity - VIF values between the latent variables were found to be less than <5 and it reveals there is not collinearity between the independent variables (J. F. Hair et al., 2012).

4.1.5.Outer loadings for all variables ranges from 0.714 to 0.862 which indicates that all are more than 0.4 and significant (J. F. Hair et al., 2012).

4.2 Structural modelling

Path	Standardized Path coefficient	Sample Mean (M)	Standard Deviation (ST DEV)	T Statistics (O/ST DEV)	P Values	Decision
TMC -> QI	0.276	0.278	0.050	5.544	0.000	Accepted
HR -> QI	0.162	0.163	0.044	3.659	0.000	Accepted
AP -> QI	0.464	0.463	0.043	10.827	0.000	Accepted

Table: 3 Bootstrapping “path coefficient” t values and p values

The path coefficient, T – statistics is larger than 1.96 in this study, which denotes that all path relationships are significant. This was done using a two-tailed t-test with a significance level of 5%.

The results reveal that quality improvement practices are good predictors for quality improvement outcomes in hospitals with accreditation. Top management commitment is proved to be a good predictor of quality improvement outcome in accredited hospitals. Also the outer loading values are more than 0.4 for all sub variables which indicated HR efforts has a positive and moderately significant relationship with Quality Improvement Outcomes. Finally the path coefficient value was high which indicated positive and significant relationship between participation in accreditation programmes and Quality improvement outcomes and proves that Participation in Accreditation Process is good predictor of quality improvement outcome.

5. Discussion

The top management and leadership commitment towards implementing quality management or accreditation processes have been examined in many studies. Manager commitment yields increased employees contribution with commitment towards quality improvement (Mosadeghrad, 2014). Top management leadership contributes to the improvement of performance by ensuring implementation of quality management practices (Wilson & Collier, 2000). This study found that the Top management commitment and leadership support are the key components of achieving quality improvement which denotes that managers have clear vision and constantly participate in quality improvement

activities, readily allocates proper resources, manages changes, appropriately use the accreditation results to improve quality, leadership support and good quality environment is maintained for achieving quality improvement outcomes.

The efforts of the Human resources is an important variable that affects the internal quality (Hani & Alomari, 2012) , Healthcare managers believe that accreditation programs ensures the quality of services, promotes good practices by staff at all levels. Whereas the performance of the staff and its benefits can deliver largely on the knowledge, skill and motivation of those workforce responsible for delivering quality health services (Weiner et al., 1997) and the attitude of various healthcare professionals also very supportive towards accreditation and thereby ensuring successful implementation of quality management practices. This study throws light on the fact that various healthcare professionals are provided training in identifying and responding to quality improvement opportunities based on endorsements from accreditation audit result, all healthcare workforce is provided continuous training to adopt quality improvement measures, cooperation within various departments is ensured to improve the quality of services. Employees are provided feedback on their performance encouraged to improve their performance, and the hospital has an effective suggestions system where employees record their views to management on how to improve quality and also employees are rewarded, recognised and appreciated for achieving quality improvement, which are key to achieving the HR efforts towards quality.

The final variable Participation in accreditation process improves quality of care, encourages team work, motivates work force, and makes training a

continuous process for their development. A Thailand based cross-sectional survey, reveals that more than 90% of the healthcare professionals perceived that problems prevails with participation in accreditation process (El-jardali et al., 2008), along with the participation in accreditation programs adherence to quality standards improves operational efficiency of human resources, enhances patient care service and reduces rates of error in laboratory (Ghareeb, Said, & El Zoghbi, 2018). Employees' participation in accreditation process has a significant correlation with quality results (El-jardali et al., 2008) based on these studies, this study confirms that accreditation process enables improved quality outcomes in patient care, motivates staff, encourages teamwork and cooperation, enables better response to patients, ensures training is provided continuously, and makes networking with other partners possible.

6. Practical Implications

This study revealed the existence of a positive and significant relationship between quality management practices and quality improvement outcomes, since the accreditation has ensured the implementation of quality management practices which ultimately leading to improved quality outcomes, the results of the study helps healthcare professionals in understanding the value of quality accreditation. In order to successfully implement quality management practices healthcare organisations rely on acquire quality accreditation. For successful quality accreditation involvement and commitment of the top management is important, the top management of healthcare sector will realise that acquiring accreditation is not just a mandatory criteria for hospitals to get all medical insurances but a basic requirement to ensure successful implementation of quality management practices. This will allow the top management to wilfully invest and mobilize all

necessary resources towards quality improvement practices. Top management realisation will also motivate them towards remaining the primary driving force behind quality improvement practices.

Not only top management but Medical professionals also participate in the quality systems despite the hesitation they hold on the increase in documentation works related to quality accreditation. Participation of medical professionals in implementation of Quality Improvement Program itself a sign of successful quality outcome. The other paramedical professionals will be motivated by recognising their participation in implementing quality management systems as the Quality Improvement Program advocates their importance and gives importance for their role in the healthcare delivery. Finally the senior management and administrators are directed to acquire clear vision about quality improvement and actively participate in quality improvement activities with commitment, exhibit leadership visibly in maintaining appropriate and supportive environment for quality improvement. In nut shell varied healthcare human resources shall coordinate as a team to achieve improved quality outcomes.

This may help the healthcare organisations to understand that Quality Improvement Program provides abundant advantages to widen the scope of the service, capacity to compete and restructure the business model, improve standards of service offered and augment turnover, curtail expenses and importantly achieve patient-centric services. The findings of the study shows that in a way a good quality improvement practice helps the hospitals achieve desired outcomes.

7. Conclusion

The present study will be helpful in identifying and understanding key components of quality improvement practices in hospitals. Such understanding will aid in extracting expected quality improvement outcomes. Hospitals voluntarily opting for accreditation could be assured of the positive impact it creates on the service outcomes. Nevertheless, quality management practices with accreditation status will establish hospitals in good position in the market. This would help in elevating the service rate and the goodwill of the hospital among clientele. Finally, the findings of this study are also pertinent to strategic designers in voting for quality accreditation for hospitals. Increased awareness on accreditation benefits among the top management and human resources at all levels in hospitals would be more beneficial in successful implementation of Quality Improvement Program. Further studies can focus on exploring other mediating and moderating variables of quality management practices and quality improvement outcomes.

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