QUALITY IMPROVEMENT IN PUBLIC AND PRIVATE SECTOR HOSPITALS – A STRATEGIC INNOVATION

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Abstract

Health care organizations are supposed to be more customer-oriented than all other organizations owing to the nature of service they are meant to offer. The quality of their services is crucial to the patients and the community. With increasing competition, advances in medical sciences, and rising patient expectations, the health care systems have become complex organizations. They need to obtain an optimum balance between the resources and patient satisfaction. Total Quality Management (TQM)/Continuous Quality Improvement (CQI) has a great potential to address quality problems in health care organizations and improve the organizational performance. The purpose of this study is to investigate the relationship between TQM/CQI practice and the performance in public and private sector hospitals in Kerala. It aims to identify the factors influencing TQM/CQI practice and to investigate the impact of each TQM/CQI element on hospital performance. It also tries to investigate the major inhibitors of successful TQM implementation in public and private sector hospitals in Kerala. It is expected that the exploration of the link between the obstacles and the measures of perceived TQM/CQI success will provide insight on how to better manage TQM/CQI implementations in public and private sector hospitals in Kerala. Implications for future research and practical applications of the findings are also discussed.

Keywords: *Continuous Quality Improvement, Hospital Quality Indicators, Total Quality Management*

Introduction

The terms Total Quality Management (TQM) and Continuous Quality Improvement (CQI) are often used interchangeably. TQM/CQI was developed by the US statistician Deming in Japan in the 1950s and became more prominent from the early 1990s in health care. The TQM/CQI model is an organizational approach involving organizational management, teamwork, defined processes, systems thinking, and change to create an environment for improvement. This approach incorporated the view that the entire organization must be committed to quality and improvement to achieve the best results. (Berwick DM, Godfrey AB, Roessner J., 2002).The philosophical basis of CQI is the assumption that problems in producing a quality product arise most often not from a lack of will, skill or benevolent intention among the people involved in the processes, but most often from a "poor job design, failure of leadership or unclear purpose.

CQI encourages trust, respect, communication, collaboration, responsibility, empowerment, and recognition between employees and management (leaders). CQI vigorously discourages fear and blame. The underlying principle of CQI is that people are basically good and establishing trust and respect instead of placing blame or creating fear is the positive approach in it. The other basic tenets implicit in CQI would be honest communication and collaboration about the way things are done as well as the ability to make changes in these processes or procedures (expectations, responsibility, and empowerment). Also, discussion and analysis of the processes provide for ideas and plans for new and different processes and products (Graham NO, 1995).

The method of implementation is important in the formation of CQI. Foremost, CQI requires the commitment of the leaders of an organization to provide not only leadership, but

also financial resources to educate and enable employees to perform and evaluate their functions. Senior leadership must be facilitators and coaches to foster constant learning and to encourage innovation and risk taking. Hunter DL, Kernan MT, Grubbs MR, 1995). It is imperative, if CQI is to be successful, for leaders to also be personally involved in measuring, evaluating, and improving activities in all areas but especially as they apply to the leadership process itself.

The mission statement is an important part of the organization in CQI. The vision statement draws a picture of the organization in the future, based on the understanding of the needs of the community as a whole and of specific groups of customers Batalden PB, Stoltz PK, 1995).The vision statement paints a picture of what the organization can be. An organizationally developed value statement including respect, compassion, integrity, efficiency and leadership may be included in CQI. In CQI, reward systems (recognition of effort) are also important. Rewards should include both verbal and written sincere praise and often involve performance measures. These rewards translate employee satisfaction into sustained effort (McLaughlin CP, Kaluzny AD, 1994).

Guiding principles of expected behavior are another shared organizational policy that may be developed and utilized by health care organizations in CQI. These principle scan place the approaches of Deming's 14 points for Management, Juran's 6 steps to Quality Improvement, or Crosby's 14 steps to Quality Improvement into models for developing an organizational quality improvement environment. From these 3 philosophical methods leadership preferably with input from employees can evaluate and choose the most suitable, stepwise approach for enacting quality improvement.

People (customers) are at the heart of CQI. In CQI a customer is defined as any person with whom one has dealings. Customers are divided into internal and external groups. Internal customers include all the professionals, employees, managers, and administrators. External customers comprise the patients, their friends and family, third party payers, and the local community. The patient is the primary customer in a matrix of related interactions. With CQI all of these "customers" are understood to have various expectations, needs, and value. CQI attempts to satisfy these customers by assessing its processes in addressing complaints, correcting mistakes, or extending products and services. In doing so CQI seeks to provide quality in the organization that exceeds the expectations of the customers.CQI uses a team approach to critically assess processes and to devise solutions and products. These teams are multidisciplinary and they may be of many different purposes. Teams have been shown to outperform individuals acting alone or in larger organizational groups especially when performance requires multiple skills, judgments and experiences (Katzenbach JR, Smith DK, 1993).Employing team structure and understanding team dynamics are at the core of CQI. In CQI various operational tools are available to the teams to assess process function and delivery. The Plan-Do-Check-Act cycle (PDCA)or an alternative method is used as a vehicle for the CQI process. In the Plan step of PDCA the CQI team employs process analysis and problem-solving skills. Many intangible and tangible tools are available to help in analysis of problems. They include methods that facilitate working with others, such as brainstorming, structured discussion, and rank ordering as well as methods that facilitate analysis of systems. The

methods that facilitate data collection and analysis include surveys, focus groups, systems maps, graphs, check sheets, Pareto, control and flowcharts, cause and effect and scatter diagrams, histograms, and benchmarking (Batalden PB, Stoltz PK, 1995). By appropriately using these tools a team canunderst and, identify, define, document, and measure the problems in their processes. They can also devise possible solutions. In the Do step the team implements the best-conceived solution to the particular issue. In the Check stage results of the solution are analyzed and outcomes are verified to assess if improvements have been made. The Act stage of Plan-Do-Check-Act cycle (PDCA) consists of standardizing the new process and repeating the cycle.

Barriers to CQI implementation exist. Since any team is a collection of individuals trying to work together, interaction problems can arise. Personality conflicts, confused goals, jumbled roles and poor leadership have been cited as problems in teams that do not function as a unit. What is very important is that CQI may not work because leaders may be afraid to show ignorance, don't know when and when not to intervene, won't truly share, worry about giving up power, or can't get accustomed to learning on the job (Covey SR, 1989).Continuous quality improvement is a vehicle in which trust, communication, empowerment, and other positive characteristics are used so that leadership with a partnership role can be enacted.

Literature Review

In 1970s Donabedian proposed measuring the quality of health care by observing its structure, processes, and outcomes (Donabedian A., 1966). Twenty years later, health care leaders borrowed techniques from the work of Deming28 in rebuilding the manufacturing businesses of post-World War II Japan (Deming WE.1986). Deming, the father of Total Quality Management (TQM), promoted "constancy of purpose" and systematic analysis and measurement of process steps in relation to capacity or outcomes. In health care, continuous quality improvement (CQI) is used interchangeably with TQM. Continuous quality improvement has been used as a means to develop clinical practiceand is based on the principle that there is an opportunity for improvement in every process and on every occasion (Wallin L, Bostrom AM, Wikblad K, et al. (2003).

In the past 20 years, quality improvement methods have generally emphasized the importance of identifying a process with less-than-ideal outcomes, measuring the key performance attributes, using careful analysis to devise a new approach, integrating the redesigned approach with the process, and reassessing performance to determine if the change in process is successful. Besides TQM, other quality improvement strategies have come forth, including the International Organization for Standardization ISO 9000, Zero Defects, Six Sigma, Baldridge, and Toyota Production System/Lean Production (Shojania KG, McDonald KM, Wachter RM, et al., 2004)

Purpose of the Study

The purpose of this study is to identify the factors influencing TQM/CQI practice and hospital performance, to examine the relationship between TQM/CQI practice and hospital performance, and to investigate the impact of each TQM/CQI element on hospital performance

in public and private hospitals.

The other important objectives of the study are:

- To determine, utilizing quantitative analysis, obstacles to managing theTQM/CQI transformation.
- To examine the relationship between obstacles and different measures of the perceived success (or failure) ofTQM/CQI
- To determine what obstacles are associated with managing a successful quality transformation and compare them to specific outcomes that measures TQM/CQI success.
- To explore the link between obstacles and measures of perceived TQM/CQI to provide insight on how to better manage TQM/CQI implementations.

Statement of the Problem

The research problem is that many hospitals are implementing and using various types of continuous improvement initiatives, but either the results are far below expectations or hospitals are unable to sustain quality management. This study is intended to determine the obstacles to TQM/CQI and then to show how the quality transformation process can be more efficiently managed in health care sector. Only a few studies have attempted to test the relationships between TQM/CQI practice and hospital performance. Furthermore, previous empirical studies were conducted in developed countries, and not in public hospitals that were financially supported by government. An investigation in a developing country like India, with public hospital ownership will verify the impact of the TQM/CQI program on hospital performance. There is little knowledge relevant to the situation of TQM/CQI practice in public hospitals.

Research Questions

The research questions this study addresses are:-

1. What are the relationships between the TQM/CQI practice and hospital performance?
2. What are the characteristics of employees influencing TQM/CQI practice in the public and private hospitals of Kerala State?
3. What are the characteristics of employees influencing hospital performance during TQM/CQI practice in the public and private hospitals of Kerala State?
4. In what way does the practice of TQM/CQI elements affect the hospital performance?
5. What are the benefits and difficulties while the TQM/CQI program is being implemented in the hospitals?
6. Does the hospital organisational performance change as a result of the practice of the TQM/CQI programs?
7. What obstacles associated with managing the quality transformation are perceived as real barriers to TQM/CQI success for Public and Private Sector hospitals in Kerala?
8. How do these obstacles relate to specific outcomes that measure the perceived success (or failure) of TQM/CQI efforts for Public and Private Sector hospitals in Kerala?

Research Hypotheses

On the basis of the research problem the following hypotheses are formulated:

Research Hypothesis 1

H_1: There are statistically significant differences between the employees' characteristics and TQM/CQI practice, as measured by leadership, strategic planning, customer focus, informational analysis, staff focus, and process management.

Research Hypothesis 2

H_2: There are statistically significant differences between the demography (gender, profession, duration, supervisor status) and hospital performance, as measured by patient outcomes, financial outcomes, employee outcomes, and hospital effectiveness.

Research Hypothesis 3

H_3: There are statistically significant difference between the TQM/CQI practice (customer focus, leadership, strategic planning, informational analysis, staff focus and process management) and hospital performance, as measured by patient outcomes, financial outcomes, employee outcomes, and hospital effectiveness.

Research Hypothesis 4

H_4: There are statistically significant relationships between the TQM/CQI elements as measured by leadership, strategic planning, customer focus, informational analysis, staff focus and process management) and hospital performance (as measured by patient outcomes, financial outcomes, employee outcomes and hospital effectiveness).

Research Methodology

Pilot Study

Prior to the commencement of measuring the TQM/CQI variables in a health care context, a pilot case was conducted to verify the reliability of the method chosen. This step assisted in the adjustment of research method problems if need be. Hence the pilot study served as a practice for the researcher's interviewing techniques with subsequent case sites.

Research Design

The research design of the present study is a multiple case design using both qualitative and quantitative data. The use of a multiple case study design is deemed suitable, as it is the type of analysis most appropriate when little research has been done on a topic. Each participating hospital case was therefore being compared to the proposed TQM/CQI implementation framework to determine its appropriateness. Thus the dynamics of each case site in terms of TQM/CQI implementation was the focus of this research.

Data Sources

Data was gathered from a variety of sources such as interviews, questionnaires, observations, historical archives and other qualitative and quantitative information origins. The questionnaire is focused on identifying the elements of TQM/CQI practice and their relationship to hospital performance. The focus group interview was aimed at revealing the benefits and difficulties of TQM practice through group discussion of employees' perceptions.

Case Selection and Description

At first, ten large hospital centres were solicited for their participation in this study. Of these, four were eliminated due to lack of time by management staff to accommodate the research. Of the remaining six cases, an additional three were eliminated because no significant quality initiative was in place. The last three hospitals retained for participation in the study were classified as having begun implementation of TQM/CQI program. Cases were therefore chosen strategically rather than randomly.

Data Analysis

Questionnaire findings were analysed through Multivariate Analysis of Variance (MANOVA) and Multiple Regression Analysis. Findings from focus group interviews were coded and categorised in accordance with the strategies of the grounded theory approach. Hospitals performance data were used to verify and validate the effect of TQM/CQI practice. Being exploratory in nature, this study depends heavily on the rich descriptions of Continuous Quality Improvement (CQI) and the role of each variable in the model as a component of the process. As a result, interview notes, field notes, and other documentation has to be organized to determine whether Continuous Quality Improvement implementation does indeed follow the proposed framework of TQM/CQI implementation in health care.

Findings and Discussion

The results are analyzed and discussed from three aspects: employee's characteristic effect on TQM/CQI practice and hospital performance, TQM/CQI practice effect on hospital performance, and the relationships between the TQM/CQI elements and hospital performance. Some findings according to each research question and hypothesis are discussed.

The answers of the Research questions one: "What are the employees characteristics influencing TQM/CQI practice in the hospitals?" and question two: "What are the employees characteristics influencing hospitals performance during TQM/CQI practice in the public and hospitals?" are given below:

The MANOVA of main effects (gender, profession, duration –working years and supervisor status) indicated that there is no significant difference ($p > .05$) in the practice of TQM/CQI elements. Thus, the hypothesis H1: There are significant differences in TQM/CQI practice results between the demographic characteristics of employees are rejected. In this study, the demographic characteristics of employees do not affect TQM/CQI practice. The four MANOVA results indicated that there is no significant difference ($p > .05$) in hospitals performance by the four main effects of demographic information, in terms of gender, profession, Working years and supervisor status of employees. Thus, the hypothesis H2, "There are significant differences in hospitals performance as measured by patient outcomes, financial outcomes, employee outcomes and hospital effectiveness, between demographic characteristics of employees when TQM/CQI is being implemented, is rejected. Therefore, the hospital performance measured by patients, financial, employees' outcomes and hospital effectiveness, is not affected by the demographic characteristics of the respondents in this study. This finding is consistent with that of Prasad (1999) who reported that there are no significant correlations between a TQM/CQI program's effectiveness and the age and gender of the employees. From focus group interviews, the study

found that some employees were lacking in enthusiasm, solidarity and conscientiousness. These factors were close to the comments made by Hubiak and O'Donnell (1996) when they suggested societal reasons for the failure of TQM/CQI programs, such as individualism and control orientation. These might well have contributed to the demise of a TQM/CQI program. Hospitals also encountered the employees' resistance to change. Most of the employees had a bureaucratic attitude, and no willingness to attend the workshops on TQM/CQI activities, and some of them were compelled by their leaders to participate in the training courses. There is a great lack of learning culture. This feature made the practice of TQM/CQI difficult and limited its possibility for success. This finding coincides with the positions of Hug and Martin (2000); Hubiak and O'Donnell (1996); Ovretveit (2000); Reinertsen (1995); Zabada et al. (1998). They maintain that for successful TQM/CQI practice to occur, people need to be able to learn new skills, new ways of doing things and how to relate to the new process of improving the business. Regardless of how much an organization might plan to undertake TQM/CQI, if people within that organization cannot readily adapt to new ways of doing things, then any changes the company attempts to implement will be slowed or even halted. There is a lack of total quality culture among all personnel. This factor also influenced the TQM/CQI practice and hospital performance. The finding is in agreement with the studies of McNabb and Sepic (1995); Shin et al. (1998); Shortell et al. (1995a), and Vermeulen (1997).

The answer of the Question three: "In what way does the practice of TQM/CQI elements affect the hospitals performance?" is given below: The Pearson correlation measurement showed that there are significant correlations between the TQM/CQI elements and hospitals performance in this study. The performance of Hospitals measured by patient outcomes, financial outcomes, employee outcomes, and hospital efficiency and effectiveness. The MANOVA results provided strong evidence that the hospital performance is affected by the degree of TQM/CQI practice. Hospital one had a higher hospital performance than hospital three. Results showed that the deeper the practice of the TQM/CQI elements, the better the hospital performance. The study demonstrated that the deeper the practice of the TQM/CQI elements, in terms of leadership, strategic planning, focus on customers, informational analysis, focus on staff and process management, the better the hospital performance. This study's results supported the study by Lai and Tsay (2003) who conduct their research in Taiwan hospitals. They found that the higher the scores of TQM/CQI practice, the better the performance. In the same way, the lower the scores of TQM/CQI practice, the worse the hospital performance.

From the results of multiple regression analysis, the study finds that five of the TQM/CQI elements significantly affect hospital performance. These elements were leadership, strategic planning, informational analysis, staff focus, and process management. The study shows that the leadership element has association with employees' outcomes and leadership has impact on financial outcomes and hospital efficiency and effectiveness. The current study reveals that leadership practice affects employees' hours of education and training, as well as the productivity of employees. This result supports the finding of McNeese-Smith (1996), who maintains that a positive relationship exists between leadership behavior and the employee's productivity, and job satisfaction as well as their organizational commitment.

Strategic planning affects total hospital performance.

This study shows that strategic planning in the hospitals has a significant impact on the total hospitals performance. The finding supports the reports of Samson and Terziovski (1999) and Wilson and Collier (2000).

Focus on patients, other customers and market does affect hospital performance.

The present study reveals that TQM/CQI elements that focus on patients, other customers and the market do significantly affect the four areas of individual hospital performance and do they affect total hospital performance. This finding supports with the results of studies by Meyer and Collier (2001); Samson and Terziovski (1999). These writers argue that the TQM/CQI element of customer focus has a significantly positive effect on organisational performance.

Informational analysis affects patients and total hospital performance.

The practice of informational analysis influences both patients' outcomes and total hospital performance. This result is consistent with Wilson and Collier's (2000). They assert that informational analysis influences process management, strategic planning and human resource management.

Staff focus affects employees' outcomes and hospital efficiency and effectiveness.

The element of staff focus significantly affects hospital outcomes: employees' outcomes and hospital efficiency and effectiveness. Employee outcomes include an increase in productivity, as well as a decrease in turnover rate. The element of staff focus affects the productivity in Hospitals. The result is similar to the findings of McNeese-Smith (1996), who points out that employees who are experiencing job satisfaction are more likely to be productive.

Process management affects four individual outcome and total performance.

The element of process management is the strongest element to affect hospital performance in the current study. This study proves that process management does not only affect individual performance in terms of the patients' outcomes, financial outcomes, employees' learning and productivity and hospital effectiveness. It also influences comprehensive hospital performance. This finding supports the study of Carman et al. (1996), who emphasize that focusing on process management enables hospitals to improve efficiency.

Relationships Exist between TQM/CQI and Hospital Performance

Answer to Question four: "What are the relationships between the TQM/CQI practice and hospital performance?" is reported here. Pearson correlation measurement and multiple regression analysis show that there are relatively strong positive relationships between TQM/CQI practice and hospital performance. The investigation results showed that there is a relationship between various TQM/CQI elements and hospital organisational performance (R^2= 0.54; p< .001); TQM/CQIand patients'outcomes (R^2 = 0.36; p< .001); TQM/CQI and financial outcomes (R^2= 0.32; p< .001); TQM/CQI and employees' outcomes (R^2= 0.50, p< .001); TQM/CQI and hospital efficiency and effectiveness (R^2= 0.36; p< .001). Three TQM/CQI elements: process management, informational analysis and strategic planning, can be considered appropriate predictors for hospital performance. Because all three t values are larger than 2, these have been included in the regression equation in order to predict hospital performance. The current study finds that there are strong associations not only between TQM/CQI practice and the four

individual areas of hospital performance, but also between TQM/CQI and hospital wide performance. Some of the findings are in agreement with previous studies.

A Strong Relationship Exists between TQM/CQI and Hospital Performance

There is a strong relationship between TQM/CQI and total hospital performance (R^2= 0.54). The finding is consistent with the studies of Samson and Terziovski (1999).

A Relationship Exists between TQM/CQI and Patient Outcomes

The relationship (R^2 = 0.36) between TQM/CQI elements and patient outcomes in the present study is in agreement with Shortell et al. (1995a), who report that TQM/CQI is associated with the length of stay and charges for patients.

Relationship Exists between TQM/CQI and Financial Outcomes

The present study finds that TQM/CQI practice explains 37 percent of the variance of financial performance. Hence TQM/CQI has a positive impact on hospital financial outcomes. This finding is consistent with Maldonado et al. (2001), who report that there is a significant relationship between TQM/CQI and a hospital's financial performance.

Strong Relationship Exists between TQM/CQI and Employee Outcomes

TQM/CQI has a strong influence on employee outcomes, measured by productivity, employees' satisfaction and turnover rate. This result is compatible with the survey by Goldstein and Schweikhart (2002). They prove that a quality culture is associated with greater staff involvement and satisfaction in health care organizations.

Strong Relationship Exists between TQM/CQI and Hospital Efficiency and Effectiveness

Another strong relationship is identified between TQM/CQI practice and hospital efficiency and effectiveness, as measured by outpatients, in-patients, and numbers of patients undergoing major surgery and occupancy rate. This finding supports the studies of Carman et al. (1996). Carman et al. (1996) demonstrate that an improvement in process results in the improvement of hospital efficiency, while process improvement and an empowered work force contribute to customer satisfaction and an improvement in the efficiency of hospitals.

Three Predictors of Hospital Performance

The results of regression analysis identify that with regard to the predictability of hospital performance, process management is ranked first, informational analysis is ranked second, and strategic planning is ranked third. This study provides evidence that focusing on process management, informational analysis and strategic planning will lead to an improvement in hospital performance.

Question five: "What are the benefits and difficulties while the TQM/CQI program is being implemented in the hospital?" is answered as follows:

The Major Factors Causing the Practice of TQM/CQI

Environmental and organizational factors are two factors causing the practice of TQM/CQI in Hospitals. Hospital two and three have rigid structure, inflexible personnel and rigid salary system. These factors place them in a difficult position because they are unable to respond to environmental change.

The Causal Conditions of the Practice of TQM/CQI

The study finds that the reasons for introducing TQM/CQI practice are based on three

categories: a wish to respond customer initiation, including internal customers and external customers, an organizational initiation and a reaction to competition. Three concepts together form the category of customer initiation. The first concept is to improve health care quality. The second and third motivating concepts are to meet customer needs and to increase customer satisfaction.

The Advantages of the Practice of TQM/CQI

After TQM/CQI practice has been implemented, it is shown that there are many advantages for the hospital and for the employees' individually. The advantages of TQM/CQI practice in the hospital are firstly for employees. TQM/CQI practice allows employees the acquisition of relevant knowledge and skills, the increasing of solidarity and conscientiousness, as well as the promotion of self-esteem among employees. The training hours and productivity of employees have increased and the turnover rate decreased. The second advantage is for patients. TQM/CQI practice provides patients with a high quality service and better care. The third advantage for the hospital from the TQM/CQI program is that it establishes standardized processes and enhances hospital efficiency while finally lowering costs and raising revenue for the hospital.

The Obstacles to the Practice of TQM/CQI

From the focus group interviews, the study reveals that two major obstacles make it difficult for Hospitals to implement TQM/CQI successfully. These are hierarchical and bureaucratic culture and difficulties in carrying out the TQM/CQI elements.

Due to the hierarchical, vertical patterns of interacting and communicating, Hospitals are not able to react quickly to change. The internal factors to inhibit the practice of TQM/CQI are the difficulties in the practice of itsTQM/CQI elements. These are leadership, strategic planning, focus on customers, informational analysis staff focus and process management. The next barrier that is encountered in process management practice is that TQM/CQI principles are not designed into the routine processes.

The results of TQM/CQI practice are used to answer research question six: 'Does the hospital performance change after the TQM/CQI practice?'

This question is answered from three kinds of data, employees' perspectives (responds of questionnaire and focus group interviews), the documentation of Annual Report, and a comparison with performance of selected hospitals. The results of questionnaires show that 59.7 percent of respondents agree that the patient outcomes of Hospitals have increased after the TQM/CQI practice. More than half of the participants (63.5 %) of questionnaires were unsure about the improvement in financial improvement. More than half of the participants (52.2 %) are unsure about the improvement in hospital effectiveness. There are 61.4 percent of participants who agree that Hospitals have a better performance in employee outcomes after TQM/CQI practice. From the focus group interviews, the study explores that many factors individually and collectively contribute to the partial improvement of hospital performance after TQM/CQI practice at Hospitals. They are the hierarchical and mechanistic structure of Hospitals, the bureaucratic attitude of employees, and the resistance to change of employees.

Conclusions and Recommendations

The study revealed the key factors influencing TQM/CQI implementation and hospital performance. It also investigated how TQM/CQI implementation impacts on performance. This research makes a contribution to the body of knowledge. The TQM/CQI program could be seen as an important determinant for enhancing hospital performance, as TQM/CQI has had a worthwhile impact on the performance of Hospitals. Furthermore it indicates that the TQM/CQI philosophy is not culturally bound. This research supports the findings in Western countries and shows that TQM/CQI practice can be applied as effectively in a culturally different place like Kerala.

The successful practice of TQM/CQI depends on continuous self-assessment to identify the opportunities for improvement. This study found that hospitals had experienced organizational change and increased the hospital's performance by engaging in TQM/CQI activities, for there was a positive impact on employees and financial outcomes as well as hospital effectiveness. Likewise, hospitals that are providing a quality caring service should consider TQM/CQI practice as a strategy that will help them to become more successful providers of quality in health care. Moreover, the present study identified that process management, information analysis and strategic planning were three predictors of hospital performance. This will be useful to provide quality managers of hospitals with information to assist them to allocate limited resources to the three elements that have a significant impact on quality performance.

The Recommendations for Successful TQM/CQI Practice

The recommendations that emerged from this study to more successfully implement TQM/CQI are illustrated below: First, hospitals have to organize a steering committee to implement TQM/CQI. As TQM/CQI is a top down form of management, establishing a steering committee is necessary. The committee should be responsible for the TQM/CQI practice and regular evaluation of its progress and performance. The steering committee could be formed by the superintendent and include senior managers. The superintendent could act as an engine and all of the staff as peripheral services, both cooperating together to maintain and run the hospitals. In a similar way, in clinical care service, physicians could act as engines, and supporting technicians act as peripheral services, both working together to care for patients.

The second recommendation is that standardized processes with a performance measurement system to track the progress of TQM/CQI practice have to be established. Managers of hospitals should establish TQM/CQI practice standards or guidelines for employees to follow up. The purposes of the practice of standardized processes could minimize the cost of nonconforming processes, thus increasing hospital efficiency. In the meantime, the hospital should be required to set up a comprehensive hospital performance measurement to align measures of daily operations, to track progress relative to health care actions and to evaluate the TQM/CQI achievements. The performance analyses need to align with the senior leader's performance review and the hospital's strategic planning.

The third recommendation is that a reward and recognition system has to be set up. It is necessary for hospitals to have recognition and reward system to encourage employees to participate in the TQM/CQI activities and recognition for high performance employees. When

employees present appropriate strategy suggestions or quality activities, it is essential that the management committee offer praise and reinforcement to motivate employees and thus increase their satisfaction and self-esteem. Without the change in management evaluation and reward policy, TQM/CQI will never really be taken seriously.

The fourth recommendation is that TQM/CQI education and training need to be effectively classified and evaluated. The education and training courses have to be well classified by the personnel department and they should be evaluated according to the requirements of employees. To do this ensures all of the employees are effective in disseminating the TQM/CQI concepts, principles and the steps of practice.

Recommendation five is based on the insight that an effective leadership is necessary for Hospitals to develop a supporting, empowerment and reward environment that facilitates involvement and development of employees. The leader of hospitals should design work processes that empower the worker and give him or her, a sense of pride and ownership in the organization. With empowerment and reward, the staffs in the hospitals feel that they are a valued part of the organization, and they are willing to participate in making the organization better because they have pride in their work and in their abilities.

The sixth recommendation is that, hospitals have to maintain an efficiently operating communication system. Effective communication between and within departments at Hospitals is necessary. At first, the hospitals' policies, strategies and goals require that they be communicated to all staff to ensure each staff member keeps these in mind, and makes an effort towards the hospitals' goals. Second, the survey results ought to be announced, and analysis reports transmitted to the relevant functional level operations for employees to improve their performance.

The seventh recommendation is that in order to be successful in TQM/CQI practice, there must be a strategic plan that identifies the goal. Strategic actions and resources management are necessary to attain those goals, and the infrastructure to initiate, guide and evaluate actions. This plan must reflect a system approach that optimizes the performance of the entire organization, not individual sections. This plan also involves a long-term Endeavour to create and sustain a new culture, where effective leaders lead to establish an environment where staff will actively participate in the transformation process.

Next, there is a need to use the concept of systems approach which promotes interdependency, holism and synergy, necessary ingredients for dramatic process improvement. Leaders have to look at their organizations not as individual functions, but as a unified, collective whole. The TQM/CQI practice approach needs to integrate itself as a collection of directions, divisions, departments, and units, with each designing its own process improvement plan. Hospitals will not develop interventions to promote interdepartmental unity and teamwork without a systems thinking approach.

A further recommendation is that Hospitals need to develop an organic structure supportive of rapid response. Hospitals can no longer on the bureaucratic structure of the past; it needs to develop an organic structure capable of adapting to the changing environment. With an organic structure, interactions and communications patterns are both vertical and horizontal. Authority is decentralized and decisions are made at the lowest level by people who are the most

knowledgeable about a particular process. Without this structure, it is impossible to sustain dramatic quality improvement efforts.

The next recommendation is to create a new culture, which is fulfilled with the sense of shared values, organizational trust, teamwork, and the necessary ingredients in continuously improving organizational systems and processes. The total quality culture must be supported by teamwork and cooperation, which could promote harmony, and empowerment. Collaboration and teamwork build a new level of capability, a new strength that the hospital can harness to increase its customer satisfaction. Moreover, employee participation in vertical, horizontal and cross-functional teams have proved to be most effective in continuously improving worker performance.

The final recommendation states that Hospitals have to create an environment of empowerment, innovation and organizational learning. TQM/CQI practice requires a facilitating and empowering rather than a controlling style of manager. A facilitating manager leads his staff with the change of the basic values, beliefs, and attitudes so that they are willing to perform beyond the minimum levels specified by the organization. As Glover (1993) argued, in regard to TQM/CQI practice, managers need to change traditional performance appraisal to a new evaluation approach that is evaluations are dependent on having high levels of quality, satisfied staff and customers, and successful TQM/CQI practice in their areas of responsibility. This change enables an increase in the ability of doctors and other employees to take control of quality in teams.

Limitations and Further Research

The limitations of this study can be divided into four areas. The first set of limitations concerns potential bias in the sample population and sample size. The second set concerns research design, research methods and data analysis technique. Another shortcoming of this research involves the measures used. Last but not least, the importance of the current situation of the sample hospitals during the survey should be considered as a limitation as well. Another limitation relates to the sample size. The results of this study cannot be generalized, but they can be transferred to similar situations if the results are de-contextualized and re-contextualized to the current context. Future research should incorporate more public hospitals and private hospitals in their samples. Moreover, research could compare hospitals of Western and Asian countries.

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