



A survey of total quality management in Iran

Barriers to successful implementation in health care organizations

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Abstract

Purpose – The objective of this research is to investigate the success of TQM and barriers to its successful implementation in health care services organizations in Isfahan province, Iran, 2004.

Design/methodology/approach – This descriptive and cross-sectional research was done via two questionnaires (TQM success and its barriers). The statistical population of this research consists of all managers of health care services organizations who implemented TQM in their organizations (90 managers).

Findings – TQM success in Isfahan health care organizations was high. In correlation analyses between the success of TQM and its principles, success, process management and focus on employees had a positive and the greatest effect and focus on material resources and on suppliers had a lower effect. In correlation analysis between the barriers to TQM and the problem dimensions, human resource, strategic and structural problems were the most important obstacles and barriers to TQM successful implementation respectively.

Research limitations/implications – Although conducted in Iran, it is anticipated that the findings may well have relevance on a broader scale.

Originality/value – By replicating this study in different countries and contexts the results could be very fruitful for developing a model of TQM that can be implemented easily, effectively, efficiently and successfully in a cross-cultural context.

Keywords Total quality management, Health services sector, Management effectiveness, Iran

Paper type Research paper

Introduction

Health care is undergoing fundamental changes. The current health care environment changes on a daily basis. New diagnostic and therapeutic techniques and technologies, information technology and a new generation of purchasers and providers will face a proactive consumer culture. The influence of rising costs of health care and consumerism has resulted in significant changes in health care delivery. Changes in health care are apparent as health care organizations continue to redesign or restructure systems to survive in a highly competitive marketplace (Lambert and Nugent, 1999). It is dynamic and difficult to manage competition and consumer expectations. The future is full of challenges for health care managers. Consumers and payers demand high quality health care services at reasonable and affordable costs.

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Health care managers must find new ways to provide services to meet these requirements (Besterfield *et al.*, 1999).

The rapid pace of change in the health care system presents tremendous challenges for health care managers charged with the delivery of health care services. Declining reimbursement, new incentive structures, and increasing competition are placing unprecedented pressure on providers to deliver health care effectively and efficiently. Consumer dissatisfaction, and a growing awareness of gaps between actual and ideal practice have led to intensifying pressure to improve quality (Hermann *et al.*, 2000).

The key to success for those managing healthcare facilities is the ability to perceive future trends and integrate them into quality management strategies. The aim of those strategies is to create quality management as a controlling and navigation tool in a "new-economy-based" healthcare system (Ekkernkamp and Muschenich, 2000).

Quality management constitutes an appropriate response to this challenge. It is a way to organize work flows in health care organizations as usefully as possible and to achieve an optimum outcome quality, i.e. quality of health care services, patient satisfaction, employee satisfaction and overall performance results. One of the most important objectives of health care organizations is to achieve the greatest possible improvement in health care services at the lowest possible cost to both the patients and the health care providers. Quality systems in the domain of health care have one primary aim. This aim is to improve quality and to build up the confidence of patients, professionals and cost payers in the quality of the context, the structures, the process, and the outcomes.

The modern quality field in health care systems is about one-third of a century old. In the last 30 years many health care organizations implement quality improvement activities. Quality, quality assurance, and quality management have been important topics in health care organizations. Systematic and continuous improvement of quality of health care services has been on the agenda of many health care organizations. Quality within health care services organizations continues to be a contentious issue. The role of quality programs and criteria for performance excellence in health care organizations is evolving. Nowadays people are constantly involved in the search for quality products, and quality services. The existence of this desire for quality has caused health care organizations throughout the world to attempt to develop a philosophy which can deliver customers the quality they require. There are several reasons for health care organizations looking for quality. These include: increasing demand for appropriate, effective and efficient health care services, need for standardization and reducing variations that increase the cost of services, reduction of increasing costs, pressure from markets, and developing markets. Quality in health care is an endless process. Quality process should be started, continued, evaluated, improved and monitored continuously (Mosadegh Rad, 2004a).

Total quality management (TQM) is one such philosophy which aims to provide organizations with a template for success through customer satisfaction. TQM can be described as the development of an organizational culture, which is defined by, and supports, the constant attainment of customer satisfaction through an integrated system of tools, techniques and training. TQM is a way of managing to improve the effectiveness, efficiency, flexibility, and competitiveness of a business as a whole. It is also a method of removing waste, by involving everyone in improving the way things are done (Ho and Fung, 1994). TQM is developed to convey the total, organization-wide

effort, which involves the entire workforce to concentrate on continuous improvements for the satisfaction of customers (Bounds *et al.*, 1994).

TQM is an integrated management philosophy and set of practices that emphasize increased employee involvement and teamwork, continuous improvement, meeting customers' requirements, management by facts, team-based problem solving, constant measurement of results, closer relationship with suppliers, and so on (Ross, 1993; Brown, 1992). The goals of TQM are to satisfy the needs of customers, prevent poor quality rather than correcting problems after the fact, develop an attitude of continuous improvement, understand the value of measuring performance to identify opportunities and maintain improvements, and eliminate chronic sources of inefficiencies and costs (Evans and Lindsay, 1996; Burr, 1993). In order to achieve these goals, as well as to gain the competitive advantages, principles of TQM should be fully understood and committed by the entire organization workforce before implementing TQM. The principles of TQM in health care systems include a focus on leadership and effective management commitment; employees and patients; suppliers and partners; material resources; information systems; employee education and training; employee participation; employee responsibility; decision making using facts and data; risk management; communication and quality improvement process (Mosadegh Rad, 2003, 2004b).

TQM is the culture of an organization committed to total customer satisfaction through continuous improvement. In such a culture, resources, material, equipment and quality management systems are cost effectively implemented and fully utilized. TQM demands improved relations with suppliers, a true working partnership. TQM requires that communication systems be adapted to the needs of the work, not to the needs of the hierarchy. TQM demands constancy of purpose throughout the organization, and persistence in accord with a clear and widely understood vision. It is an environment that requires and nurtures total commitment from all employees providing benefits in the areas of cost reduction, customer satisfaction, job satisfaction for providers, increased market share, increased profit, enhanced business competitiveness and improved reputation (Gunasekaran, 1999; Youssef *et al.*, 1996; Mosadegh Rad, 2003, 2004c).

TQM has enjoyed great popularity in industries of all types since its development in the mid-1980s and institutions have incorporated it into their daily management activities (Hendricks and Singhal, 1996; Gunasekaran, 1999; Hansson and Eriksson, 2002). Tobin (1990) has stated that TQM is a totally integrated program for gaining competitive advantages by continuously improving every facet of organizational culture. Studies showed that TQM was positively associated with performance outcome, such as financial performance and profitability as well as with human outcomes, such as employee satisfaction, employee relations, and customer satisfaction (Lawler *et al.*, 1995).

However, in practice, these TQM benefits are not easy to achieve. Despite its theoretical promise and the enthusiastic response to TQM, recent evidence suggests that attempts to implement it are often unsuccessful (Erickson, 1992; Fuchsberg, 1993; Kendrick, 1993). As a result, the literature contains reports of several cases in which the implementation of TQM has failed. Hubiak and O'Donnell (1996), for example, have asserted that approximately two-thirds of companies in USA have either failed or stalled in their attempts to implement TQM. Many of these TQM programmes have

been cancelled, or are in the process of being cancelled, as a result of the negative impact on profits (Hubiak and O'Donnell, 1996). Many organizations and companies have difficulties in implementing TQM. As a result many people are sceptical about TQM. While TQM has been widely applied in the management of change, and is likely to remain a priority into the next century, failure rates at times above 75 per cent give cause for concern (Guangming *et al.*, 2000).

In this article, the author attempts to investigate the success of TQM and its implementation barriers in health care services organizations. The results will help organizations in planning better TQM designs. Researchers will be able to use this research results for developing quality management theory and construct a model for choosing and implementing a culturally suitable TQM approach to avoid some of these problems. Health care managers will be able to use the results to evaluate their TQM implementation so as to target improvement areas. This research provides useful insight into the organization that uses TQM as an organization development program.

Methodology

Purpose and objectives

The purpose of this descriptive and cross-sectional study was to investigate the success of TQM and barriers to its successful implementation in health care organizations in Isfahan province, Iran, 2004.

Setting

The health care settings for this study included 90 health care organizations which implemented TQM within Isfahan province.

Instruments

Three questionnaires were used for data collection. The questionnaire packages contained a cover letter that briefly explained the purpose of the study and the mechanisms to maintain confidentiality. Further explanations of the variables were given when requested. Data were collected through a mailing of the questionnaires, cover letter, and return envelope to the 90 managers of health care services organizations. A second questionnaire, cover letter, and return envelope was mailed approximately three weeks after the initial mailing to the non-respondents. A third mailing was made to those in the sample who did not respond to either the first or second mailing. The three mailings yielded a 61 per cent response rate. There were no significant differences noted between early and late respondents. Data were collected for approximately three months.

Demographic questionnaire

The demographic questionnaire with 15 items furnished the researcher with the respondents' biographical and educational information, managerial working experience and the techniques they are using in the health care organizations. There were also some questions about the kind of health care organizations the respondents were working in, their activities and so on.

TQM success questionnaire

A self-administrated questionnaire was used to assess the level of TQM effects on health care organizations performance. The study began with the development of the questionnaire to measure TQM success in health care services organizations. First, the domains of TQM principles were defined. To accomplish this, a literature review was conducted to identify the TQM principles dimensions. From each study, a list of dimensions was created. Using a Delphi technique, the health care managers and quality experts' opinions were used in completing this list. Eight most common principles of TQM were chosen for inclusion in the questionnaire. These included: leadership and management, strategic planning, focus on customer and market, focus on employees, focus on suppliers, focus on material resources, process management, and performance results.

A total of 68 items were compiled for inclusion in the first version of the questionnaire. The background of the study as well as the chosen domains and the initial item pool were presented to a group of quality management experts and hospital managers and employees for comments and criticisms. After this procedure, the number of items were decreased and modified to improve the questionnaire and make it easier to complete. The draft questionnaire contained 55 items. It was decided to use six point Likert scales to measure the responses to each item (5 = very high, 4 = high, 3 = medium, 2 = low, 1 = very low and 0 = no effect). The initial item pool was administered to a small sample of ten health care managers. Inter-item correlations were calculated separately for each of the eight domains to identify redundant items, those with a correlation coefficient smaller than 0.6 were eliminated from the questionnaire. Thus a total of 52 items were retained in the final version of the questionnaire.

TQM implementation barriers questionnaire

A self-administrated questionnaire was used to assess the level of barriers and problems in implementation of TQM. The items of this questionnaire were gathered again by means of a Delphi technique and literature review. In total, five domains of TQM barriers were defined. These included:

- (1) human resource problems;
- (2) performance appraisal problems;
- (3) strategic problems;
- (4) structural problems; and
- (5) process problems.

A total of 40 items were compiled for inclusion in the first version of the questionnaire. The background of the study as well as the chosen domains and the initial item pool were presented to a group of quality management experts and hospital managers and employees for comments and criticisms. After this procedure, the number of items were decreased and modified to improve the questionnaire and make it easier to complete. The draft questionnaire contained 33 items. It was decided to use six point Likert scales to measure the responses to each item (5 = very high, 4 = high, 3 = medium, 2 = low, 1 = very low and 0 = no effect). The initial item pool was administered to a small sample of ten health care managers. Inter-item correlations were calculated

separately for each of the five domains to identify redundant items, those with a correlation coefficient smaller than 0.6 were eliminated from the questionnaire. Thus a total of 30 items were retained in the final version of the questionnaire.

The finalized questionnaires were then distributed to the health care managers and quality managers who were asked to indicate the level of their ideas about TQM success (the effects of TQM on organizations performance) and its implementation barriers in their organizations by circling the response that best described their opinion.

Validity estimates

Content and face validity were established by a panel of experts consisting of management and hospital management experts.

Reliability estimates

A reliability coefficient indicates the proportion of measured variance that is a true score, as opposed to random error. Cronbach's alpha was used to assess instrument reliability. An alpha value of 0.70 or higher was considered as acceptable reliability for group. The reliability coefficient was 0.87 and 0.92 for the TQM success and TQM implementation barriers survey questionnaires respectively. The instrument was pilot tested with a group of health care services managers (ten persons).

Acceptability estimates

It is essential that instruments such as TQM success and TQM implementation barriers questionnaires are acceptable to participants in order to obtain high response rates, thus making trial results easier to interpret, more generalised and less prone to bias from non-response (Fitzpatrick *et al.*, 1998). Acceptability was assessed in terms of refusal rates, and rates of missing responses. A total of 55 (61 per cent) health care managers filled out the questionnaires. Missing data analysis showed that 100 per cent of respondents had no missing values for the entire set of 82 items. The main reasons for non-participation were the refusal to take part in the study.

Data collection

Data collection was accomplished through distribution of the questionnaires, to the 90 health care managers and quality managers in Isfahan province, Iran.

Analysis of data

All data were analyzed using the Statistical Package for the Social Sciences (SPSS 11). Appropriate statistical procedures for description and inference were used. The missing values were checked prior to further statistical analysis. Because each domain consisted of a different number of items, a normalization procedure was applied to correct for the domain length. In order to normalize the Likert scale on 0-5 scales for each domain, the sum of raw scores of items in each domain divided to the number of items in those domains and for overall TQM success and barriers, sum of raw scores of items divided to 52 and 30 respectively. Higher scores in the domains indicate better TQM results in the first questionnaire and more problems in the second one. The differences between groups were tested with the chi-square, Mann-Whitney and Kruskal Wallis tests. The correlation coefficients were calculated to evaluate the

relationship between variables. Forward conditional logistic regression analysis was used to identify the most important predictor domains in overall TQM success and barriers. Data were presented as the mean \pm standard deviation (SD) and percentage. *p* values less than 0.05 were considered as significant.

Results

In this survey the results are:

- 90 questionnaires sent to the health care organizations which implemented TQM and after several times follow up, 55 questionnaires were returned and were analyzed. 63.6 per cent of respondents had permanent employment (none contracted). Table I shows the demographic characteristics of respondents.
- 1.8 per cent of health care organizations had ISO 9001:2000 Certification and 25.4 per cent of these organizations have done activities to get this certification. 87 per cent of health care organizations have a Quality Improvement Committee (QIC). In 81.8 per cent of organizations senior managers were committed to TQM.

Demographic parameters	Percentage
<i>Sex</i>	
Male	67.3
Female	32.7
<i>Marital condition</i>	
Single	12.7
Married	87.3
<i>Age</i>	
Under 20 years	0
Between 20-30 years	10.9
Between 31-40 years	45.4
Between 41-50 years	32.8
Above 50 years	10.9
<i>Work experience</i>	
Under 5 years	16.4
Between 5-10 years	21.8
Between 11-15 years	20
Between 16-20 years	10.9
Between 21-25 years	12.7
Between 26-30 years	10.9
Above 30 years	7.3
<i>Graduation degree</i>	
Diploma	1.8
Post-diploma	1.8
Bachelor of Science	50.9
Master of Science	9.1
Doctor of Medicine	36.4
Doctor of Philosophy	0
<i>Graduation degree program</i>	
Health care services management	23.6
Public management	3.6
Others (medicine, pharmacy, nursing . . .)	72.8

Table I.
The demographic parameters of healthcare organization managers

Participative management and business process reengineering techniques were implemented in the most of health care organizations (Table II). A total of 67.2 per cent of health care managers took part in TQM, 38.1 per cent in productivity management, 25.4 per cent in MIS and human resource management educational programs. Of the managers 40 per cent had knowledge in ISO 9000 series, 5.4 per cent in ISO 14000, 7.2 per cent in ISO 18000, 9.1 per cent in six sigma, 7.2 per cent in European quality standards, 27.2 per cent in seven quality control tools, 56.3 per cent in TQM tools, 14.5 per cent in bad quality costs, 18.1 per cent in quality statistical control and 21.8 per cent in project planning and control techniques.

The mean score of TQM success in health care organizations was 3.50 ± 0.68 (medium) from five credits (Table III). Implementation of TQM was very low, low, medium, high and very high successful respectively in 3.6, 10.9, 21.8, 56.4 and 7.3 per cent of health care organizations. Implementation of TQM principle: leadership and management were very low, low, medium, high and very high successful respectively in 3.6, 7.3, 23.6, 54.6 and 10.9 per cent of health care organizations. Implementation of TQM principle: strategic planning was very low, low, medium, high and very high successful respectively in 3.6, 10.9, 36.4, 38.2 and 10.9 per cent of health care organizations. Implementation of TQM principle: focus on customer was very low, low, medium, high and very high successful respectively in 3.6, 5.5, 27.3, 45.4 and 18.2 per cent of health care organizations. Implementation of TQM principle: focus on employees was very low, low, medium, high and very high successful respectively in 3.6, 7.3, 23.6, 49.1 and 16.4 per cent of health care organizations. Implementation of

Techniques	Per cent	Mean \pm SD
Quality management systems	14.5	3.82 ± 0.12
Autonomous work group	23.6	3.82 ± 0.67
Quality control circles	21.8	3.61 ± 0.54
Total productive maintenance	10.9	3.57 ± 0.50
Quality function deployment	20	3.54 ± 0.44
Five S	14.5	3.52 ± 0.24
Suggestion system	50.9	3.51 ± 0.42
Marketing, production and purchasing control	5.4	3.50 ± 0.44
Just-in-time system	7.2	3.48 ± 0.45
Business process reengineering	27.2	3.45 ± 0.45

Table II.
The percentage of managerial techniques which is used in health care organizations and the mean score of TQM according to implementing these techniques

TQM principles	Mean	SD
Process management	3.74	0.74
Focus on customer and market	3.68	0.79
Focus on employees	3.66	0.69
Leadership and management	3.59	0.74
Strategic planning	3.51	0.77
Focus on material resources	3.44	0.72
Performance results	3.32	0.76
Focus on suppliers	3.27	0.76
Total	3.50	0.68

Table III.
The mean success of TQM principles in Isfahan health care organizations

TQM principle: focus on suppliers was very low, low, medium, high and very high successful respectively in 12.7, 14.6, 23.6, 41.8 and 7.3 per cent of health care organizations. Implementation of TQM principle: focus on material resources was very low, low, medium, high and very high successful respectively in 3.6, 18.2, 36.4, 32.7 and 9.1 per cent of health care organizations. Implementation of TQM principle: process management was very low, low, medium, high and very high successful respectively in 3.6, 7.3, 23.6, 47.3 and 18.2 per cent of health care organizations. Implementation of TQM principle: performance results were very low, low, medium, high and very high successful respectively in 7.3, 10.9, 36.4, 38.1 and 7.3 per cent of health care organizations.

The mean score of TQM success in health care organizations which is their top managers were committed and involved strongly to quality management was higher than other organizations with lower top management commitment and involvement (3.37 ± 0.70 in comparison with 2.86 ± 0.98). The differences between values were statistically significant ($p < 0.05$). The mean score of TQM success in health care organizations which had ISO 9001/2000 quality system certification or had activities to get this certification was 3.20 ± 0.76 while in other health care organizations was 3.12 ± 0.80 . Significant differences were obtained between values ($p < 0.05$).

In correlation analysis between success of TQM and TQM principles, process management ($r = 0.966$), and focus on employees ($r = 0.962$) had positive and most effect, and focus on material resources ($r = 0.886$), and focus on suppliers ($r = 0.880$) had less effect respectively. This relationship was statistically significant in all of cases ($p = 0.00$).

The mean score of TQM implementation problems in health care organizations was 3.01 ± 0.83 (medium) on a five scale (Table IV). Implementation problems of TQM was very low, low, medium, high and very high respectively in 16.4, 18.2, 34.5, 25.4 and 5.5 per cent of health care organizations. structural problems of TQM was very low, low, medium, high and very high respectively in 20, 20, 45.4, 9.1 and 5.5 per cent of health care organizations. process problems of TQM was very low, low, medium, high and very high respectively in 20, 23, 40.7, 14.5 and 1.8 per cent of health care organizations. strategic problems of TQM was very low, low, medium, high and very high respectively in 20, 16.4, 38.1, 16.4 and 9.1 per cent of health care organizations. Performance appraisal problems of TQM was very low, low, medium, high and very high respectively in 14.5, 16.4, 32.7, 29.1 and 7.3 per cent of health care organizations. Human resource problems of TQM was very low, low, medium, high and very high respectively in 10.9, 12.7, 30.9, 29.1 and 16.4 per cent of health care organizations.

In correlation analysis between barriers of TQM Implementation and its problems dimensions, human resource problems ($r = 0.960$), strategic problems ($r = 0.951$), and

TQM barriers	Mean	SD
Human resource problems	3.37	0.92
Performance appraisal	3.05	0.94
Strategic problems	2.97	0.69
Structural problems	2.87	0.88
Process problems	2.80	0.86
Total	3.01	0.83

Table IV.
The mean implementing
problems of TQM in
Isfahan health care
organizations

structural problems ($r = 0.940$) had positive and most effect, and performance appraisal ($r = 0.930$), and process problems ($r = 0.911$) had less effect respectively. This relationship was statistically significant in all of cases ($p = 0.00$).

In 96.4 per cent of health care organizations TQM increased top managers' commitment to quality and customer satisfaction. In 67.2 per cent of organizations TQM developed employees' knowledge level and their innovation. In 100 per cent of organizations TQM brought about continuous quality improvement and learning about reduction of waste. In 94.5 per cent of organizations TQM lead to documentation and investigation of customers' complaints. In 96.4 per cent of organizations TQM created development in technology and research and development (R&D) activities. In 100 per cent of organizations TQM brought about an increase in safety awareness and a reduction of dangers and potential risks of services. In 100 per cent of health care organizations TQM lead to improved relationships between employees and managers.

More than 90 per cent of health care organization managers believed that the main barriers to successful implementation of TQM included the inflexibility of the organization toward environmental and technological changes; errors in appropriate process formulations for organization mission and functions; and lack of clarity in the responsibilities and functions of organization departments.

Discussion

In Iran, 4.4 per cent of Gross National Product (GNP) is allocated to the health care sector and a significant portion of government employees work in this sector. It is understandable therefore that health care service managers should be concerned with the productivity, effectiveness and efficiency principles. TQM is a useful strategy which helps organizations to achieve their objectives effectively and efficiently. TQM can be viewed as a set of philosophies, methods and techniques used to guide organization in continuous improvement of all aspects of its business (Mosadegh Rad, 2004a).

The results of this research have shown that the overall success of TQM from the viewpoints of managers of Isfahan health care organizations was medium. TQM had the most effects on process management, focus on customers and focus on employees. TQM leads to improvements in some area such as senior management commitment to quality and customer satisfaction, managers' direct participation in improving organization management system, clarity of process and activities procedure, measuring customer satisfaction, improving the relationship between employees and organization, Development of knowledge and merits of employees, determining personnel performance criteria and measuring it as personal and group work performance.

TQM has become one of the competitive strategies of choice during the 1990s. Despite some research that shows positive results (e.g. Mann and Kehoe, 1994; Ollila, 1995; Buttle, 1997; Radovilsky *et al.*, 1996; Kekäle *et al.*, 1999; Hendricks and Singhal, 1996; Gunasekaran, 1999; Hansson and Eriksson, 2002; Tobin, 1990), there is simultaneously growing evidence suggesting that TQM has had major problems (Plowman, 1990; Kearney, 1992; Cruise O'Brien and Voss, 1992; Wilkinson *et al.*, 1992a,b; Van Allen, 1994; Mann and Kehoe, 1995; van Donk and Sanders, 1993; Kekäle and Kekäle, 1995; Erickson, 1992; Fuchsberg, 1993; Kendrick, 1993; Hubiak and O'Donnell, 1996; Powell, 1995; Krumwiede *et al.*, 1998).

The failure of TQM can be due to two main reasons: methodology and implementation. Some times the techniques and tools which are used is not suitable or enough for improvement of processes. So, This TQM model and strategy can not succeed. On the other hand, the failure may be because of inappropriate implementation of a good model of TQM. The failed implementation of TQM is due to several factors. Besides the difficult achievement of TQM practices, one of them is that TQM has been a rather diffuse concept, with many vague descriptions, and that management does not have a complete picture of what TQM really means (Hellsten and Klefsjö, 2000). Eskildson concluded that knowledge of the implementers of TQM was frequently superficial; improvement goals are vague, non-existent or short-termed (Eskildson, 1994). Another one is that the lack of realization that implementation of TQM means a cultural change (Hansson and Klefsjö, 2003). Lack of consistent top management support, inadequate knowledge and understanding about TQM, lack of a guiding organization to keep managers on track and focused on the necessary changes, fear and resistance to change, lack of a long-term focus, politics and turf battles, employee apathy, inadequate focus on the latest market environment and on actual customer responses and inadequate planning are the other obstacles of TQM success (Whalen and Rahim, 1994; Poirier and Tokarz, 1996).

Human resources management and employee involvement and commitment to the goals of the TQM process are critical in TQM success (Shetty, 1993; Lawler *et al.*, 1995; Buch and Rivers, 2002; McAdam and Kelly, 2002). Recent studies identified employee empowerment as a critical factor of TQM implementation (Martinez-Lorente *et al.*, 1998; Li *et al.*, 2001; Claver *et al.*, 2001; Davidson *et al.*, 2001; Dale *et al.*, 2001; Zhang *et al.*, 2000; Rao *et al.*, 1999; Westlund and Lothgren, 2001). Commitment and involvement of top management is also highlighted as a critical factor by several empirical studies (Ramirez and Loney, 1993; Zairi and Youssef, 1995; Ali, 1997; Ahire *et al.*, 1996; Ahire, 1996; Dayton, 2001; Saraph *et al.*, 1989; Flynn *et al.*, 1994; Thiagarajan, 1996; Rao *et al.*, 1999; Zhang *et al.*, 2000; Pun, 2001; Sureshchandar *et al.*, 2001; Lau and Idris, 2001; Li *et al.*, 2001).

In this study, human resources problems were the most important barriers to successful TQM implementation. Human resources barriers in these organizations included lack of effective and efficient employees for implementation of TQM, lack of non-monetary motivation mechanisms for developing employees' participation in TQM activities, low wages and salaries and cultural problems.

Numerous studies carried out have shown that human resources problems such as non-participation of employees, low knowledge and experience about TQM, lack of work discipline, lack of team orientation, resistance and disregard of the employees, lack of cultural and geographic homogeneity, do not accept training well, changing employees work habits, lack of time, the tedious aspect of writing procedures and lack of motivation are barriers in implementing successful TQM (Young, 1992; François *et al.*, 2003; Huang *et al.*, 1999).

Two distinctly different reasons for employees' resistance to TQM are as follows. Employees may perceive TQM as controlling rather than empowering. It seems that TQM asks them to work harder for fewer rewards. It may be that TQM is seen as empowering but not all individuals want enriched, empowered jobs. For resolving these problems, health care managers should clarify organizations' quality strategies and policies, motivate employees in order to participate actively in quality planning,

decision making and processes improvements, build a team work culture, use employee ideas and suggestions in quality management and provide the appropriate feed back.

Several studies revealed that training and education are critical to successful TQM implementation (Zhang *et al.*, 2000; Thiagarajan and Zairi, 1998; Quazi and Padibjo, 1998; Rao *et al.*, 1999; Zhang *et al.*, 2000; Yusof and Aspinwall, 2000; Black and Porter, 1996; Tamimi, 1998; Pun, 2001; Calisir *et al.*, 2001; Dayton, 2001). The most effective way to spend TQM introduction funds is by training top management, and people involved with customers. To adopt the TQM philosophy in health care services organizations, top management must provide the resources to educate the workforce. The effectiveness of TQM arises from leadership efforts toward the simultaneous creation of a cooperative and learning organisation to facilitate the implementation of process-management practices, which, when implemented, support customer satisfaction and organizational survival through sustained employee fulfilment and continuous improvement of processes, products and services. A successful TQM environment requires a committed and well-trained work force that participates fully in quality improvement activities. Such participation is reinforced by reward and recognition systems which emphasize the achievement of quality objectives. Ongoing education and training of all employees supports the drive for quality. Employees are encouraged to take more responsibility, communicate more effectively, act creatively, and innovate.

Teamwork is a critical factor in TQM (Crosby, 1989; Kanji and Asher, 1993; Cebeci and Beskese, 2002; McAdam and Kelly, 2002; Everett, 2002; Mehra *et al.*, 1998). When TQM is successful, employees at every level participate in decisions affecting their work. The involvement of the top management, the middle management, and the workforce are all vital for implementing TQM. The most common vehicle for employee participation is a team. A participative work culture is encouraged when quality becomes everybody's responsibility. In many cases, the most difficult aspect of TQM is to create an environment of "all one team". Everyone throughout the organization must work together to improve processes and to execute them with energy and efficiency. It requires a fundamentally different view of the relationship between employees and the organization. In order for all employees to be committed to the organization, the organization must be committed to its employees. TQM is an approach to management which focuses on giving top value to customers by building excellence into every aspect of the organization. This is done by creating an environment which allows and encourages everyone to contribute to the organization and by developing the skills which enable them to scientifically study and constantly improve every process by which work is accomplished. It is not easy to introduce TQM. An open, cooperative culture has to be created by management. Employees have to be made to feel that they are responsible for customer satisfaction. They are not going to feel this if they are excluded from the development of visions, strategies, and plans. It is important they participate in these activities.

The organizational structure is also important for implementing TQM. Oakland and Porter (1994) consider that one of the responsibilities of senior management at the early stage of initiating the TQM program is the set up of a quality organizational structure. Such structure is needed to create a framework, which will enable quality improvement to develop and flourish (also Easton, 1998; Oakland, 2000). They consider the quality

organizational structure as a key element in ensuring successful implementation of TQM.

TQM programs are more likely to succeed if the prevailing organizational culture is compatible with the values and basic assumptions proposed by the TQM discipline (Kujala and Lillrank, 2004). TQM is a description of the culture, attitude and organization of a company that aims to provide, and continue to provide, its customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with things being done right the first time, and defects and waste eradicated from operations. There are four interrelated classifications of organizational change: change as structure (or "functional change"), process, values, or power distribution. Of these, it is contended, TQM adequately addresses only process change, with incidences of failure closely correlated to the application of process-based TQM techniques in change contexts characterized by structure, values or power. For TQM to be applied successfully, either an approach is required which adequately addresses all types of change context (a so-called "systemic" approach), or its application needs to be restricted to those contexts where process dominates (Guangming *et al.*, 2000).

Implementing an effective and efficient system of quality management, continuous monitoring and evaluation of processes and providing good feedbacks are the most important factors in success of TQM. Self-assessment highlights strengths and improvement opportunities, and drives continuous improvement (Oakland, 2000; Conti, 1999). In this survey, the performance appraisal problems were important barriers of TQM success implementation. Performance appraisal problems in these organizations were as following lack of mechanisms for measuring organization's activities, Lack of continuous quality control, and Lack of feed back from customers because of their low information about health care services.

In all organizations there are processes by which things get done. In TQM the emphasis is on studying these processes and on executing them more and more effectively to provide customers with products and services of ever increasing value at ever lower costs. The focus in TQM is on quality of every product and service and the quality of every process. To achieve this higher quality, every process, beginning with the most important, is studied using the scientific approach. Processes are described with flow charts, problems are identified, the root causes of problems are determined through careful research and new fool-proofed systems are developed. Every process is brought under statistical control and variations are further reduced, well beyond specifications. A quality council and support team is a key factor for successfully implementing TQM. In implementing TQM, the development of procedure and documentation are vital for control and improvement.

Process barriers in Isfahan health care organizations included Fault in process formulation according and appropriate for organization mission and functions, disintegration between process in different departments of organization, overlapping of activities in processes, non clarity of customer and provider in processes, unnecessary complexity of processes and so on. Determining the initial, critical and important processes in health care organizations, clarifying the regulations and strategies, monitoring and evaluation of quality activities by employees and introducing systematic approach to health care organizations' structure will be helpful for success of TQM. Pay attention to quality of services provided to patients.

Standardization and developing standard, effective and efficient health care procedures according to accepted standards are important for consideration in process management. TQM can improve organizational performance through improving the processes (Mosadeghrad, 2003a, b).

Strategic problems were important barriers of TQM success in this survey. These barriers included inflexibility of organization toward environment and technologies change; lack of legal elements for providing quality services; non clarity of organization objectives; lack of planning and long-term policies; lack of mechanisms for strategy formulating for managing the organization; non clarity of organization policy about TQM programs.

A successful TQM implementation requires the whole workforce to be ready for change, a strategic planning to be guidelines for execution, and an effective quality organization to be channels for communication. Quality gurus and writers strongly emphasize the importance of strategic planning process based on total quality (Deming, 1986; Zairi, 1994, 1999a; Oakland, 1993; James, 1996; Ahire *et al.*, 1996; Sinclair and Zairi, 2001; Dayton, 2001; Martinez-Lorente *et al.*, 1998; Sureshchandar *et al.*, 2001; Crepin, 2002; Hitchcock and Willard, 2002).

The emphasis on customer satisfaction or customer-driven quality is considered by many gurus and writers as a major success of the quality management effort (Deming, 1986; Crosby, 1989; Oakland and Porter, 1994; Rao *et al.*, 1996; Spring *et al.*, 1998; Oakland, 2000; Kanji, 1998a, b; Zairi, 1999a, b, 2000; Winser and Corney, 2001; Li *et al.*, 2001; Nakata, 2002; Hitchcock and Willard, 2002).

No attention to patients and their needs and wants is another reason for TQM failure in health care organizations (Noury, 2001; Amerion *et al.*, 2002; Behshid, 2003; Parvizy, 2001). For resolving this problem, health care managers should determine indicators and tools for receiving patients' ideas and suggestions and assess their satisfaction level about the health care services and try to improve their satisfaction. Environmental influences such as, the perceived pressure from patients and third parties have little influence on the implementation of quality management in health care organizations (Wagner *et al.*, 2001).

To achieve quality, all parties including the patients, employees, health care managers, consultants, contractors, entrepreneurs, suppliers, and the governing bodies need to collaborate and commit to achieving quality. The results have shown that in health care organizations using participative management, TQM had better effects on overall performance. The use of a suggestion system did not lead to good results though quality circles and autonomous groups had more synergistic effects. It seems that health care managers do not use suggestion system appropriately and systematically, so employees are not interested in this participative management technique. Therefore, they prefer to do quality efforts together in the quality groups. Managers should give them more autonomy to do their own works. The results also have shown that for health care organizations in which managers were committed to TQM, its success was greater than in other organizations with a lower management commitment. Those organizations had fewer problems too.

In this survey, besides using participative management, using quality management systems, total productive maintenance, quality function deployment and five S enhance the success of TQM. Berces and Hegyi (2001) believed that business process

reengineering, applying benchmarking or supporting information technology play an important role in enhancing the success of TQM.

Several critical factors are essential if TQM is to be successfully implemented. These include the support and commitment of top management, visionary leadership, effective management of human resources, full involvement of the entire workforce, continuous improvement and a corporate culture of commitment to quality, good financial management, customer driven ways of thinking, customer satisfaction, Coherence and simple rigorous method, voluntary participation and effective incentives, leadership qualities of those who ran the quality projects and multidisciplinary teams (Joseph *et al.*, 1999; Sureshchandar *et al.*, 2001; Feigenbaum, 1993; Juran, 1988; Magurez *et al.*, 2001; Mosadegh Rad, 2003). Effective communication is important for the success of any quality initiative and is critical from the beginning of a change effort (Martinez-Lorente *et al.*, 1998; Sureshchandar *et al.*, 2001; Magurez *et al.*, 2001).

McAdam and McKeown (1999) have concluded that customer focus, employee involvement, empowerment and teamwork, measurement tools, training, quality systems, and top management commitment are all key factors in the successful implementation of TQM. According to Rivers and Bae (1999), successful implementation of TQM requires a transportation of organizational information system infrastructure and other management systems so that they are aligned with the new TQM environment. Powell (1995) suggested that tacit resources such as organizational culture, commitment, empowerment and business processes drive TQM success. Sahney and Warden (1991) pointed out key concepts to implementation TQM, which include top management leadership, creating a corporate framework for quality, transforming corporate culture, a collaborate approach to process improvement, and integration with the process. However, for TQM to be successful, management processes must be aligned and integrated within a TQM environment. For example, the bureaucratic system must be transformed, strategies must be aligned, and the information system must be integrated to ensure quality success. Some studies showed that it is important for top management take a leadership role and show a strong commitment at the time of implementing TQM (Lee and Asllani, 1997; Rivers and Bae, 1999; Powell, 1995).

Conclusions and recommendations

In conclusion this study provides information about the success of TQM and barriers to its successful implementation in health care services organizations in Isfahan province, Iran. The barriers to successful implementation TQM in this survey included lack of senior management commitment and involvement, instability of senior managers, inability to change organizational culture, inflexibility of organizational culture toward quality changes, inflexibility of organization toward environment and technologies change, incorrect planning, lack of continuous education and training for employees and managers, inadequate knowledge or understanding of TQM philosophy, poor team work and participation, inappropriate evaluation of team works, poor accessibility to data and results, and lack of attention to the needs of internal and external customers.

For TQM to be successful, top management leadership and commitment to lead the quality drive and their visible involvement in quality and customer satisfaction, top

management stability, strategic quality planning (policy development an effective deployment of goals), organizing for quality to manage the organization's quality journey, using people from throughout the organization, maximizing employees' commitment and understanding of the vision, values and quality goals of the organization, developing a team work and quality culture, focus on customers (internal and external), customer-driven quality, fast response, communication of mission statement, and management by fact to solve problems, continuous improvement, aligning process to improve customer satisfaction, focus on suppliers and partners, and monitoring and evaluation of quality are all necessary.

Limitations

This study was conducted in health care organizations which implemented TQM in Isfahan province, Iran. This province is one of the most important provinces of Iran geographically, demographically and politically. Therefore, the results of the study can only be generalized to health care organizations in Iran but the findings may well have relevance on a broader scale.

This study may serve as a foundation for future studies in different countries. So, it is recommended that this study be repeated in different countries and contexts. The results of such studies can be very fruitful for developing a model of TQM that can be implemented easily, effectively, efficiently and successfully in a cross-cultural context.

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