

# EFQM-based Self-assessment of Quality Management in Hospitals Affiliated to Kerman University of Medical Sciences

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## Abstract

**Background and Objectives:** There is a growing tendency in Iran's health sector for adoption of standard excellence models for improving quality in healthcare organizations. The European Foundation of Quality Management (EFQM) model is a widely used framework for continuous quality management within healthcare facilities. The purpose of this article is to extend the view of current status of quality management in Iran's hospital industry by reporting the details of an EFQM-based self-assessment of quality management in hospitals of Kerman University of Medical Sciences.

**Methods:** A cross-sectional study was conducted over the period of October to December 2011 by enrolling heads of departments and chief executive officers of all the four university hospitals of Kerman, the capital of Kerman province in southern Iran (n = 69). The standard EFQM questionnaire was used to measure quality management. Reliability of the assessment tool was determined by calculating Chronbach's alpha coefficient. The data was analyzed using descriptive statistics.

**Findings:** The criteria 'Process' and 'Customer results' scored above 60%, and other criteria scored within the range of 50% to 60%. While 'Process' gained the highest score of 62.9%, the lowest score of 52.1% was received by 'Key performance results'. Scores appeared to be overestimated compared to those gained by pioneer healthcare settings in developed countries. However, the scores were found more realistic in comparison with those in precedent domestic studies, suggesting a trend of gradual improvement of quality management knowledge and self-assessment skill.

**Conclusions:** The data suggest that the criteria 'People' and 'Resource and Partnership' are of a high priority for improvement in order to reach satisfactory 'Key performance results'.

**Keywords:** Self-assessment, Continuous Quality Management, EFQM, Hospital

## Background and Objectives

Healthcare Organizations (HCOs) are complex and multi-dimensional organizations with great responsibilities towards public health. In a world undergoing accelerated technological, cultural and socio-economic changes, HCOs have to adopt appropriate organizational improvement policies to be able to fulfill their responsibilities while maintaining an economically viable and sustainable development. The first step toward this aim is fair self-assessment of strengths, potentials and weaknesses of the organization from different aspects relating to the organization's mission, goals, and values. Self-assessment is a systemic and dynamic process

that can continuously feed insight into the areas requiring improvement and processes and actions needed for driving improvements [1]. The extent and significance of the insights resulting from self-assessment is dependent upon comprehensiveness, assessment power and validity of the applied evaluation approach. In 1991, the European Foundation of Quality Management (EFQM), supported by the European Organization of Quality (EOQ) and the European Commission, introduced an Excellence EFQM Model as an assisting tool for organizations to improve their quality [2]. EFQM is a multi-dimensional non-prescriptive framework for management and continuous improvement of quality. The model is now used by organizations of different types, sizes and structures, as a reference framework for quality policy [1, 3].

Among organizations that have used the model for their quality assessment and improvement are HCOs. Currently, EFQM is widely used in European HCOs for

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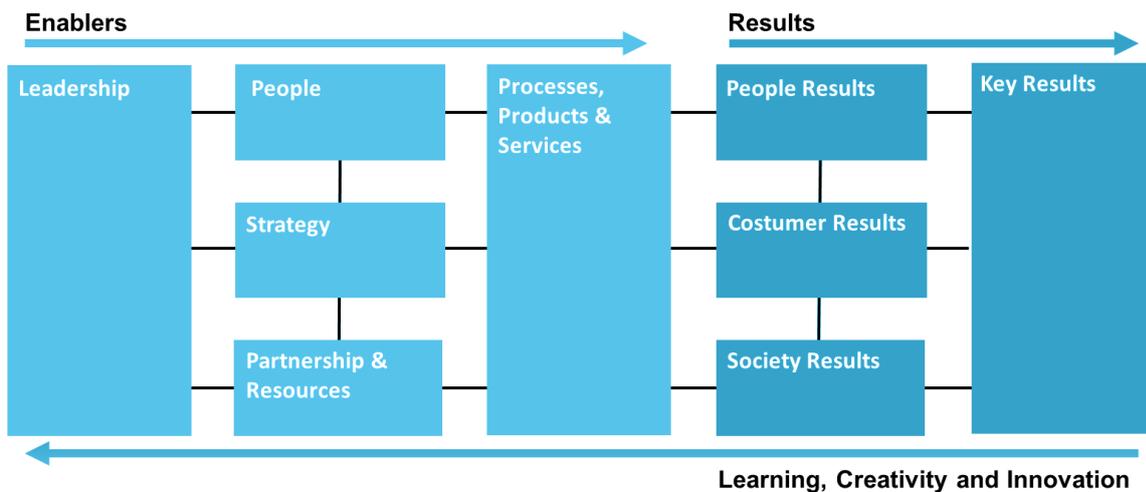


Figure 1 EFQM Excellent Model (adapted from EFQM, 2003)

self-assessment of quality. Hospitals, outpatient services, acute care, rehabilitation clinics, primary care centers and specialized services have used this approach [4]. Studies have shown that the EFQM approach provides a broader framework for evaluation and improvement of quality as compared to parallel approaches such as the American Malcolm Baldrige National Quality Award (AMBNQA) in the USA, and Deming Prize (DP Model) in Japan [4]. Evidence documented in international academic literature supports the notion that not only is the EFQM model applicable to healthcare, but also its use can lead to improvement in the quality of HCOs and quality of healthcare services [1, 4-9].

EFQM is based on fundamental Excellence concepts that form a theoretical framework supporting the model's structure and criteria [3]. These fundamental concepts include result orientation, consumer focus, leadership and consistency of focus, management by process and facts, people development and improvement, continuous learning, improvement and innovation, partnership development, and corporate social responsibility [3]. Based on these concepts, the model structure and content comprises nine criteria, which are clustered into two high-level groups of 'Enablers' and 'Results'. The enabler criteria address what an organization should do in terms of 'leadership', 'policy and strategy', 'people', 'partnership and resources', and 'processes' to achieve Excellence. The result criteria on the other hand, refers to what an organization achieves by improving enablers and include 'consumer results', 'people results', 'society results', and 'key performance results' [10, 11]. These nine criteria comprehensively describe the quality of the organization and identify the strengths and improvement requiring areas.

Figure 1 illustrates the EFQM model. The boxes show the criteria, and the arrows display the cycle of causes and effects. According to EFQM model, the organization's excellence is described as a result of a dynamic process through which enablers and results reciprocally improve each other [1].

While the health sector in developed countries has long been adopting standard models such as EFQM for assessing, managing and improving quality in HCOs, there are few reports on such efforts in developing countries. Iran has already taken an important step to encourage organizations to improve their quality by launching the Iran National Quality Award (INQA). The model was used in 2007 to evaluate quality management in the Central Hospital of National Iranian Oil Company [12]. As INQA is the Persian version of EFQM, it can be expected that the future quality improvement models for HCOs will also orient toward EFQM [13].

In Iran, a growing recognition is emerging within the healthcare sector regarding the importance of quality assessment and improvement using standard models. While a number of hospitals have already started the voluntarily use of the EFQM model, [14-17], this trend has gained further momentum following recent promotional activities by the Ministry of Health regarding Total Quality Management [18]. However, despite these initial efforts, the knowledge and skill of applying excellence models in Iranian HCOs is in its infancy, and the development of the field requires greater attention by policy-makers, HCOs' chief executive officers (CEOs), and academic investigators. As an extension of previous efforts to evaluate quality management in healthcare settings [12, 14-17], in the present article, we report the details of an EFQM based assessment of quality in the university hospitals

of Kerman, the capital of Kerman Province situated in the Southeast of Iran. We compare our results with those of precedent studies in Iran and other countries, and explore the implications of similarities and differences. We think that accumulation of such studies can gradually develop a nation-wide view of quality management in HCOs and provide increasing information on the strengths and improvement potentials of Iranian hospitals.

## Methods

This study was a descriptive cross-sectional study conducted over the period of October to December 2011. Our study population comprised of CEOs and executive managers of different departments of all university hospitals of Kerman, including Afzalipour, Shahid Beheshti, Shahid Bahonar and Shafa hospitals. Due to the limited number of subjects, no sampling was carried out and all the population was invited to participate. To obtain valid self-assessment results, an introductory workshop was conducted for the participants on the basic concepts of quality management, organizational excellence, and the EFQM model. A general EFQM questionnaire with necessary adjustments for the hospital environment was employed for data collection. Sixty-nine questionnaires were distributed and all questionnaires were returned (response rate = 100%). The reliability of the questionnaire was confirmed by obtaining Chronbach's alpha of 0.8. Data were analyzed using SPSS Software version 16.

## Results

The demographic data is given in Table 1. From the 69 participants, 77.8% were female, 42.3% were 30-40 years of age, 62.3% had 10-20 years of hospital work

**Table 1** Participants' Demographics

Variable	Number	%
Gender ( <i>n</i> = 69)		
Female	54	78.3
Male	15	21.7
Tenure ( <i>n</i> = 69)		
< 10 years	9	13
10-20 years	43	62.3
>20 years	17	24.7
Educational level ( <i>n</i> = 69)		
College	2	2.9
University	56	81.2
Postgraduate	11	15.9
Age (years, <i>n</i> = 69)		
<30	5	7.3
30-40	29	42
40-50	27	39.1
>50	8	11.6

experience, and 81.1% held a university-level degree.

The total score of the self-assessment obtained was 574. The mean scores criteria are summarized in Table 2 and Table 3. The identified areas of strengths and areas for improvement are given in Table 4.

Figure 2 compares the mean scores of criteria in Kerman's university hospitals with the corresponding scores in the healthcare facilities of Spain [9] and Germany [19]. Figure 3 compares the mean scores of criteria in our hospitals with those in previously studied Iranian hospitals.

**Table 2** Hospitals' scores of EFQM criteria

Criteria	Shahid Beheshti Hospital	Shahid Bahonar Hospital	Shafa Hospital	Afzalipour Hospital	Mean	Maximum Score
Leadership	56.4	65	61.4	67	59.9	100
Policy and Strategy	44.6	47.5	46.6	49.3	46.8	80
People	44.1	50	45.9	59	47.5	90
Partnership and Resources	42.6	49.8	47.9	54.5	48.9	90
Process	83.3	92.4	85.4	93.8	88	140
Customer results	120.2	123	117.2	131.2	124.4	200
People results	43.6	48.4	46.4	55	48.4	90
Society results	27.4	35	27.8	38.6	32.2	60
key performance results	66.9	84	73.2	90.8	78.2	150
Total Score	529	595	552	639	574	1000

**Table 3** Percents of hospitals' EFQM scores

Criteria	Shahid Beheshti Hospital		Shahid Bahonar Hospital		Shafa Hospital		Afzalipour Hospital		Total Mean	
	Score (%)	SD	Score (%)	SD	Score (%)	SD	Score (%)	SD	Score (%)	SD
Leadership	56.4	6.2	65	3.6	61.4	6.7	67	6.2	59.9	14.4
Policy and Strategy	55.8	5.1	59.4	4.5	58.2	6	61.6	6	58.5	10.8
people	49	5.1	55.6	3.3	51	6.9	56.6	4.9	52.8	10.4
Partnership an Resources	47.3	4.6	55.3	3.8	53.2	6.6	60.6	4.9	54.3	10.1
Process	59.5	5	66	3.6	61	6.7	67	6	62.9	11.5
Customer results	60.1	5.9	61.5	2.7	58.6	7	65.6	4.6	62.2	11
People results	48.4	6	53.8	5.8	51.5	7.3	61.1	6.8	53.8	14.6
Society results	45.7	4.5	58.4	4	46.4	7.2	64.4	4.4	53.7	11.8
Key performance results	44.6	6.2	56	5.5	48.8	7.4	60.5	5.8	52.1	14.7
Total Mean	52.9	5.7	59.5	3.3	55.1	5.9	63.9	4.4	57.4	11.3

## Discussion

In the investigated hospitals, the highest score of 'Enablers' was given to 'Process', while the highest score of 'Results', was received by 'Consumer result'. The lowest scores of the corresponding criteria were obtained by

'People' and 'Key performance results', respectively. This data suggests that while the hospitals have a good record of customer satisfaction, human resources issues and the factors influencing key performance results need further support from management.

**Table 4** The highest scored sub-criteria (the strength points) and the lowest scored sub-criteria (the areas for improvement)

	Sub-criterion	Criterion	Score (%)	SD
<b>Areas of strength (the high scored sub-criteria)</b>	▪ There is a comprehensive performance evaluation procedure	Process	90	10.9
	▪ Problems are addressed fundamentally	Process	90	6.2
	▪ Patient satisfaction has improved	Customer Results	90	6.3
<b>Areas for improvement (the lowest scored sub-criteria)</b>	▪ Key achievements are comparable with competitors	Key Performance Results	60	15.6
	▪ Key achievements including revenue, volume of services provided and market share have improved	Key Performance Results	63.3	16.4
	▪ Contribution of departments and activities to key results are identified	Key Performance Results	66.7	18.1

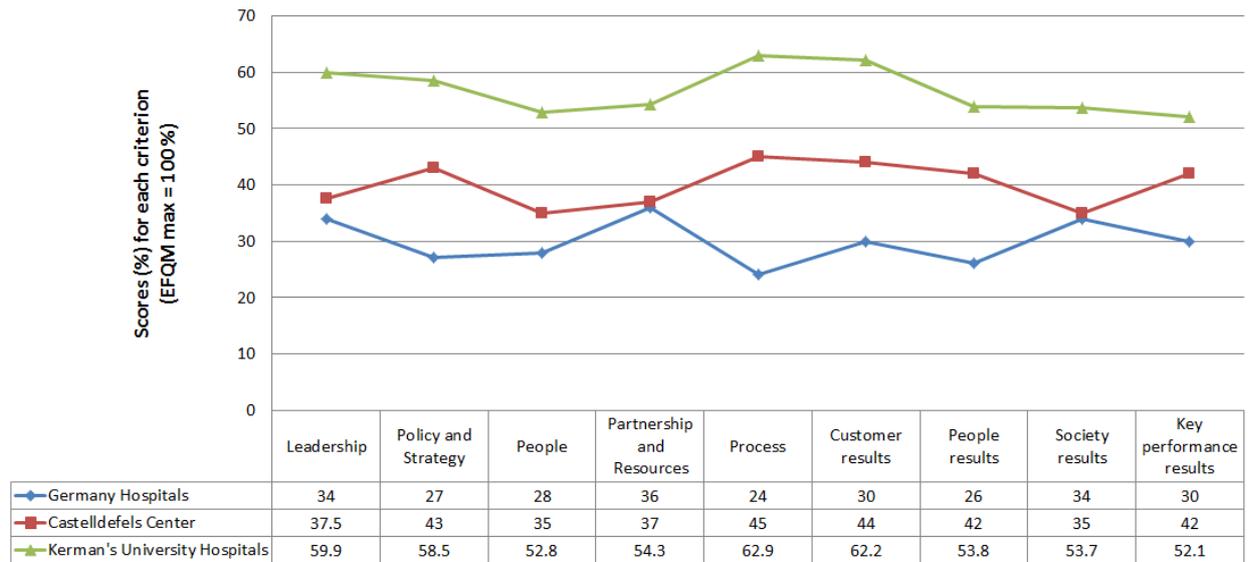


Figure 2 Comparison of the score of each criterion between Kerman's university hospitals, Castelldefels center, and pioneering German hospitals

We compared the scores of the EFQM model's criteria in this study with those in two European studies. The first study was the self-assessment of quality management in Castelldefels medical center, Spain with a mean score of 360.5 [9]. The second study included 17 pioneer hospitals in Germany with a mean EFQM score of 269 [19]. The comparative results show that the scores are overestimated in Kerman's university hospitals while the scores of criteria in German and Spanish studies fall within the ranges of 20-40 and 40-50, respectively. The corresponding scores in our study vary within the range of 50-70. The extent of overestimation can be better realized when con-

sidering that in the German study, nine hospitals received scores in the range of 201-300, five hospitals gained scores within 301-400, two hospitals fell below 200, and only a single hospital scored over 400. The phenomenon of overestimating HCOs's quality scores has already been observed in precedent studies in Iran [14-17]. The reason can be attributed to several factors such as the low familiarity of the managers with self-assessment, lack of knowledge of quality management and organizational excellence, and limited skill in quantitative estimation. The exaggerated estimation of the scores shows that the short training workshop held in advance of the survey may not



Figure 3 Comparison of the score of each criterion between Kerman university hospitals and previously studied Iranian hospitals

have been sufficient to adequately familiarize participants with the EFQM model and self-assessment skills. This highlights the necessity of extended training programs to enable hospital administrators to successfully assess and improve quality management.

Despite the abovementioned over-estimation, our study, however, produced more realistic results compared to previous domestic studies (Figure 3). Considering the date of publications, a clear trend toward level-headed assessment of quality management in Iranian HCOs can be observed. This can be in part due to the recent promotional activities of the Ministry of Health on TQM, and can promise further improvement in the future [18].

Regardless of the comparative implications of the score, the result of this study can be used to identify the areas of strengths and areas for improvement in the studied hospitals. According to the results, the participants believe that hospitals use comprehensive methods for evaluation of performance and efficiency of hospital systems and procedures. They believe that problems occurring are dealt with fundamentally to prevent their reoccurrence, and the hospitals have experienced progress in increasing patient satisfaction.

By contrast, the lowest scored sub-criteria show that managers perceive key achievement of their hospitals as not being comparable with competitors. This is congruent with low perception of managers about hospital achievement in terms of revenue, volume of services provided and market share. This finding recommends that hospitals' CEOs can take further steps toward Excellence by putting financial performance on priority agenda.

"The EFQM Model is based on the premise that enablers direct and drive the results" [4]. Based on this premise, our data points to improvement of the 'People' and 'Partnership and Resources' criteria as driving forces for higher 'Key performance results'. This notion is consistent with the demonstrated role of human resources in HCOs' overall productivity and performance [20]. Moreover, the critical role of efficient resources management in achieving higher income, higher volume of services provided and higher market share is well established.

## Conclusions

The EFQM-based self-assessment of quality in Kerman's university hospitals led to identification of the hospitals' strengths as well as the areas requiring improvement. We found that while healthcare facilities have been relatively successful in customer (patient) satisfaction and monitoring processes and procedures, key performance results in terms of revenue, volume of services provided and market share need increased support from management. Simultaneous low percentage occurrences of 'People' and

'Key performance results' suggest that issues concerning human resources management may have contributed to unsatisfactory outcomes. Our results also showed that while the scores of EFQM criteria were overestimated by participants, there is a trend of improvement in the realistic evaluation of quality in hospitals.

## Abbreviations

EFQM: European Foundation of Quality Management; HCO: Healthcare Organization; CEO: Chief Executive Officer

## Competing Interests

The authors declare that they have no competing interests.

## Authors' Contributions

RD, MHM and HI jointly designed the study, analyzed data and prepared the draft manuscript. MJS and SNH participated in literature review and data analysis. AT performed survey administration and data collection. All authors read and approved the final manuscript.

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