Self Assessment of Iran Universities of Medical Sciences Based on European Foundation for Quality Management (EFQM) and Iran Excellence Model

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Abstract: Introduction. Self assessment is provided by Excellence models covers all the factors affecting qualitative and quantitative improvement of organizational performance. The aim of this study was to evaluate performance of universities of medical sciences based on EFQM. *Methods*. This interventional study was done in 2010-2011.13 universities among 41 medical sciences university were selected using convenience sampling formula. Educational workshop was held and nine criteria of organizational performance was assessed using workshop approach. The criteria were scored based on RADAR logic by all trained managers. *Results*. evaluation scores of all studied universities were more than 200; but just one of them obtained score more than 350. Difference between results and enablers was between 19.4 and 102.5. key performance result and society result obtained the highest and lowest score respectively. Kruskel Wallis test showed no significant differences between total scores of the results, enablers and also the nine criteria according to type of universities. *Discussion*. Based on the self assessment findings, Iran universities of medical sciences should plan and implement improvement projects in line with all criteria specially the results.

Key words: Self assessment · Performance evaluation · EFQM · Excellence models · Iran

INTRODUCTION

Nowadays, each organization requires changing in order to exist and grow and should reform their visions parallel with global change. Research about change studies shows that organizational development and change require fundamental change in culture, strategy, education, creativity, innovation and reengineering. Total quality management, created in the 2ⁿᵈ part of 20ᵗʰ century to prepare an organization for optimum reaction to new needs, requires strategic goals of organization in line with quality, customer satisfaction, employee participation, top management commitment and goal stability. Economic and social changes make use of total quality management inevitable for health system planners. Studies show that most of health organizations are successful in implementing quality management; these organizations have committed leader, customer-oriented and empowered manpower, process based operations, change culture and educational development [1]. In addition to provide necessary resource to improve health, managerial approaches also have principal role in improving health system performance in the world [2]. With regard to these unavoidable changes, the main

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question is that how and which model should organizations use today to evaluate their performance which is comprehensive, trustable and flexible that can determine the real position and situation of organization among other organizations [3]. In response to this question, several models have emerged [4]. A group of these models which called excellence models. Deming Prize is the first known model of excellence which is designed by Japanese scientists and engineers in 1951 [5]. After that, Canada Quality Award in 1984, Malcolm Baldrige, American National Quality Award, in 1987, Australian Quality Award in 1988 and the European Foundation for Quality Management (EFQM) Award in 1991 were presented. Until now, more than 100 different models were introduced under the name of National Quality Award and than 80 countries have used these models to assess the performance of their organizations [6, 7]. Deming, Malcolm Baldrige and EFQM models have been welcomed more among these models and they were also used in design of other models [8, 9]. Experiences that occurred in America and Europe have showed that the use of excellence models has a positive impact on promoting quality improvement [10-13]. In Iran, two national awards were presented, one is Iranian National Quality Award which includes seven original criteria, tens of sub-criteria and help tips with 1000 points provided in 2002Y Although, the EFQM and the Baldrige models were used in the design of the model, the criteria and their weighting are different [14]. Second Prize is Irainian National Award for productivity and excellence, which is affiliated to the Ministry of Industries and Mines, has been introduced in 2003.

National awards for excellence and productivity with the adoption of the EFQM model has eight fundamental concepts including achieving balanced results, creating value for customers, leading with vision, inspiration & integrity, managing by processes, succeeding through people, nurturing creativity & innovation, building partnerships and taking responsibility for a sustainable future and nine criteria and 32 criterion part in both enablers and results with 1000 points (Figure 1) [15]. Method of scoring is based on the EFQM RADAR Logic. RADAR logic is a dynamic framework for the assessment and a powerful tool for management which provides a structured approach for measuring the performance of an organization. RADAR logic consists of four elements - results, approaches, deployment and measurement. RADAR logic was explained in detail elsewhere [16].
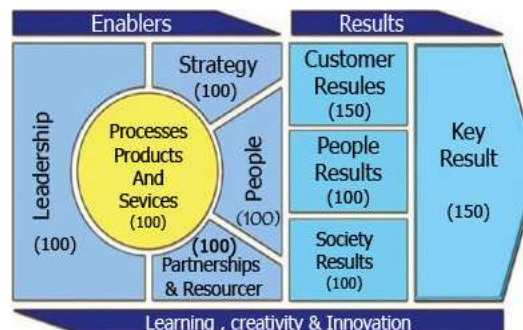

Fig. 1: the method of scoring EFQM criteria

Iran National Award for productivity and excellence divided the volunteer organization into two groups, small and medium-sized (less than 150 employees) and large (150 employees or more). Each of these two groups are also broken up into five separate sections including 1 - Manufacturing, 2 - Services 3 - Health and Safety, 4 - and 5 – General. Depending on the approved score obtained, one of the national awards including a recognition (at least 300 points), crystal trophy (at least 450 points), Simin trophy (at least 550 points) and the golden trophy (at least 650 points) is awarded [15].

Each province of Iran has at least one and at most 3 Universities of Medical Sciences (totally 41). Deputy of Health with 150 to 80 employees is the biggest deputy of the university which is responsible of 2-16 health centers to provide first level and sometimes second level of services covering 4,500,000 to 150,000 people. In the process of obtaining a national award for productivity and excellence, the University Deputy of Health is put in SMEs Group and in the public general sector. 8 years Experience (2011-2004) of granting the National Award for excellence in productivity shows that from 561 winners of the award, the share of health sector organizations was 22 or 3.9% which most of them were hospitals [17].

A study which examines current methods of organizational performance and enablers evaluation in the medical sciences universities, Deputy of Health showed that none of the universities use specific models to assess their performances and only 6 percent of 293 surveyed managers are familiar with EFQM model and Iran national awards for productivity and excellence, But there is a good platform for implementing models of excellence including appropriate level of training of total quality management, operational planning, strategic planning, research method, over 10 years of operational planning and more than 5 years strategic planning, team work , high participation of executives and experts

to do team work, good access to computer and internet, the high percentage of computerized programs and processes, automation and records of the modeled [18-19].

Regarding the results of the study and the principal role of the Deputy of Health in Iran's health system and their absence for receiving Iran national award for productivity and excellence, the aim of this study was to train the EFQM Excellence model and relevant self-assessment.

Methodology: This interventional applied study was conducted from May 2010 to May 2011 for one year. Among the 41 universities, 13 universities were selected using stratified random sampling with regard to the type [20] including Shahid Beheshti , Kerman and Gilan of first type, Semnan, Mazandaran, Hurmuzgan, Hamedan and Yazd of second type and Ilam, South Khurasan, Rafsenjan, Ghum and Gunabad of the third type. The intervention had following steps:

First Step: Calculating the costs of intervention, discussions with relevant officials of the Deputy of Health in Ministry of Health and Medical Education for approval and financing.

Second Step: A the 3-day national workshop was held for 3 managers of 13 universities. The managers should have at least 5 years work experience, participated in operational and strategic planning and total quality management workshops and experience in operational planning and the performance evaluation.

In 3-day national workshop, excellence models and self-assessment approaches were introduced and based on consensus, workshop approach among pro-forma, questionnaire and Award Simulation Approach was selected to be used by the universities to evaluate their performances.

Using feedback and participation of participant managers, 152 indicators of self-assessment appropriated with Iran health system were designed in the 52-pages within the framework of nine EFQM model criteria and 32 sub-criteria and associated guidance point with 1000 points.

Third Step: A 3-day workshop (morning and afternoon) on each of 13 selected universities

EFQM model and self-assessment approach were trained on the first day of workshop.

On the Second and third days of workshop, led of the researchers, trained managers performed self-assessment separately in each of four groups of 7-5 people and 152 indicators were scored between 0-100 in consensus manner. If an indicator had been scored more than 10, related documentations and evidences were necessarily noted in the specified part of the evaluation forms. Each of the group evaluated pages were entered in excel software.

On the third day of the workshop, all members of the four groups assembled in a hall and evaluated indicators were shown.

On the condition that the standard deviation of the groups' scores for each indicator was above 15, the scores would be modified with discussion and consensus among the group. Finally scores of sectors, criteria and sub as well as their central and dispersion indexes analyzed in excel software was based on radar logic.

RESULTS

At least 22 up to 31 of Technical, supportive and provincial program managers (totally 327) were involved in the universities ' Self-assessment process. Score of any university was less than 200 and more than 400 in this process of self-assessment. Three universities arrived at 201-250 points, another six universities made between 251- 300 points. Three universities scored between 301-350 points and only one remainder earned between 350- 400 points (Figure 2).
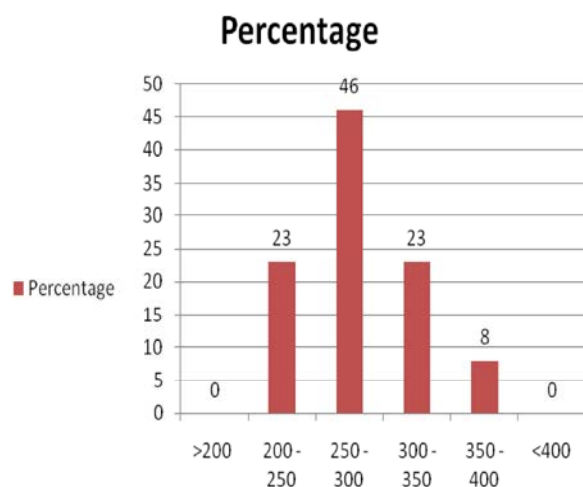

Fig. 2: Frequency of Universities of Medical Sciences based on obtaining scores in self assessment approach based on EFQM model
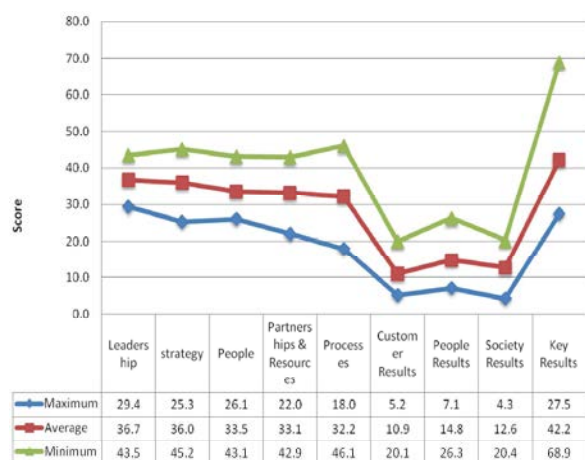
Fig. 3: The minimum, maximum and the mean of obtaining
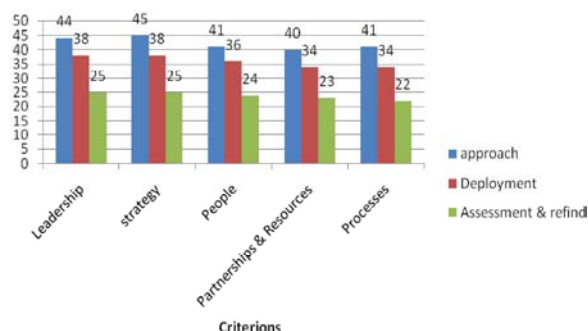score percentages of nine criteria of EFQM model

Fig. 4: The average percentage of scores in the results
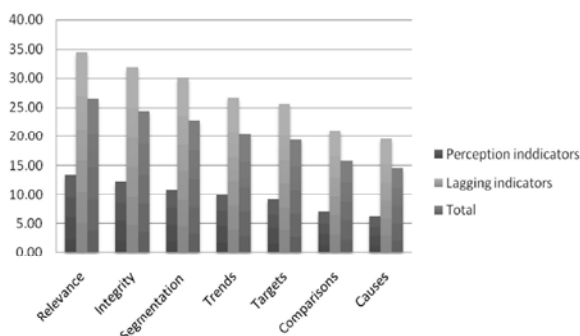criteria based on EFQM RADAR logic elements

Fig. 5: The average percentage of scores of lagging and
perception indicators in the results section based
on EFQM RADAR logic elements

The scores of enablers were more than the results in
all 13 universities. Therefore in all 13 universities 62% of
the total score belonged to the enablers and 38%
belonged to the results. The Least and the most difference
between the enablers and the result section scores were
19.4 and 102.5 respectively.

Figure 2 shows the range of changes in the result
section is more than the enabler section. Difference of the
mean score of the criteria in enablers was slight and just
4.5 point but it was high and about 46.9 point score in
results in all 13 universities. Figure 2 shows the mean and
range (minimum and maximum) values of 9 criteria of the
EFQM model in order. The maximum and minimum scores
of enabler criteria were related to processes and were 18
and 46.1 respectively. In results section, the minimum
scores (5.2 percent) were achieved for customer results
and the maximum scores (68.9 percent) were achieved for
key performance results.

The obtained scores based on Radar Logic shows
significant differences between the average scores of the
radar elements. Five criteria of enablers were scored based
on approach, deployment, assessment and refined
elements. Figure 4 shows that in each five criteria of
enablers, the average scores of approach were more than
deployment and deployment was more than measurement.

Figure 5 shows the high differences between the
perception indicators and lagging indicators of results
section. Average percentage of score on relevance and
usability element (Relevance 'Integrity' Segmentation)
was more than performance outcomes element
(Trends 'Targets' Comparisons and Causes). It also
shows that the average percentage of scores from
relevance to causes for Perception indicators and lagging
indicators as well as all result criteria had regressive trend.
Kruskel Wallis test showed no significant differences
between total scores of the results, enablers and also the
nine criteria according to type of universities ($P>0.05$).

DISCUSSION

The findings of this study showed that the minimum,
maximum and the mean of obtained scores of 13
universities were 215.5, 359.6 and 278 respectively. Theses
scores in comparison with other health system
organizations which participated in winning of Iran
national award of productivity and excellence and are not
much different. Among those 22 health organizations
which won one of the awards, only Hasheminejad hospital
won the crystal trophy in 2010 which showed the score
more than 450. Therefore other winner organizations
mostly obtained between 300-350 scores [15].

This study obtained scores in comparison with other
studies which evaluated some health system
organizations performance outside national award
process, is very low. Maleki et al evaluated the
performance of Alborz and Shohadaye 15 Khordad

Hospital based on EFQM models, their scores were 466.6 and 461.6 receptively [21, 22]; performance of Human Resources Management of Isfahan University of Medical Sciences earned up 533 score in Ighbal *et al*. [23] and Ghamari et al reported 522 points for performance of central hospital of Oil Industry [24]. Higher scores of these studies may not necessarily imply better performance and development; since in those studies evaluating approaches were questionnaire and no need for providing evidences. It might be that respondents did not have enough information of excellence models and related evaluation approach and so the judgments mostly are overvalued. The results of this study in enablers section is better than health organizations in other countries such as Germany [25] but it is worse than Sanchez study [26], this can be because of implementation of 5 years of excellence model in improving performance of health organizations in bask region of Spain.

One of the results of the study was that the average score of enablers which was 24% more than the results that are not the same as other studies [21-27] and showed little differences between enablers and results scores. Since one of the reasons for the results low score is low score of Customer Results, People Results and Society results, it can be implied that the studied universities in contrast with other excellence-oriented organization of improving their performance without proper interactions with their stakeholders. One of the requirement for winning trophies (score 450 and above) of Iran National Award for Excellence and Productivity is the balance between results and enablers points; the differences should be less than 10% of the total score [15] and should be considered by organizations. Tehran Hasheminejad Hospital which has longer history in the move toward excellence got considerable success in improving its performance through assessing customers, employees and society perceptions in 2002-2006 [28].

Points of EFQM model Criteria in this study (Figure 3) shows that the score difference of enablers criteria is minor (4.5%) but the results is highly significant (31%) which is various in other studies from India and other countries [21-27].

The results of study in other countries shows that the fourth criteria of enablers, partnerships & resources, obtained more score which can be a sign of sensitivity of most organizations in efficient management resources (Figure 6). The Sixth criteria, customer results, did not earn up the lowest score in other countries in contrast with this study which Iran health system managements should pay

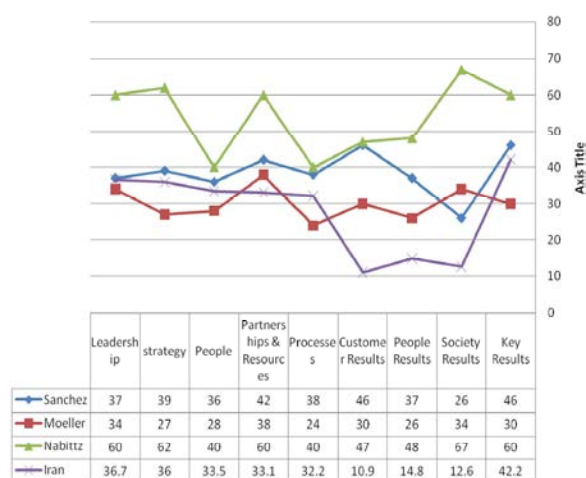|	Leadership	strategy	People	Partnerships & Resources	Processes	Customer Results	People Results	Society Results	Key Results
Sanchez	37	39	36	42	38	46	37	26	46
Moeller	34	27	28	38	24	30	26	34	30
Nabittz	60	62	40	60	40	47	48	67	60
Iran	36.7	36	33.5	33.1	32.2	10.9	14.8	12.6	42.2

Fig. 6: The average percentage of scores of EFQM main criteria in Iran Universities of Medical Sciences and some other countries studies

attention to (Figure 6). It is also of note that one of the requirements of getting trophies of Iran National Award of Excellence and Productivity is that the range of scores of customer results should be between 41 – 51% [15].

The findings shows significant variation of the mean percentage of criteria based on RADAR logic (Figure 4, 5); the variation in enablers criteria is more than results which is the same as Jalilian study [29]. These findings suggest that studied organizations which are in the middle of the way, just implemented two third of what have been designed and one third allocated to assessment and refined; and in results more attention is paid to relevance in comparison to performance analysis.

CONCLUSION

The findings of the study suggests that Iran Universities of Medical Sciences have necessary requirements for using excellence models; they can design and implement improvement projects specially for customers, employees and the society result criteria based on the findings of self-assessment and recognition of their strengths and weaknesses; and prepare themselves for national quality award process through the improvement and development of organizational performance.

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