

A Study on the Feasibility of Total Quality Management Model and the Awareness and Attitude of the Managers of Health Care

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Abstract

Total Quality Management is not just an admirable phenomenon but it is any client's right and can be done through contribution of the staff and the managers as well as the client's of an organization. The purpose of the present study is to investigate the feasibility of TQM model and the attitude of the managers of health field of Yazd medical sciences university towards it. The present study was a descriptive and analytical one which was cross-section ally conducted from 2010 to 2011. The population under study consisted of the managers of the unit of staff vice-chancellor for health and treatment, the managers of health system and centers of cities and also the managers of Yazd's public hospitals. 64 people were chosen using the formula for calculating the number of samples. A questionnaire with 48 questions was used. The questionnaire's validity was approved by the faculty members whose major is management and its reliability by using α -cronbach 87%. To analyze the data, the software SPSS V.17 was used. Scoring method was based on likert. The findings of the study show that, considering feasibility of TQM, there is a significant relation between the awareness and attitude of the managers of health and treatment field on one side and the variables, age and University degree, on the other side $p = 0.001$. Considering binary logistic regression and the results obtained in the form of inter and backward stepwise, the most important factors affecting the feasibility of TQM among the managers of health and treatment field are the level of awareness and attitude with the predicted accuracy 79.3% and 87.9% respectively.

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Keywords

Feasibility, Total Quality Management Model, Awareness, Attitude, Managers of Health Field

1. Introduction

Total quality management (TQM) has a great potential to address quality Problems in a wide range of industries and improve the organizational Performance [1].

Concerning health services, quality has a special place since the great mission of maintaining and taking care of community health is undertaken by this system [2]. In addition, hospitals which offer health and care services are the inseparable part of the health system. Hospitals, although constituting a small part of the health system, considering their number, are viewed as its most important part/element, as a significant part of expenditure on health is related to them [3].

TQM is a suitable way to relatively achieve efficiency and effectiveness which in turn leads to achievements such as success in long term, meeting the workers', customers' and other interested parties' needs in the society [3]. It is what can, as a key and efficient means, give a practical aspect to the total quality management and change it from being merely theoretical [2] [4].

The role of the managers in quality is so essential. They should be the first ones who try to improve quality, recognizing both the usual and special causes and distinguishing them from each other [3].

The quality management involves 8 principles which the executive manager of any organization can use to direct his organization in order to improve the performances. The principles are as follows: focusing on clients, leadership in management, workers' contribution, procedural approaches, systematic approach to management, continuous improvement, decision making based on facts and beneficial and mutual relationship to the providers [4] [5].

TQM is one of the most important changes which have taken place in the field of health care management. After fields such as industry and business, it is now the turn of health field to benefit from TQM in principle. The ministry of health, treatment and medical education has chosen TQM as a comprehensive and applied strategy since 1998 to achieve administrative development and improve the quality of services in order to respond to the needs and expectations of the society. It is worth mentioning that the national committee of improving quality known as an educational-consultative committee to educate, direct and support the programs concerning quality improvement has started its work [6].

In fact, the purpose of TQM is optimizing human powers and improving the quality of patient care through establishing the system in the wards [7]. TQM is not regarded as the final process of improvement, but everyone should try to achieve it and view improvement as a continuous process [8] [9].

Despite the undeniable advantages of TQM for an organization, there is no consensus about its framework, but there is a general consensus about the need for a systematic method or framework in order to make TQM feasible [10]. Concerning this matter, it can be said that patterns excellence such as the European-base pattern of TQM and Baldrige organizational improvement pattern and the operational patterns derived from them involve the presuppositions of TQM and the results of various studies indicate that they are a suitable framework to direct the systematic establishment of TQM as well as its evaluation in the organization [10]-[12].

In this study, we decided to examine the feasibility of TQM and the attitude of the health managers of Yazd medical sciences university towards it.

2. Methods

The present study is a descriptive-analytic one which was carried out cross-section ally in order to examine the attitude of the health general staff managers of Yazd medical sciences university, including those of the health nets and centers and also managers of hospitals of 10 health nets as well as the managers of health vice-chancellor of University.

The study was approved by the Ethics Committee of Tehran University of Medical Sciences (TUMS) IRB No. 88197-19/7/2011 and by the Ethics Committee of the Management College, Yazd University of Medical Sciences, Iran. The researchers described the purpose of the study and Potential risks/benefits to the health centers'

managers and all the prospective participants. All subjects were required to sign consent form.

The tool used to gather data was a questionnaire consisting of 48 questions. Its validity has been proved by university professors and its reliability based on the method of calculating and Cronbach coefficient is 87%. The way used to score the questions was based on Likert scale. Awareness level of the participants in the study was divided into 5 levels: excellent, good, average, weak and very weak. Based on the scores acquired by each participant in the study, they were categorized to 5 levels (from 0 to 100). The attitude was examined in the same way and all the data were analyzed using the software SPSS V.18. The study population included 64 individuals. Finally, the information pertaining to 58 managers was gathered.

3. Findings

3.1. Descriptive Findings

The area of activity of the managers was as follows. From health field 42 (71.4%) and 16 (28.6%) from treatment field. Concerning education, 29 (50%) had B.S., 4 (6.9%) M.S. and 25 (43.1%) PhD. The youngest was 30 years old and the oldest 49 years (**Table 1**).

Table 1. Frequency distribution of awareness level, managers' attitude towards TQM and feasibility of TQM, considering area of activity, age, education of the managers of the health field of Yazd Medical Sciences University.

1. Level of awareness		Good awareness		Average awareness		Test	P-value
Variable	N	%	N	%			
Area of activity	Health	30	71.4	12	28.6	Fisher careful test	0.343
	Treatment	13	81.3	3	18.8		
Age	Below 40	14	66.7	7	3	Chi-square test	0.328
	Above 41	29	78.4	8	21.6		
Level of education	B.S.	22	75.9	7	24.1	Chi-square test	0.764
	M.S. and PhD	21	72.4	8	27.6		
2. Level of attitude		Good attitude		Average attitude		Test	P-value
Variable	N	%	N	%			
Area of activity	Health	35	83.3	7	16.7	Fisher careful test	0.523
	Treatment	14	87.5	2	12.5		
Age	Below 40	18	85.7	3	14.3	Fisher careful test	0.581
	Above 41	31	83.8	6	16.2		
Level of education	B.S.	24	82.8	5	17.2	Fisher careful test	0.500
	M.S. and PhD	25	86.2	4	13.8		
3. Level of feasibility		Feasible		Infeasible		Test	P-value
variable	N	%	N	%			
Area of activity	Health	31	73.8	11	26.2	Fisher careful test	0.089
	Treatment	15	93.8	1	6.3		
Age	Below 40	16	76.2	5	23.8	Fisher careful test	0.451
	Above 41	30	81.1	7	18.9		
Level of education	B.S.	23	79.3	6	20.7	Chi-square test	1
	M.S. and PhD	23	79.3	6	20.7		

3.2. Analytical Findings

The mean percentage of the managers' scores concerning the questions on awareness' of TQM was 71.9 ± 8.7 . Based on the scores acquired, the managers were divided into three groups, *i.e.* weak, average and good.

The weak ones included those whose score was less than 33.3%, the average between 33.4% and 66.6% and the good ones above 66.7%. The results indicated that nine of the managers (15.5%) had an average attitude and 49 (84.5%) a good attitude towards TQM. There was no manager with a weak attitude (**Table 2**). In total, 12 of the managers (20.7%) believed that TQM was not feasible in their organization and 46 (79.3%) considered it feasible (**Table 3**). Considering the feasibility of TQM, in order to examine the relationship between variables, Binary Logistic Regression was used. The results are shown in the form of Inter and Backward stepwise in **Table 4** and **Table 5**. In view of this model, there is no relationship between the feasibility of TQM and the level of managers' education and age. So these variables are omitted from the model. Variables related to the level of awareness, attitude and field of study in logistic Regression model are shown in **Table 5** in the form of Backward stepwise. The accuracy of prediction of this model is 79.3%.

Also in order to examine the relationship between the variables and the manager's attitude towards TQM, Binary logistic Regression was used. The results are shown in the form of Inter and Backward stepwise.

The results indicate that there is no relationship between the managers' attitude towards TQM and level of

Table 2. Frequency distribution of managers' attitudes towards TQM considering their level of their awareness.

Level of awareness	Level of attitude	Average awareness		Good awareness		P-value
		N	%	N	%	
	Average attitude	7	46.7	2	4.7	0.001
	Good attitude	8	53.3	41	95.3	

Table 3. Frequency distribution of TQM feasibility from the point of view of the managers considering their level of awareness and their attitude towards TQM.

Level of awareness	Level of feasible	Average awareness		Good awareness		P-value
		N	%	N	%	
	Feasible	10	66.7	36	83.7	0.151
	Infeasible	5	33.3	7	16.3	
Level of attitude	Variable	Average attitude		Good attitude		P-value
		N	%	N	%	
	Feasible	8	88.9	38	76.6	0.397
	Infeasible	1	11.1	11	22.4	

Table 4. The relationship between variables of the study and feasibility of TQM using logistic regression in the form of inter and backward stepwise.

Variable	Variable coefficient (B)	Standard error (S.E.)	Wald	Degree of freedom (df)	P. value	Odds	Odds 95%	
							Limits below odds	Limits above odds
Level of awareness	1.49	0.893	2.77	1	0.095	4.43	0.77	25.55
Level of attitude	2.44	1.481	2.72	1	0.099	11.52	0.63	2.0
Level of education	1.04	0.847	1.53	1	0.216	2.82	0.54	15.02
Age	0.152	0.086	3.07	1	0.08	1.16	0.98	1.37
Field of study	2.57	1.290	3.97	1	0.046	13.1	1.04	164.1

Table 5. The relationship between the study variables and the feasibility of TQM using backward stepwise logistic regression.

Variable	Variable coefficient (B)	Standard error (S.E.)	Wald	Degree of freedom (df)	P. value	Odds	Odds 95%	
							Limits below odds	Limits above odds
Level of awareness	1.689	0.859	3.839	1	0.05	5.385	0.999	29.019
Level of attitude	2.119	1.306	2.633	1	0.105	8.319	0.644	107.51.
Field of study	1.773	1.134	2.442	1	0.118	5.886	0.637	54.36

their education, age and their field of activity/study, so these variables are omitted from the model. The variables, the managers' level of awareness and the feasibility of TQM are present in Logistic Regression in the form of Backward stepwise. The prediction accuracy of the model is 87.9%.

3.3. Discussion and Data Analysis

In examining the feasibility of TQM and its relation with level of education, 23 of the managers with B.S. degree and 23 of those with M.S. degree or PhD consider TQM feasible. So there is no significant relation between different levels of education and feasibility of TQM.

Considering the results of the study, there is no significant relation between the levels of education of those who work in staff section and their awareness of and attitude towards the feasibility of T.Q.M.

In a study conducted to analytically examine the extent to which the faculty board (professors and managers) are ready to accept TQM, none of the participants (220 professors and managers) had negative attitude. 14.54% of them had positive attitude and 84.46% rather positive.

Also, there was no significant difference between the three faculty departments concerning TQM acceptance, but there was a significant difference between professors and managers concerning TQM acceptance [16]. In another study concerning awareness of and applying TQM principles by managers of area 2 of Ministry of education .The results indicated that there was a significant difference between the managers and teachers; the managers had a positive attitude towards TQM model [17].

In a study conducted to find the relation between educational level of managers of Kohkiolyeh's high schools and acceptance of TQM model, the results showed that there was no significant relation between the two [18] [19].

A study was conducted to examine the attitude of the managers and faculty board of Oromiyeh University towards TQM model and its relationship to demographic characteristics [3] [6].

4. Conclusion

Considering the results of the study, there is no significant relation between the levels of education and age of those who work in staff section and their awareness of and attitude towards the feasibility of TQM. The result of the study showed that there was a significant difference between the managers' attitude and that of the faculty board. There was also a significant relation between the faculty boards' major and indices of management commitment, client-orientated attitude, using information and education.

Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions

FF selected the topic and designed the study, analyzed the data, interpreted the findings, wrote the first draft of the manuscript and revised the manuscript; KM & ARF selected the topic and designed the study, analyzed the data, interpreted the findings, commented on the first draft of the manuscript and revised the manuscript; KM & ARF designed the study, analyzed the data, interpreted the findings and commented on the first draft of the manuscript; SH designed the study, analyzed the data, interpreted the findings and commented on the first draft of

the manuscript; SA & FM & SHH designed the study, analyzed the data, interpreted the findings and commented on the first draft of the manuscript. All authors read and approved the final manuscript.

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