The Impact of Structure, Process and Output on the Establishment of an Accreditation System in Social Security Hospitals in Tehran

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Abstract

Background: The lack of an evaluation mechanism and effective accreditation for hospitals in addition to increasing healthcare costs jeopardizes the overall health of communities. This study was conducted to identify and prioritize factors affecting the establishment of an accreditation system in social security hospitals in Tehran in 2015.

Methods: This is a cross-sectional study and participants consisted of academic experts, hospital chiefs, managers, head nurses and supervisors, and staff of quality improvement in departments of social security in hospitals in Tehran City, Iran. Study samples were of 170 participants. A 5-points Likert scale questionnaire, according to the Donabedian model (structure, process, and output), with 24 items, was used. For data analysis, SPSS software version 22 and Pearson correlation coefficient, one-sample t-test and linear regression were used.

Results: Out of 170 participants, 49 (28.8%) were male and 121 (71.2%) were female. T-test results showed that all dimensions had a significant effect on the accreditation system ($P<0.05$). Also, pearson correlation coefficient results showed that all aspects had a significant correlation with each other ($P<0.05$). In the regression model, R^2 showed that 89.6% of changes of the dependent variable could be predicted.

Conclusions: The correct implementation of hospital accreditation requires the specific education for personnel so that they can easily understand the accreditation model and standardized processes that need to be established in the hospital.

Keywords: Accreditation, Donabedian Model, Social security.

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Please cite this paper as: Ebrahim Z, Nasiripour AA, Raeissi P. The impact of structure, process and output on the establishment of an accreditation system in social security hospitals in Tehran. Int J Health Stud 2017;3(3):5-8.

Introduction

Performance and quality assessment systems are an indispensable part of management of all organizations, public or private, to ensure improvement and sustainable growth in the competitive environment, and health sector organizations are no exception to this rule.[1] Hospitals have attracted the attention of health system policymakers due to the high budgets paid to them. Therefore, the promotion of hospitals' financials and quality is among the first priority of health sector policy makers.[2,3]

Hospital accreditation, with its potentially important role in promoting health of societies and reducing costs has become a controversial issue.[4]

Accreditation can be defined through approval of performance to meet predefined standards by a peer external and independent evaluator group such as Joint Commission International (JCI).[5] Government responsibility for society's health forces them to establish an effective system that is accountable to patients for all their health needs. Therefore, strengthening accreditation programs for health organizations is one of the most important issues for any health system.[6]

To assess hospitals' performance, many indicators can be used. One group of such indicators is bed management measures as outputs. Beds' occupation, beds' turn-over, and average lengths of stay are the most important and most usable indicators in this group.[7-10] Production and provision of services in hospitals, costs control and management, and finally efficiency and productivity of hospitals, depend on such procedural and performance indicators.[11,12]

Despite its rather long run of hospital accreditation programs, Iran's hospitals are hardly studied for examining the effect of accreditation on their performance indicators, especially after the launch of the new version of accreditation in 36 section and 2157 indicators in March 2013.[13] The few conducted studies were qualitative and investigated the role of hospitals' assessment on shaping the performance, and on personnel and hospitals' behavior,[14-16] through which some negative and unwanted results have been reported such as misrepresentation of data by hospitals and increased anxiety and stress among hospital employees.[17]

A study which examined the effect of accreditation suffers from either poor methodology or lack of enough follow up to observe the real long term impacts.[18] Some studies have been conducted as cross-sectionals and compared the mean of target variable just in two points of time; while the ideal approach to measure the effect of an intervention is randomized controlled trials, in many cases, due to lack of control group, this method is not applicable.[19-21]

Time series analysis is a type of longitudinal research that investigates the casual relationships over time,[19,20,22] and could be a good alternative for investigating the impacts of an intervention when no control group is available. As no longitudinal study has been conducted to assess the impact of accreditation on healthcare outcomes in Iran, we aimed to investigate the importance of structure, process and outcome of accreditation on implementation to led hospitals directly or indirectly to better performance.[23]

This study was conducted to identify and prioritize the factors affecting the establishment of an accreditation system in social security hospitals in Tehran in 2015.

Materials and Methods

This study is a cross-sectional one which was used to assess and prioritize factors in the establishment of an accreditation system in hospitals in Iran. To determine factors affecting the success of accreditation, participants were academic experts, hospital chiefs, managers, head nurses and supervisors, and staff of quality improvement departments of social security hospitals in Tehran City, Iran. During this 2015 evaluation, these hospitals achieved a ranking of 1. The sample size with 95% confidence level and test power of 80% was obtained in 170 participants.

In this study, a 5-points Likert scale questionnaire was used. Face validity and Cronbach's alpha coefficient (82.6%) to assess reliability were approved. The questionnaire was designed according to the Donabedian model (structure, process, and output). These three elements should always be considered together in any program of quality improvement. Variables were examined using a questionnaire with three dimensions and 24 items: seven items in structure; six items in process; and 11 items in output dimension. In structure dimension, items like information systems, financial, and manpower resources were assessed. Also, reduction of unplanned events, clinical audits and quality improvement committees in the process dimension, and mortality, infection rate and medical errors in the questionnaire were assessed.

For data analysis, we used SPSS software version 22. Data analysis was done using analytical and descriptive approaches. Illustration of quantitative data was done using average and standard deviation (SD) and of qualitative data using frequency and percentage.

Kolmogorov–Smirnov test was used to test normality. Pearson correlation coefficient, one-sample t-test, and linear regression in 0.05 meaningful levels were used as statistical analysis.

Results

Out of 170 participants, 49 participants (28.8%) were men and 121 were women. Thirty-four participants (20.0%) were less than 30 to 30 years old, 58 (34.1%) were between 31 and 40 years, 55 (32.4%) were between 41 and 50 years old, and 23 (13.5%) were over 50 years old.

Descriptive results showed that output dimension scored the highest average and process dimension obtained the lowest score. T-test results showed that all dimensions had a significant effect on accreditation systems (P<0.05) (table 1).

Pearson correlation coefficient results showed that all the aspects had a significant correlation with each other (P<0.05). In other words, with a confidence of 95%, there is a significant positive correlation between structure, process, and output with the establishment of an accreditation system (table 2).

The results of the regression model showed that R^2 is equal to 0.932 for the independent variables of structure and process and the dependent variable of output, which refers to the simple correlation between variables. The value of R^2 shows how much the dependent variable can be explained by the independent variables. In this case, the independent variables can explain 89.6% of changes of the dependent variable which is a significant amount and shows a high amount of effectiveness of the implementation of the accreditation model (table 3).

Table 1. Results of one-sample t-test for variables

Dimensions	Average	SD	T-value	P.V	Confidence level 96%	
					Low limit	High limit
Structure	3.65	0.64	13.24	0.00	0.56	0.76
Process	3.43	0.73	7.76	0.00	0.32	0.55
Output	3.74	0.67	14.28	0.00	0.64	0.84
Establishment of accreditation system	3.64	0.59	14.12	0.00	0.55	0.73

Table 2. Correlation coefficient of the variables

Correlation coefficient		Structure	Process	Output	Establishment of the accreditation system
Structure	Pearson correlation	1			
Process	Pearson correlation	0.62*	1		
Output	Pearson correlation	0.60*	0.63*	1	
Establishment of the accreditation system	Pearson correlation	0.82*	0.84*	0.91*	1

*Significant at 0.05 level

Table 3. Results of regression model

Dependent variable	Independent variable	Non-standardized coefficients		Standardized coefficients	T-statistic	P.V	Coefficient of model (R^2)	P.V
		B	Standard error	Beta				
Result	Fixed value	1.13	0.23	-	4.96	0.00	0.896	0.00
	Structure	0.65	0.07	0.68	4.65	0.00		
	Process	0.71	0.07	0.75	5.83	0.00		

Discussion

We aimed to investigate the possible effects of implementation of hospital accreditation programs on social security hospitals. The findings indicate that implementation of accreditation has a significant relationship with structure, process, and outcome. The results show that structure, process, and output have significant effect on establishment of an accreditation model in the organization and all three dimensions had high effect (above average).

In the study of the establishment of accreditation in hospitals, Azami et al. (2012) showed that the major obstacles in the implementation of the accreditation model were the shortage of human resources, lack of physicians' participation, lack of resources, and inaccessibility of information and documentation systems.[23] It could be said that most of these factors contributed structure and process dimensions while there is another important dimension output which defines the success in accreditation of hospital departments. Also, Rahati et al. (2014) showed that the good condition of the structure of the organization and development of human resources, customer orientation, leadership and management and teamwork had an impact on the implementation of accreditation.[24] In Iran, before the implementation of hospitals' accreditation nationally, a grading (evaluation) system was in use. Therefore, the previous researches evaluated hospitals' performance based on the grading system.[25,26] However, our findings have some similarities and differences with other national studies. Sack et al. (2011) showed in 328 departments in 73 hospitals that there is no significant difference between accredited and non-accredited hospitals in terms of length of stay.[27]

It has been many years since countries around the world have focused on the concept of the quality of their healthcare systems. Today, the provision of health services are not solely considered, but also the recipients of services demand for high-qualified healthcare.[28] The evolution of developing standards in different countries indicates that hospital standards of structural and imperative form have changed to standards relying on continuous quality improvement and total quality management.

Generally, the assessment standards of structure, process and output are gradually replaced the traditional assessment standards based on data and physical structures. Of course, these changes happened due to familiarity of managers and decision-makers with quality improvement programs.

Accreditation is one of these methods that in the past two decades have been considered by governments, service provider organizations, medical associations, managers, insurance companies and other beneficiaries.

Accreditation through quality assessment of organizational performance according to written, adopted standards is done by skilled agencies. An organization or hospital is evaluated voluntarily but formally requests validation from accreditation group using appropriate standards.

The results of this study show that the implementation of hospital accreditation demands appropriate, standardized, and easily understandable procedures for the personnel and these should be established in the hospitals as well. In order for the proper implementation of patterns, appropriate and new technologies should be used and also in the establishment of this model, the new processes should be used. Finally, in order to establish an accreditation model, hospital managers should implement quality improvement in all organizational processes.

Acknowledgement

Conflict of Interest

The authors declared that they have no conflict of interest.

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