ORIGINAL REPORT

The Relationship of Centralization, Organizational Culture and Performance Indexes in Teaching Hospitals Affiliated to Tehran University of Medical Sciences

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Abstract- One of the main problems in the efficiency and efficacy of an organization is its structural issue. Organizational culture is also considered as an effective factor in the performance of many organizations. The main goal of the present study was to determine the relationship of Centralization and organizational culture and performance indexes in Teaching Hospitals affiliated to Tehran University of Medical Sciences. This correlation study was performed in the year 2007. The population studied consisted of 4408 personnel from 13 hospitals among whom 441 subjects were selected and studied via a class sampling method. Data was compiled using a check list concerning the evaluation status of Centralization and another form concerning performance indexes as well as Robbin's organizational culture questionnaire. Data were obtained from the subjects by self answering and analyzed by using descriptive statistical indexes, T- test and Fisher's exact tests. Among the organizational culture indexes of the hospitals studied, control and organizational identity was better as compared to others (mean=3.32 and 3.30). Concerning the extent of Centralization in the hospitals studied, 53.85 % and 46.15 % were reported to have upper and lower organizational Centralization, respectively. Mean ratio of surgical operations to inpatients was 40%, the mean rate of admissions per active bed was 60.83, mean bed occupancy coefficient was 70.79%, average length of stay was 6.96 days, and mean net death rate was 1.41%. No significant correlation was seen between Centralization degree, organizational culture and performance indexes in teaching hospitals tehran university of medical sciences. (with 95% confidence interval). Due to the fact that first grade Teaching hospitals use board certified members, expert personnel, and advanced equipments and because of the limitation of patients choice and, the extent of Centralization and many organizational culture components have no significant correlation with performance indexes of these hospitals. Further research regarding structure is suggested in the future.

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Key words: Centralization; organizational culture; performance index; hospitals

Introduction

Today factors such as shortage of resources, expertise affairs, professional competitions, elimination of unnecessary administrative steps, necessity of justifying economic investments and analysis and reduction of unnecessary expenses and finally discovering and using suitable approaches for increasing efficiency and efficacy in the health sector and health care activities of hospitals, are being used so that special attention could be paid to reviewing organizational structure and hospital management. Hospitals have specific complexities and they require a suitable structure in order to provide expected services and care. Therefore we can not establish its structure based on competition between beneficiaries inside and outside the hospital. Because of this, organization and management experts have always sought suitable structures that are in line

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with the duties and missions of hospitals; a structure that can provide the necessary stability inside the hospital and society and which could allow favorable ground for wise and effective prudent management (1).

One of the main obstacles in achieving organizational efficiency and effectiveness in Iran (specially government organizations and institutes) is structural issues. The structures of organizations are old and based on traditional assumptions which do not correspond with their current duties. These old structures do not take into consideration dynamics and changes that have taken place in today's world. In addition, they are not structured in accordance with the current needs of Iran's Islamic society and they do not consider human dimensions and motivational factors of labor. One of the responsibilities of managers is to organize the system, since organizing is time-taking process, necessary actions should take place regularly to make the structural system of organizations become efficient and reorganizing should take place in accordance with variables and affecting factors (strategy and goal, environment, technology, size and …) (2).

Culture within an organization is like personality in human beings. Basic and fundamental assumptions, belief, norms and values constitute the inner identity of an organization as its cultural principles and differentiates good from bad. The culture of an organization is the main factor in its formation and has profound effects on other important organizational factors including "structure and organization plan, internal external organizational environment, technology and human resources and most important of all on the efficacy and strategy of an organization". On the other hand, culture determines the do's and don'ts and also forms the framework of organizational behavior. With the presence of a strong and compact culture, people not only become more aware about the goals and strategies of an organization, but they also feel more responsible towards the values and norms and they feel more satisfied from their work, With strong management, this important factor elevates the mood of workers, increases motivation, and increases efficiency which finally improves organizational performance (3).

Many theoretician commonly believe that organization culture is a system of members with common inference about their organization this inference is the characteristic that differentiates two organizations from each other. Such a system whose members have common inference about it , consists of some main features which the organization respects and appreciate them. (4).

Hospitals such as other organizations are seriously affected by this culture and despite these variations the hospital organization culture in the main levels and general principle is like the other organizations (5).

Till today, many studies and researchers have taken place concerning organizational structure and culture in different institutions. The results of some of these studies indicate the relationship between organizational culture and productivity of service-oriented organizations (5-10). The results of some of these studies have also shown dominant organizational structures in the hospitals of Iran. However, no study has been performed regarding the relationship between structure and organizational culture of hospitals and performance indexes of hospitals in Iran. This study aims to evaluate the relationship of Centralization and organizational culture and performance indexes in teaching hospitals affiliated to tehran university of medical sciences.

Results obtained provide the necessary ground for important changes such as making the necessary ground for efficient organizational structure and strong and compact culture, especially the recognition and detection of the roots of the deficiencies and poor performances of hospitals beds and important measures can be taken to improve the performance indexes of hospitals. Managers can become prepared for overcoming the probable deficiencies they encounter by becoming aware of their hospital's performance and in making important successful changes.

Patients and Methods

This correlation study was performed in 2007 and it involved 13 Teaching hospitals affiliated to Tehran University of Medical Sciences. The number of employees in these hospitals were n=4408. Regarding previous studies which show that around 60% of employees have low organizational culture (13), a population size of 441 subjects was determined with class method using sampling formula ($n = z^2\ 1 - \alpha / 2 * p (1 - p) / d^2$), with 95% confidence rate and error less than 5%.

Data was compiled using a check list concerning the evaluation status of Centralization and another form concerning performance indexes as well as Robbin's organizational culture questionnaire.

The questionnaire consists of two sections, namely demographic data and organizational culture of employees with 29 questions based on Robbin's 10 criteria indexes (organizational identity, risk taking

ability, clarity of goals, organizational collectiveness, management protection, individual creativity, bonus system, aggressiveness and organization concentration) (11). Likert 5 selection criterion (1=very little to 5=very much) was used to determine the scores. Data compilation tools were determined after studying reference books and after scientific validity were confirmed by expert judgment.

Performance indexes in this survey were: average length of stay, inpatient bed occupancy ratio, rate of admissions per active bed, net death rate and ratio of surgical operations to inpatients.

In order to collect data, the researcher gave the questionnaire to the subjects and oral explanation was also sought in order to assure precise and good quality data were provided. After grading, the answers were entered into SPSS version 13 software for data processing. Mean organizational structure grades and each of the hospital organizational culture and performance indexes were calculated for the hospitals studied. Criteria of judgment in data evaluation were estimated based on mean grades of indexes in two ways namely, desirable and not desirable. In the next stage, T-test and Fisher's exact tests were used to determine related significant association between concentration and organizational culture with hospital performance indexes.

Results

Out of 441 subjects under study, 300 persons (68%) were women and 141 persons (32%) were men. Out of the 300 women, 243 (81%) were from the health and treatment sector and 81 (57.4%) from administrative and financial sections. Among the sample population, 9 persons (2%) did not have high school diploma, 100 persons (22.7%) had high school diploma, 29 people (6.6%) had associate degree, 270 persons (61.2%) had bachelor's degree and 26 people (5.9%) had master's degree and 7 persons (1.6%) had doctorate degree. Regarding employment status, 280 persons (63.5%) were permanently employed and 161 persons (36.5%) were employed on contractual basis. The mean age of the study population was 37.18 years (standard deviation=6.85, mean work experience was 13.34 years (standard deviation=7.03 years). (Table 1)

Research findings concerning concentration of organizational structure of public hospitals affiliated to Tehran University of Medical Sciences shows that organizational concentration was high and low in 46.15 % and 53.85% of hospitals, respectively. Among the 10 indexes of organizational culture, the highest score was for controls (mean=3.32),Organizational Identity (mean=3.30) and Individual Creativity (mean=3.22) and the lowest score was for aggressiveness (mean 2.42). All indexes related to organizational culture were of medium range (table No. 2). Among the findings related to performance indexes of the hospitals under study, mean ratio of surgical operations was 40 %, mean administrations for each active bed was 60.83%, mean bed occupancy coefficient was 70.79%, mean duration of hospitalization was 6.96 days and mean net death rate was 1.41 %.

Table 1. Frequency distribution of employees based on sex, level of education and employment status.

Type of work Frequency		Health and Treatment		Administrative and Financial		Total	
		No. Frequency	Percent Frequency	No. Frequency	Percent Frequency	No. Frequency	Percent Frequency
Sex	Woman	243	81	57	19	300	100
	Man	60	42.6	81	57.4	141	100
Level of Education	Below high school	6	66.7	3	33.3	9	100
	High school	32	32	68	68	100	100
	Associate	20	69	9	31	29	100
	Bachelor's	216	80	54	20	270	100
	Master's	22	84.6	4	15.4	26	100
	Doctorate	7	100	0	0	7	100
Employment status	Permanent	216	77.1	64	22.9	280	100
	Contractual	86	53.8	74	46.2	160	100

Table 2. Average ranking for each organizational culture index

Organizational Culture Index	Mean	Standard Deviation	Score
Control	3.32	0.72	1
Organizational Identity	3.30	0.63	2
Individual Creativity	3.22	0.76	3
Rreward System	2.87	0.74	4
Organizational connections	2.76	0.75	5
Management support	2.73	0.89	6
Organizational Solidarity	2.64	0.77	7
Clarity of goals	2.62	0.85	8
Risk Taking	2.52	0.80	9
Conflict	2.42	0.83	10
Total	2.78	0.53	--

Statistical tests used to determine the relationship between structure and organizational culture indexes with each of the hospital performance indexes shows the following results: Statistical analysis with T-test showed that, in the hospitals under study, no significant statistical relationship was found to exist between organizational culture and its components and bed occupancy coefficient, mean duration of hospitalization, ratio of patient admission for each active hospital bed, ratio of operations to patients and death rate ratios.

Statistical analysis with Fisher's exact test showed that there was no significant relationship between centralization and average length of stay, inpatient bed occupancy ratio, rate of admissions per active bed, net death rate, ratio of surgical operations to inpatients in the hospitals under study (Table 4).

Table 3. Relationship between organizational culture and hospital performance indexes in Tehran University of Medical Sciences using T-test.

variables		p-value
Organizational Culture	Bed occupancy coefficient	0.307
	Average duration of hospitalization	0.226
	Patient Admission Ratio	0.088
	Surgical Operations ratio	0.562
	Net death rate	0.403

Table 4. Relationship between structural concentration and hospital performance indexes in Tehran University of Medical Sciences using Fisher's exact test.

variables		p-value
Structural Concentration	Bed occupancy coefficient	0.617
	Average duration of hospitalization	0.209
	Patient Admission Ratio	0.437
	Surgical Operations ratio	0.617
	Net death rate	0.392

Discussion

Analysis of the findings of our study concerning status of Centralization showed that Teaching hospitals affiliated to Tehran University of Medical Sciences are concentrated to a certain extent. This is not in full accordance with the results obtained in the study performed by Arab who evaluated them as fully concentrated. Extreme organizational concentration causes most small and large decisions and policies related to hospitals to be taken outside the hospital so that the process could be rapidified. Rahbar (12) reiterates that de-concentration needs a comprehensive approach. This process reminds us of Molana's famous depiction of various parts of an elephant's body. Incomplete experiences, which are seen only in one aspect without paying attention to the entire situation makes the de-concentration process insufficient and inefficient. De-concentration should accompany empowerment and establishment of credit among responsible local officials and authorities and it should increase their technical capabilities. Analysis of research findings concerning organizational culture indexes shows that none had favorable conditions.

Self-control, organizational identity, and individual creativity enjoyed better status as compared to other factors. In regard to Herssy and Blanchard's behavior effectiveness model (13), the personnel of the studied hospitals required more management type of participation than the dictatorial type. Study findings show that the employees of the hospitals studied enjoyed relative management support in performing their duties. Group cohesion and uniformity in joining one another to achieve common goals was not present to a favorable degree. Due to the hierarchal structure of organizations, there is a relatively weak connection in the hospitals causing problems in the dissemination of information for clarifying the goals of an organization. In addition, due to dictatorial leadership style, the personnel were given inadequate opportunities to state their opinions regarding different occupational problems. Concerning aggressiveness, the answers given by personnel indicates that hospital officials do not consider their comments or suggestions to be important. The study performed by Mohsen Baigi also confirms this issue. Aggression is effective in improving the quality of decision making because it encourages curiosity among personnel, due to encouragement of creativity. Aggression can also increase organizational performance by improving its effectiveness. Managers should be able to withstand criticism and they should create a suitable environment for their employees to state their opinions freely. They should pay attention to the opinions expressed by their personnel and they should try to solve problems by holding discussions with their personnel.

Evaluation of performance indexes of hospitals took place in two classes. Indexes related to the extent of utilization of hospital resources (indexes of bed occupancy ratio, ratio of patient admission for each active bed and average length of stay) and indexes related to qualitative evaluation of treatment (net death rate and ratio of surgical operations to hospitalization).

The mean bed occupancy coefficient in hospitals is around 70.79%, which is considered to be satisfactory in 53.85% of the hospitals under study and unfavorable in 46.15% of the hospitals. Sadighani (1), stressed that the quality of services, costs and expenses of services, cultural and educational factors, size of the city, geographical status, organizing diagnosis and treatment sections, availability of expert personnel, are effective factors in bed occupancy coefficient and shortage of labor and experts, instability in supply and demand of hospitalization services, rapid increase in hospitalization costs and low level income of patients, job dissatisfaction among health care personnel, lack of a referral system, poor management and organizational weakness and lack of competition in offering medical services are among the factors causing low percentage of hospitalization bed occupancy.

average length of stay index in the hospitals under study is around 6.96 days, which is favorable in 53.85% of hospitals under study and unfavorable in 46.15% of the hospitals. Ansari (14) stresses that duration of hospitalization is indicative of medical decision-making in whether or not hospitalization is necessary. In addition, duration of hospitalization may indicate the patient's social problem, improper specialized services, lack of facilities like surgical equipments and related tools, faulty equipment such as radiology equipments, all of which cause a longer hospitalization period. Masori (15) stated that mean duration of hospitalization is between 6 to 10 days in industrialized countries and between 5 to 7 days in European countries.

Mean net death rate index was around 1.41% in the hospitals under study, which was satisfactory and unsatisfactory in 45.5% and 54.5% of the hospitals, respectively. This index rises in proportion with the number of hospital beds. Sadighani (16) believes that many factors affect this index, including age group, sex, type of expertise, type of ward, hospital infections. Unless in exceptional cases, net death rate generally

should not exceeded 2.5% of discharged patients and deceased after 48 hours.

Mean ratio of surgical operations to hospitalized patients was around 40% and 53.85% of the hospitals under study had favorable and 46.15% had unfavorable indexes. Gerald Onssen (17) regards this index as one of the necessary indexes required for strategic planning in hospitals and he believes that there is no other way than making suitable plans for better management of operating rooms and making better use of expensive equipments. Calculation of number of operating rooms required in hospitals in regard to the region's needs is derived from this very index. In order to make better plans and to optimize the use of hospital facilities and to attain patient satisfaction, it is necessary to become familiar with this index. Unfortunately, till today, there is no exact statistics on patient figures concerning surgical operations.

Analysis of results shows that there is no significant relationship between organizational structure and organizational culture. Whereas the study performed by Oneill (8) confirms this relationship and it shows that organizational culture that emphasizes on discipline, precision, and rules and regulations is more in line with beurocratic structure while organic and flexible structures are more in line with entrepreneurial cultures that stress on innovation and change.

According the negative relationship of Centralization, organizational culture and performance indexes the recognition and detection of the roots of deficiency and poor performance of hospital beds need deep and widespread evaluation of all aspects, including the administrative system in management affairs, and the way hospitals are managed. In regard to certain extent concentrated structure and unsatisfactory components of most organizational cultures of hospital employees in the hospitals under study, a comprehensive approach or establishment of power and credit in local hospital officials, increase of technical strength, deconcentration process should be facilitated and effective measures should be taken to change the present hospital culture such as providing a suitable environment for creative personnel and to offer employees continuous education and training by the managers of health care and treatment organizations.

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