The Relation between Flexibility of Human Resources and Performance Indexes of Selected Hospitals of Tehran Medical Sciences University

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ABSTRACT

Background and objective: Today, flexibility has turned to one of important issues in management theories and policies and most current discussions about flexibility patterns focus on management policies, so that these patterns are one of important aspects of human resources strategic management. This study was performed with the aim of assessing the flexibility rate of human resources and performance indexes of Tehran Medical Sciences University hospitals and determining the possible relation between these variables.
Methods: The present study is descriptive – analytical which was conducted in cross-sectional form in 2015. The statistical population was selected by stratifies random sampling method as 317 persons from nursing, administrative and financial personnel of 5 hospitals of Tehran Medical Sciences University. Data collecting toll was hospitals performance indexes form and Wright & Snell flexibility questionnaire of human resources. Data analysis was performed using SPSS 18 software and with the aid of descriptive statistical indexes and linear regression analysis.
Findings: The results showed that personnel (human resources) had high flexibility $\mu = 4.16.$ there was a significant relation between total flexibility and the index of bed circulation so that by one unit increase in bed circulation space, normally, the average of total flexibility decreased 0.64 units (p-value<0.05).
Conclusion: The results showed that human resources of Tehran Medical Sciences University hospitals have high flexibility, so authorities and policy makers are suggested to adopt policies of human resources management for creating flexibility in human resources and improving hospitals performance and amending hospitals status.

Keywords: Human resources flexibility; Performance indexes; Hospitals
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INTRODUCTION

Today, flexibility has turned to one of important issues in management theories and policies and most current discussions about flexibility patterns focus on management policies, so that these patterns are one of important aspects of human resources strategic management.

Human resources flexibility is one the most important aspects of organizational flexibility and has focused on adaptability of personnel features like knowledge, skills and behaviors with changing environmental conditions. For example, three dimensions of human resources flexibility have been identified which include personnel skill flexibility, personnel behavioral flexibility and human resources functional flexibility. Among the organizations providing service for society, healthcare organizations and at the top of them, hospitals due to supplying, preserving and promoting the society's people health are very significant.

Hospital could be described as service factory, departmental organization, hotel, restaurant, medical care agency and social service organization. This complex feature of the hospital has attracted the attention of social sciences.

According to the resources –based view, human resources flexibility shows valuable and special organizational capabilities of the organization. So, flexibility could create tolerable competitive benefit and improve the organizational performance.

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Hospital indexes show hospital performance in various grounds. Therefore, universal attention to these markers is essential. Also, hospital indexes as the most important factor indicative of the hospital performance should be examined and compared in specific time periods and their status in various provinces, regions and organizations to be specified. Suitable use of flexibility patterns is an important element in performance management and could lead to performance improvement. Today, flexibility has turned to one of important issues in organizational thinking and has a great impact on companies' performance. Masiripour et.al, in their study, has examined the relation between making brand and performance indexes of Mashhad Ghaemshahr hospital. Data in the ground of created hoteling brands has been collected by referring to the hospital and interviewing and observing changes and studied performance indexes with cooperation of the hospital statistics center and the obtained results indicate that there is no significant relation between making brand and average of changes in the number of clients, while there is a significant relation between brand making happened in the hoteling field and changes in average of bed occupancy and bed circulation. Also, they state that brand making is effective in hospital performance improvement in competitive environments who seek to attract selected patients.

Barati et.al conducted a study with the aim of examining the relation between organizational health and performance indexes in treatment centers affiliated to Tehran Medical Sciences University and among 300 employees of this center. This study data has been collected using standard questionnaire of organizational health and performance indexes checklist and the obtained results show that totally there is no significant relation between organizational health and each of performance indexes.

Najafi Kalyani, during his studies about human resources flexibility and creating value among 129 persons form technical and operational managers of insurance industry organization in Iran, states that human resources flexibility has a positive and significant impact on value creation in insurance companies and in human resources flexibilities (functional, skill – behavioral), skill flexibility has the greatest impact on value creation in the organization. In this study, for assessing dimensions of human resources flexibility, Wright & Snell questionnaire and for assessing value creation, scholar-made questionnaire were used.

In the studied performed, financial performance, effectiveness and efficiency have mostly been noticed. Also, no study was performed in the field of human resources flexibility in service organizations especially hospitals and most studies in this field have been performed in productive and industrial industries of the world.

And, also, regarding that personnel in the organization are scarce resources and if they have diverse and flexible capabilities and skills effectively help the organization in acquiring competitive advantage and finally improvement of organizational performance, in this study the relation between human resources flexibility and performance indexes of Tehran Medical Sciences University hospitals are examined.

MATERIALS AND METHODS

This study is descriptive- correlation and it is applied in respect of aim and was conducted in cross sectional from in selected hospitals of Tehran Medical Sciences University in 2015. The research environment includes 5 hospitals affiliated to Tehran Medical Sciences University including Baharloo, Bahrami, Shariati, Ziaeian and Arash. The studies personnel were totally 1827 persons that 317 persons were selected among them as sample.

The research data was collected using Wright & Snell questionnaire by the scholar from studied hospitals and the questionnaires were appropriately distributed among 239 nurses, 78 departmental employees and also between hospitals. The tests used in this part include: one-way variance analysis test and linear regression analysis that the rate of accepted error in the present study was considered 0.05.

Findings
Based on the results obtained from questionnaires, the average flexibility score of total human resources has been obtained 4.16 that by comparing this score with status index, its rate was evaluated. And also, the results showed that the greatest rate of bed occupancy in the studied hospitals is related to Ziaiean hospital and the least rate belongs to Bahrami hospital (table1). Also, the greatest rate of bed circulation has been in Ziaiean hospital and the least was related to Bahrami hospital. About the rate of reception for each bed, Ziaiean hospital has the highest rate and in contrast Bahrami hospital is the least range in this index. Also, average patient inhabitancy in the least rate has been in Ziaiean hospital and the greatest rate in Baharloo hospital. The ratio of surgeries to operation room in Shariati Hospital as 185 cases is the greatest rate and in Ziaiean hospital as 39 surgery cases is in the least rate among studied hospitals. Also, the least mortality raw rate belongs to Bahrami hospital and the greatest rate belongs to Baharloo hospital (table1).

For examining the relation between total flexibility and independent collected variables, linear regression model was used. in this model, the average total flexibility was considered as dependent variable and gender, profession group , educations , age, work record besides hospitals performance indexes (ratio of reception for each bed, bed circulation space, average of patient inhabitancy, ratio of surgeries to operation room and raw mortality) as independent variable.

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Table1: Statistics relating to performance indexes of studied hospitals in the first 6 months of 2016

Hospital name	Bed occupancy percent	Bed circulation ratio	Reception ratio for each bed	Bed circulation space	Average of patient inhabitancy	The ratio of surgeries to operation room	Raw mortality
Bahrami	80.3	8.2	8.4	0.23	2.7	53	0.26
Arash	92	10.1	10.2	0.26	2	136	0.31
Baharloo	83.8	8.3	8.7	0.6	3	152	1.12
Shariati	91.1	9.6	9.1	0.35	2.3	185	0.31
Ziaian	92.2	10.3	10.4	0.36	1.9	39	0.94

But after using backward stepwise method for model fitting, only the impact of variables of occupation group, educations and bed circulation space remained in the model. For this model, modified R2 was calculated 0.204 (table2).

Table2: Average of total flexibility and independent variables in studied units in selected hospitals of Tehran Medical Sciences University

Variable		Estimated factors	Standard deviation of estimated factors	Test statistics (t)	p-value
width from origin		3.51	0.168	20.91	<0.001
occupation group		0.24	0.0.69	3.55	<0.001
educations	bachelor	0.56	0.116	4.79	<0.001
	master	0.96	0.131	7.32	<0.001
bed circulation space		-0.64	0.229	-2.8	0.005

Associate diploma group has been considered as reference group in educations variable. Regarding the above model, by modifying the impact of other variables, on average total flexibility in the departmental-financial group 0.24 units is more than nursing group. Also, by modifying the impact of other variables, on average total flexibility median in people with bachelor's degree is 56% unit and in people with master's degree 96% unit more than people who have associate degree. About the variable of bed circulation space, by modifying the impact of other variables, by increasing a unit in the bed circulation space on average, total flexibility average reduces 0.64 units. Modified R^2 mode is small which shows relative weakness of model for covering variability of predicted flexibility average (the closer this rate to 1, the model is better).

For examining hypotheses of model, p-p diagrams (Figure 1) and diagram of non-standardized fitted rates have been used against non-standardized model remainder (Figure 2).
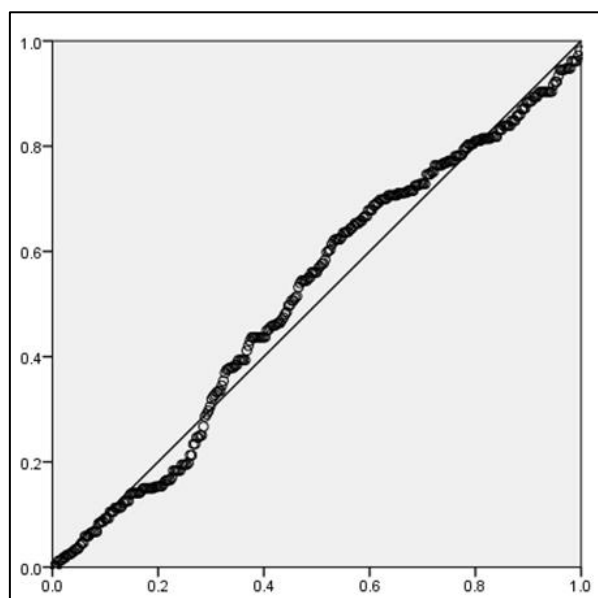

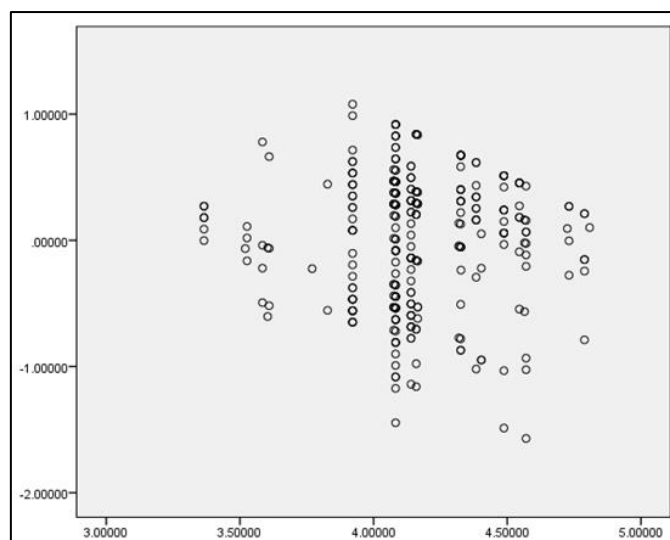**Figure 1: Normal diagram of standardized remainder transmittal**

Figure 2: Establishing the hypothesis of variance stability of error phrases

DISCUSSION

Among service provider organizations in the society, health and treatment organizations and at the top of them hospitals due to preserving and promoting people health are very significant. So, in this study it has been tried to assess the rate of human resources flexibility and performance indexes of selected hospitals of Tehran Medical Sciences University and to determine the possible relation between variables for improving hospitals performance.

Regarding descriptive statistics of human resources flexibility and its components, personnel of selected hospitals of Tehran Medical Sciences University were in a high level in respect of human resources flexibility which includes: functional, skill and behavioral flexibility.

Nazaripour et.al, during their study under the title of the relation between organizational intelligence and human resources flexibility in knowledge organizations and Martin & Poueig in a study under the title of increasing personnel flexibility through human resources procedures obtained some results which are consistent with our study.

But Tabibi et.al in a study under the title of examining the relation between human resources flexibility with performance indexes of Islamic Azad University obtained results which were in contrast with our study.

One of reasons that in studied hospitals personnel flexibility is high could be considered high application of human resources procedures like job circulation and job enrichment. Flexibility in the organization could cause increasing of human aspects in work, provide more job security for personnel and results in job attraction and the possibility of enjoying various jobs. Regarding that flexible personnel have diverse skills and have the ability to do various duties, the organization needs to attract new forces for performing diverse tasks and requiring new skills and as a result flexibility leads to reduction of attraction and using human resources costs. As it was said, fortunately in the studied hospitals human resources flexibility is high and then hospitals undergo little costs for attraction and using human force.

Based on the results obtained and comparing them with Ministry of Health, Treatment and Medical Training standards the studied hospitals were in an undesirable status in respect of bed circulation ratio which indicated the rate of occupancy and emptiness of a bed in a given period and also in respect of reception rate for each bed of Tehran Medical Sciences University, they had undesirable conditions.

Regarding that bed occupancy percent of selected hospitals of the present study is high, this could result from long inhabitancy length, frequency and domination of chronic patients, unnecessary provision of some medical services , long and unnecessary hospitalization , high reference of patients with severe diseases.

About the bed circulation space and medium patient inhabitancy, the studied hospitals had desirable status which indicates high efficiency and effectiveness and desirable use of resources in the present study hospitals.

Raw mortality percent in hospital is in desirable condition and in Bahrami hospital raw mortality percent is much lower than 4 other hospitals. Maybe, the reason that Bahrami raw mortality percent is low is that this is children general hospital with 3 NICU beds and mortality rate in this type of hospital is very low.

About the ratio of surgeries to operation room, it should be mentioned that Dr. Shariati Hospital had more desirable conditions comparing other hospitals, the great number of operation rooms and many clients form cities could be the reason of this.

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High occupancy percent of studied hospitals confirms this point that the present facilities in hospitals are efficiently used. Of course, if the number of hospitalized patients increases but bed increase is not so proper, this causes increase of bed occupancy percent.

The results of this study showed a relation between total flexibility of human resources with one of performance indexes of hospitals. And that is bed circulation space, on average total flexibility mean decreases.

Amerion et.al in a study under the title of examining the method of managing selected hospitals of armed forces and its relation with hospital performance indexes showed that there is no significant relation between hospital leadership and managing style and performance indexes.

Barati et.al in his study under the title of examining the relation between organizational health and performance indexes in medical centers affiliated to Tehran Medical Sciences University showed that generally there is no statistically significant relation between organizational health and performance indexes.

Moreover, Arab et.al in a study under the title of the relation of leadership styles of hospitals managers with hospital performance indexes found out that there is no statically significant relation between managers leadership styles (consultative, participatory, benevolent-authoritative, exploitative authoritative) with hospitals performance indexes. Nasiripour et.al in their study on brand making relation with performance indexes of Mashhad Ghaemshahr hospital states that brand making is effective in improving hospital performance in competitive environments which seek to selectively attract patients. Then, we can expect that receiving patients and their performance indexes are not influenced by personnel flexibility.

Ming Chang et.al performed a study under the title of the impact of human resources flexibility and customer satisfaction on organizational effectiveness in a governmental company, but this study's findings showed that there is no significant relation. In the present study, regarding that they are in relation to human life, personnel flexibility is in a high level in functional and skill dimensions and regular in-service training causes increasing of people flexibility. Gita Koomari & Comar Pradhan in a study under the title of human resources flexibility and organizational effectiveness with approach of personnel organizational citizenship behavior and the aim of personnel from staying in the organization, concluded that with the aid of human resources flexibility, an organization could maximize its innovative function. In this study, due to sensitivity of patient life, innovative performance has no place and mostly, action speed and flexibility of personnel is determining.

But, Fattahi et.al in the organization research and studying the impact of working systems with high performance on its performance and examining the intermediate role of human resources flexibility in commercial companies, Najafi Kayani in studying the relation of human resources flexibility and value creation in insurance companies, Batachari et.al in studying the impact of flexibility on personnel skill and behavior and human resources activities on the company performance , Sin Vi in research of analyzing human resources flexibility in the company level, Farasar & Walbi in the study of effective group work: increasing role of task flexibility and Katar & Set in the research of examining environmental dynamicity, human resources flexibility and the companies performance somehow state existence of relation between human resources flexibility and the organization performance that these studies were not consistent with our work.

Human resources flexibility is significant for the organization due to unique capability and competitive advantage and the created competitive advantage causes value increase in the organization. Also, Chang et.al in a study under the title of the relation of human resources management system flexibility and market attraction capacity, showed replication and adaptability of productive companies that these three variables as important aspects of company performance have a positive relation with flexibility of human resources. As it is specified, these studies results are not consistent with the results of the present study.

CONCLUSION

The reason of this could be the difference in study environment, since the present study environment, hospital, is a health treatment center but the environment of the mentioned studies are industrial ,productive and service companies and they are different in the type of service they provide. In hospitals, health services are provided for all people and since health is one of main needs of society and all people require receiving health services, so unlike other organizations, there is no competitive advantage between hospitals, especially training hospitals, so that we can say that the reason of lack of relation between hospitals performance indexes in each of mentioned studies and in the present study with other variables is that since there are many intervening factors like the hospital geographic location, policies governed on the hospital, the income rate of each hospital, which influence indexes and perhaps human resources flexibility and other variables of the mentioned study are among some factors effective in this ground. For omitting the impact of these intervening factors, it is required that samples to become similar in respect of other intervening factors and just the impact of human resources flexibility and other mentioned variables on the hospital performance indexes to be studied.

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