Website: http: jebhpme.ssu.ac.ir
EBHPME 2019; 3(3): 212-21 pISSN: 2538-5070

EBHPME

ORIGINAL ARTICLE

Evidence Based Health Policy, Management & Economics
Health Policy Research Center, Shahid Sadoughi University of Medical Sciences

The Effect of Management Contract Implementation on Public Hospitals' Performance: A Case Study in Iran

Omid Barati[1], Ahmad Sadeghi[2], Mohammad Amin Bahrami [3*]

[1] Education Development Center, Iran University of Medical Sciences, Tehran, Iran
[2] Department of Public Health, Esfarayen Faculty of Medical Sciences, Esfarayen, Iran
[3] Health Human Resources Research Center, School of Management & Information Sciences, Shiraz University of Medical Sciences, Fars, Iran

ARTICLEINFO

Article History:
Received: 20 Mar 2019
Revised: 9 Jun 2019
Accepted: 5 Sep 2019

***Corresponding Author:**
Mohammad Amin Bahrami
Almas Building, Alley 29,
Qasredasht Ave, Shiraz, Iran

Email:
Aminbahrami1359@gmail.com

Tel:
+98-9132565057

ABSTRACT

Background: This study aimed to investigate the effects of using a management contract mechanism on hospital's performance indicators.
Methods: A longitudinal comparative study was done in 4 educational hospitals affiliated to Iran University of Medical Sciences, Tehran, Iran. The related data to 17 performance indicators (including 4 financial, 6 facility utilization, 2 customers, 3 human resources, and 2 quality indicators) of the studied hospitals were collected for two years before management contract implementation and two years after its implementation using hospital information system (HIS). The collected data were ordered and analyzed using EXCELL and $SPSS_{18}$ software.
Results: The results showed the positive effects of contract management implementation on some financial, facility, customer, human resources and quality indicators. Hospital income, patients' satisfaction, staff satisfaction and the number of inpatients and outpatients of studied hospitals improved significantly after contracting.
Conclusion: Although, the present study showed the benefits of contracting process in delivering hospital services, its success largely depends on the clear monitoring of contract and the continuous development of the managerial capacity of contractors.

Keywords: Hospital, Contracting, Management contract, Outsourcing, Performance assessment

Citation

This paper should be cited as: Barati O, Sadeghi A, Bahrami MA. **The Effect of Management Contract Implementation on Public Hospitals' Performance: A Case Study in Iran.** Evidence Based Health Policy, Management & Economics. 2019; 3(3): 212-21.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

Copyright: ©2019 The Author(s); Published by Shahid Sadoughi University of Medical Sciences. This is an open-access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

The hospital industry is one of the most expensive parts of countries' economic. Hospital services have been identified as the basic necessities of any society due to the nature of their activities dealing with life and human health. Therefore, the effective and efficient practice of hospitals has always been requested from public side and health authorities (1).

The performance of public hospitals as the main part which delivers the hospital services in most countries is criticized in terms of type and level of provided services and the way they are produced (2). The low efficiency and productivity of many governmental hospitals, poor quality of provided services and the cost pressure of health sector have questioned the main assumption that healthcare organization, especially hospitals should be managed by the government (3-6). For governments that seek to find a solution for this problem, partnership with private sector in providing hospital services can be a viable solution that is expected to reduce the costs and improve the efficiency and service quality (7).

Therefore, today, the transfer of health services procurement from the public to non-public sectors through the mechanisms such as contracting has attracted much attention in most countries and has been used in activities ranging from providing primary health services in rural and urban areas to delivering hospital services and managing hospitals. Although, the contracting approach was introduced in the industrial sector at first, today many countries use it as a cost-effective approach in the health sector (8). Contracting is when an entity known as purchaser provides resources for another entity which is known as contractor to provide specified services over a defined period of time in a specified location (9). A diversity of contracting methods can be used for hospital services including clinical/ non-clinical contracting/outsourcing, management contract, monopoly contract, leases agreement, DBFO (Design, Build, Finance, Operate), DBFLO (Design, Build, Finance, Leases, Operate), PFI (Private Finance Initiative) and privatization. Management contract that isa method of contracting, is defined as an arrangement under which operational management of activities of an entity (purchaser or principal) is vested by contract to another entity (management contractor) who performs the managerial functions in return for a fee. It can involve a wide range of operations such as personnel management, technical operation of production and so on. The process of management contract provides the ability for two parties of contract to meet their intended needs and requirements. This process involves the planning of contract, negotiation between purchaser and contractor, development of contract and monitoring and evaluation of contractor performance (6,10).

Under a management contract, the contracting entity has complete responsibility for service delivery including the conduct of human resource management functions such as hiring and procurement of drugs and supplies. Therefore, the main purpose of contract management is enabling the effective management of healthcare settings (11). Nowadays contracting is a common method of health services delivery in some developed countries such as US, Finland, Canada, Netherland, and the United Kingdom. Also, it has become a common approach in middle-income countries, particularly in Latin America, Caribbean, and central Europe. It has been a common reformatory policy in Latin America countries in recent decades. In other developing countries such as Iran, contracting attracts increasing attention of health policymakers as an appropriate method of health care providing (12).

The results of existing studies from countries such as the united kingdom and India show that management contract implementation has a positive impact on hospitals' revenue, services quality, patients and staff satisfaction, improving

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

access to care and raising efficiency and effectiveness (13-15).

In Iran, many efforts were made for the outsourcing of public services in the past 2 decades as reflected in the country state documents such as 20-year vision document (Iran 1404) which has been adopted as the comprehensive strategy of development. In these documents, in order to enable the continuation of privatization, development of private sector and improving public-private participation, the government has been allowed to use all possible ways such as contracting methods for private and non-public sectors participation in providing public services such as health care (16). Therefore, in past years some governmental hospitals have tried to increase the non-public sector participation in providing hospital services through the implementation of contracting methods such as management contracts. Following contracting methods has become a common strategy of the countries to advance service delivery in challenging situation of healthcare settings especially financial constraints. It is assumed that these kinds of public-private partnerships can improve health settings' performance. This study aimed to evaluate the impact of using this mechanism on some performance indicators in hospitals affiliated to Iran University of Medical Sciences.

Materials and Methods

This retrospective longitudinal comparative study was done in four hospitals affiliated to Iran University of Medical Sciences which had implemented the management contract mechanism for providing offered services. The study was approved by the institutional board of Iran University of Medical Sciences, Tehran, Iran. The data wasgathered and analyzed on 17 performance indicators of 5 main performance domains i.e. financial (4 indicators including total revenue, compensation costs, good and services purchasing costs and staff allowances), facility utilization (6 indicators including annually out-patients number, annually in-patients number, bed occupancy rate, total number of active beds, bed turnover and average length of stay), customer (2 indicators including emergency patients' waiting time in minutes and satisfaction), human resources (3 indicators including total number of staff, the ratio of treatment staff to active beds number and employees' satisfaction) and services quality (2 indicators including nosocomial infections ration and net mortality percentage). Due to the retrospective nature of study researchers had to use the available data from the studied hospitals. Then, performance domains and their indicators were selected for study based on a literature review, the revising of the existent information of outsourcing committee of hospital and a focus group with some healthcare experts. For this, at first a literature review was done to detect the suitable set of performance assessment for hospital. In this step, Pubmed, Google Scholar, Science Direct, Magiran and SID were searched using free key words including performance assessment, performance evaluation, performance appraisal, performance monitoring in combination with hospital and indicator, index, domain or criterion. Also, the Persian equivalents of the mentioned keywords were searched. This review resulted in the identification of 64 performance assessment indicators for public hospitals. Then the accessibility of related data to identified indicators trough HIS of the selected hospitals was checked by researchers and unavailable indicators were removed. Then, in a focus group with participation of researchers and 12 senior and junior managers of studied hospitals the final list of indicators was selected. Then,these indicators were categorized into 5 main categories named performance domains. All data related to mentioned performance indicators were gathered for two years before management contract implementation and two years after its implementation using hospital information system (HIS) and a designated form for this purpose.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

The collected data were classified using EXCELL software. Also, $SPSS_{18}$ software was used for the calculation and comparing the indicators before and after the management contract implementation. All the ethical considerations were considered based on ethical declarations.

Results

In this study, some performance indicators of 4 hospitals were compared which had assigned the services of pharmacy, laundry, housekeeping, utilities, laboratory, and radiology services to private sector trough management contract before and after contracting. Table1. shows the changes in performance indicators after using management contract mechanism.

As it is shown in Table1. Improvements have been made in the most analyzed performance indicators after contracting. The summary of these improvements in performance indicators are shown in Table 2:

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

Table 1. The changes in studied hospitals' performance indicators after contracting

Indicator		Hospital A			Hospital B			Hospital C			Hospital D		
		Pre	Post	Variation (%)	Pre	Post	Variation (%)	Pre	Post	Variation (%)	Pre	Post	Variation (%)
Financial	Revenue	5800	14500	150	34422	51662	50.08	30824	56406	83	5178	7157	38.21
	Compensation costs	1725	1711	- 0.81	16670	18860	13.13	25715	25961	0.95	1830	2541	38.85
	Good and services purchasing costs	2170	2906	33.91	29477	37418	26.93	29671	52809	77.98	9129	12680	38.89
	Staff allowances	282	280	- 0.70	282	244	- 13.47	500	341	- 31.8	424	590	39.15
Facility utilization	Number of out-patients (annual)	48631	93773	92.82	125943	171594	36.24	70185	86299	22.95	64781	72398	11.75
	Number of inpatients (annual)	2536	2817	11.08	11696	13760	17.64	23768	26110	9.85	30198	72398	139.74
	Bed occupancy rate	78.1	78.1	0	74	81	9.45	86	84	-2.32	23.5	38.8	65.10
	Total number of active beds	0.63	0.63	0	0.56	0.56	0	0.58	0.70	20.68	NA	NA	NA
	Bed turnover	1.4	1.2	- 14.28	7	9	28.57	NA	NA	NA	4	5	25
	The average length of stay	5	4	-20	3	3	0	1.9	2	5.26	1.8	1.7	- 5.55
Customer	Emergency patients' waiting time (minutes)	7	5	- 28.5	2	1.5	- 25	7	2.6	- 62.85	NA	NA	NA
	Satisfaction (%)	91	93	2.19	71	77	8.45	86.7	88	1.49	NA	86.8	NA
Human resources	Total number of staff	63	70	11.11	340	306	- 10	357	407	14	NA	NA	NA
	The ratio of treatment staff to active beds number	0.44	0.44	0	1.6	1.7	6.25	1.38	1.57	13.76	NA	NA	NA
	Employees' satisfaction	72	80	11.11	62	72	16.12	NA	NA	NA	NA	81.8	NA
Service quality	Nosocomial	0	0	0	2	1.5	- 25	0.04	0.025	- 37.5	NA	NA	NA
	Net mortality	0.06	0.04	- 33.33	0.05	0.04	- 20	1.5	1.6	6.66	NA	1.5	NA

NA: Not Available

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

Table 2. Summary of changes in hospital performance indicators after management contract implementation

Performance indicator	Hospital A	Hospital B	Hospital C	Hospital D
Income	↑	↑	↑	↑
Compensation costs	↓	↑	↑	↑
Good and services purchasing costs	↑	↑	↑	↑
Staff allowances	↓	↓	↓	↑
Number of outpatients	↑	↑	↑	↑
Number of inpatients	↑	↑	↑	↑
Bed occupancy rate	↔	↑	↓	↑
Active Beds/total	↔	↔	↑	NI
Bed Turnover	↓	↑	NI	↑
The average length of stay	↓	↔	↑	↓
Emergency waiting time	↓	↓	↓	NI
Patients satisfaction	↑	↑	↑	NI
Number of Staff	↑	↓	↑	NI
Treatment staff/ Active beds	↔	↑	↑	NI
Staff satisfaction	↑	↑	NI	NI
Nosocomial infections (%)	↔	↓	↓	NI
Net Mortality	↓	↓	↑	NI

↑: Increase, ↓: Decrease, ↔: No change, NI: Not included (Unavailable data)

Discussion

The results indicated that the implementation of the management contract mechanism has positive effects on some financial, facility utilization, human resources, customer and service quality indicators in hospitals. Total revenue, number of in-patients and out-patients and satisfaction are among the indicators which have improved after contracting in all the studied hospitals. Some other studies on the effects of contracting in Iranian hospitals have shown that using contracting mechanism in providing hospital services can positively affect the staff's and employees' satisfaction, number of medical visits, equity and access to hospital cares, number of patients and service quality, and can also reduce the mortality rate of hospitals (17,18).

In terms of financial performance, despite an increase which was seen in total revenue in the studied hospitals, an increase in hospital costs after contracting was also observed. Although, this increase could be due to increased staff costs, as well as increasing of hospitalsadmitted patients. Nasiripour and Najafi, in their study on the effect of management contract implementation on the financial performance of an Iranian governmental hospital found that booth costs and total revenue of the studied hospital has increased after contracting and overall financial performance has shown improvement (19). In contrast, a financial analysis and efficiency measurement of a contracted hospital in India found a 40% decrease in direct and indirect costs which isinconsistent with the findings of this study(20).

Ther results of the indicators of facility utilization indicated an improvement in these indicators after contracting. From facility utilization indicators, the number of in- and out-patients has increased after using a management contract. Also, bed occupancy rate and bed turnover have improved due to contracting mechanism. In a same study to determine the efficiency and effectiveness of hospital services before and after management contract, the authors concluded that some indicators such as bed turnover, bed occupancy rate and the number of in- and out-patients have increased after contracting which confirms the findings of this study about the effect of contracting on these indicators (21).

The findings of customer indicators also showed that contracting has positive impacts on this domain

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

of hospital performance. In this study, it was found that customer (patient) satisfaction has increased while the emergency patients' waiting time showed a decrease after contracting. It is certain that the improvement of patients' satisfaction indicator, to some extent could be due to the reduction of waiting time because many studies have shown an inverse relation between patient satisfaction and waiting time to receive needed services. For example, authors of a study on the satisfaction of Saudi Arabian patients from a hospital's medication services found that main causes of patients' dissatisfaction are the long waiting time for receiving drugs (22).

Inconsistent with these results, Semin and Tayeb in their study in Pakistan at 103 primary health care centers concluded that the patients' satisfaction has increased after contracting (23). Also, the studies of New Zealand hospitals have shown that management contracts can lead to improved efficiency, equity, access, and service quality due to the enhancement of competition between contractors and improvement of responsibility (24).

In terms of human resources indicators, this study showed that management contract can have a positive effect on this kind of indicator, too. Based on the results, after contracting, employees' satisfaction increased and total number of employees and the ratio of treatment personnel to beds also increased at 2 hospitals. The same results have been reported in some other studies. Results of a study in Arizona showed that after contracting the pharmacy services employees' satisfaction raised to 86 percent from 77 percent (25). Furthermore, Ferdousi in his study found that the ratio of total personnel to beds has increased from 0.70 to 0.92 after outsourcing of hospital services (26).

Analysis of quality indicators in this study showed that the rate of hospital-acquired infections has decreased in 2 hospitals but it has remained unchanged in the other hospital after contracting. Also, the net mortality rate has decreased in 2 hospitals and increased in another hospital after management contract implementation. Although these 2 indicators were in an acceptable range and an improvement was found in more hospitals after contracting but due to the extraordinary importance of these 2 indicators in hospital operation it is preferred not provide a definitive conclusion on these service quality indicators.

In summary, the results of this study in hospitals which had used a management contract approach in some hospital services showed that the same approach has a positive effect on various performance domains of hospital. Studies from other countries such as New Zealand, India, and England , have also reported the benefits of outsourcing mechanisms such as management contracts in the provision of hospital services. Moreover, some countries have valuable experience in contracting with non-public sectors to provide various kinds of health and social services. Many different kinds of health services have been successfully contracted in these countries such as providing primary health care, immunization, offering HIV prevention services among high-risk groups, providing screening services, establishing health insurance systems, managing hospitals, providing outpatient services and diagnostic services within health facilities. These experiences and studies such as this in Iranian hospitals make a clear road in front of health policymakers to find a solution for the arising criticism from healthcare systems due to high costs and low efficiency (9,14,27). It is noteworthy that although this study had some strengths it also contains some limitations. The main strength of the study was the longitudinal nature of study which permitted the researchers to analyze the impact of contracting on hospital performance in a long timeframe. This becomes more important when bearing in mind that using public-private partnership models affect hospitals' performance in a long time frame. Besides, considering different indicators of performance is another main strength of the study as the "performance" includes different areas and a comprehensive performance assessment should assess

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

them in a holistic approach. Despite these strengths, this study suffers from to some degree data deficiencies due to its retrospective nature.

Conclusion

The results confirmed the affirmative effect of using contracting mechanisms in providing hospital services on their performance. It seems that currently decision-makers in health systems have to some extent appropriate documented reasons to think more about contracting solutions in health system. It is probable that the increasing criticism about the inefficiency of health systems and the cost pressure of healthcare provision will enhance the enthusiasm of health managers to use these solutions more in the future, but it should be noted that it can act as double-edged sword. As the authors of World Bank toolkit entitled performance-based contracting for health services in developing countries stated that despite its widespread benefits, a number of possible concerns have been raised in relation to contracting. Some of the most common concerns include the contracting cost, equity and sustainability issues and potential corruption (9) but as it was proved in the present study and some other studies, if governments can design and manage the contracting process appropriately, it can be a beneficial solution for health care systems in this era of resource scarcity. Although, more studies and pilot projects are needed to assurance the certain benefits of contracting in health systems.

Acknowledgments

The authors appreciate the vice-chancellor of research and technology, Iran University of Medical Sciences for his support.

Conflict of interests

The authors declared no conflict of interests.

Authors' contribution

Barati O designed research and collected the data; Barati O, Sadeghi A and Bahrami MA analyzed data; Bahrami MA wrote the first version of manuscript; Barati O, Sadeghi A and Bahrami MA revised the manuscript. All authors read and approved the final manuscript.

References

1. Ferdosi M, Farahabadi E, Jandaghian M, Haghighat M, Naghdi P. Outsourcing Effectiveness of Admission Units of imaging centers in Ayat o Allah Kashani Hospital to Non-Governmental Sector . journal of Hospital. 2011; 10(3): 52-61. [In Persian]
2. Alexander J, Rundall T. Public hospitals under contract management. An assessment of operating performance. Medical Care. 1985; 23(3): 209-19. PMID: 3884917.
3. England R. Contracting and performance management in the health sector: a guide for low and middle income countries. London: DFID Health Systems Resource Centre. Available from URL: https://www.eldis.org/document/A10890. Last access: May 14, 2019.
4. Laggards M, Palmer N. Does contracting out services improve access to care in low and middle-income countries?[Online]. 2008; Available from URL: http://www.iecs.org.ar/support/administracion/files/20080909105544_7.pdf/. Last access: 11/06/2018.
5. Jakab M, Preker A, Harding A, Hawkins L. Organizational reform and management of Public Providers, World Bank Report [Online], 2003. Available from: URL: www.econ.worldbank.org/. Last access: 09/08/2018.
6. Loevinsohn B, Harding A. Buying results? Contracting for health service delivery in developing countries. Lancet. 2005; 366(9486): 676-81. doi: 10.1016/S0140-6736(05)67140-1
7. Nikolic IA, Maikisch H. Public-Private Partnerships and Collaboration in the Health Sector, An Overview with Case Studies from Recent European Experience. Available from URL: http://citeseerx.ist.psu.edu/viewdoc/ download? doi=10.1.1.490.3442&rep=rep1&type=pdf. Last access: May 14, 2019.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

8. Albreht T. Privatization Processes in health care in Europe—a move in the right direction, a trendy option, or a step back?. Eur J Public Health. 2009; 19(5): 448-50. doi: 10.1093/eurpub/ckp146.
9. Loevinsohn B. Performance-Based Contracting for Health Services in Developing Countries: A toolkit. World bank institution; Washington DC: 2008. Available from URL: http:// www. who. int/ management/ resources/ finances/CoverSection1.pdf. Last access: 10/10/2018.
10. Taylor R, Blair S. Public Hospitals: Options for Reform through Public-Private Partnerships. Washington, D.C: American Development Bank. Available from URL: http://siteresources.worldbank. org/EXTFINANCIALSECTOR/Resources/282884-1303327122200/241Taylo-010802.pdf. Last access: May 12, 2018.
11. Shaw Paul R. New Trends in Public Sector Management in Health: Applications in Developed and Developing Countries. Health, Nutrition and Population Discussion Paper. Washington, DC: World Bank. Available from URL: http://documents. worldbank.org/curated/en/927861468316133267/pdf/373180PAPER0HNP0Shaw1NewTrends01PUBLIC1.pdf. Last access: July 11, 2018.
12. Preker AS, Harding A. Innovation in Health Service Delivery: the corporatization of public hospitals. The World Bnak, Washington, D.C. 20433. Available from URL: http://documents.worldbank. org/ curated/en/ 286701468150875482/pdf/ 261000 REVISED00ing0Preker020030book. pdf. Last access: August 10, 2018.
13. Chalkley M, McVicar D. Choice of contracts in the British National Health Service: An empirical study. Journal of Health Economics 2008; 27(5): 1155-67. doi: 10.1016/j.jhealeco.2008.05.005.
14. Radwan I. India-Private Health Service for the Poor. Health, Nutrition and Population (HNP). New York: Greenwood Press. Available from URL: http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/RadwanIndiaPrivateHealthFinal.pdf . Last access: April 3, 2019.
15. Liu X, Hotchkiss DR, Bose S. The effectiveness of contracting-out primary health care services in developing countries: a review of the evidence. Health Policy Plan. 2008; 23(1): 1-13. doi: 10.1093/ heapol/czm042.
16. Mobaraki H, Danesh Dehkordi N & Najafi M. Performance report on the comprehensive management plan for restructuring the economic system of hospitals. Iran: Ministry of Health and Medical Education. 2004: 137-48. [Book in Persian].
17. The office of economics and management structure reform Comdaor. Report of economics and management structure reform in hospitals. Tehran: Ministry of Health Publication, 2002. [In Persian].
18. The report of twenty years vision and fundamental regulations of Iran [Online]. 2000; Available from: URL:www.rasanews.ir/NSite/FullStory/?Id=11625/ [In Persian]
19. Nasiripour AA, Najafi B. The effect of management empowerment regarding Iran development plan -article 144- on financial performance of a pilot hospital. J Manage Med Inform Sch. 2013; 1(1): 48-56.
20. Chandra H. Financial Management Analysis of Outsourcing of the Hospital Services for Cost Containment and Efficiency: Case Study of Sanjay Gandhi Post-Graduate Institute of Medical Sciences, Lucknow, India. Journal of Financial Management and Analysis. 2007; 20(1): 82-91.
21. Abolghasem Gorji H, Raeissi P, Delgoshaei B, Nazari M, Abbasimani Z, Mohseni M. A Comparison of Efficiency and Effectiveness of Karaj Shahid Rajaie Hospital before and after Decentralization: 2012. jha . 2015; 18(59): 19-28. [In Persian]
22. Mohammad BA, AI-Dogaither AH. Patient's satisfaction with pharmaceutical services at teaching hospitals, Riyadh, Saudi Arabia. Saudi Pharmaceutical Journal. 2004; 12(1): 35-41.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]

23. Sameen S, Tayyeb IM, Belgacem Sabri . Contracting but not without caution: experience with outsourcing of health services in countries of the eastern Mediterranean region. 2006; 84(11): 867-75. PMID: 17143460
24. Ashton T, Cumming J, McLean J. Contracting for health services in a public health system: the New Zealand experience. Health Policy. 2004; 69(1): 21-31. PMID: 15484604
25. Guimarães CM, JCD Carvalho. Outsourcing in the Healthcare Sector-A State-of-the-Art Review. Supply Chain Forum: An International Journal 2011; 12(2): 140-8.
26. Ferdosi M, Farahabadi SME, Mofid M, Rejalian F, Haghighat M, Naghdi P. Evaluating the Outsourcing of Nursing Services in Kashani Hospital, Isfahan, Iran. Health Inf Manage. 2013; 9(7): 989-96. [In Persian]
27. Nikolic IA, Maikisch H. Public-Private Partnerships and Collaboration in the Health Sector: An Overview with Case Studies from Recent European Experience [Online]. 2006; Available from URL: http://siteresources. worldbank. org / INTECAREGTOPHEANUT/ Resources/ HNPD iscussionSeriesPPPPaper. pdf/. Last access: 03/04/2019.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

[DOI: 10.18502/jebhpme.v3i3.1505]