



Research article

Hospital management by health services management graduates: the change paradigm in Iran

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ABSTRACT

Background: The hospital management and its functions can be very important in improving the quality of hospital care, and their managers need several competencies to perform these functions efficiently and effectively. Today, more attention should be paid to the use of professional hospital managers, especially those educated in the field of Health Services Management. The present study aimed to study the change paradigm of hospital management by graduates of Health Services Management in a hospital in Iran as a developing country.

Materials and methods: This study was a qualitative case study conducted in the Hazrate Ali Asghar Hospital in Shiraz, Iran in 2018 in order to determine the “why”, “how” and “what” aspects of applying hospital managers educated in the field of Health Services Management instead of other traditional managers, as a change paradigm. The samples were selected purposefully and semi-structured in-depth interviews with 12 people were used to explain the experiences of management style by graduates of Health Services Management. Data were collected and analyzed simultaneously using the thematic analysis method and with the inductive approach.

Results: Results of the interviews led to the identification of 6 main themes and 26 sub-themes. The main themes were structural reforms, process reforms, organizational culture reforms, performance reforms, resource reforms, and consequences and results.

Conclusion: According to the results, shifting from the use of traditional managers to the use of graduates of Health Services Management in the hospital proposed as a change paradigm in the hospital management is accompanied by some reforms in the hospital structures, processes, resources, culture, and performance. Such reforms may lead to some valuable final consequences and results such as increasing patient and staff satisfaction and effectiveness of actions and activities. This hypothesis is recommended to be tested in other similar settings.

1. Introduction

Hospitals are one of the most important organizations providing health services and have an important role in maintaining and promoting public health [1, 2, 3, 4] and consume a significant portion of health system resources [5]. Accordingly, the optimal management of hospital affairs requires new management and training of efficient managers [3]. The efficiency and effectiveness of the hospital depend to a large extent on the management and effective use of its resources. Managers do this through management functions such as planning, organizing, and directing [6], and need several competencies to perform these functions

efficiently and effectively. These competencies are a set of knowledge, skills, behaviors, and attitudes that are effectively used in various managerial positions [7]. In addition to these competencies, managers' performance is influenced by organizational variables such as work environment, organizational culture, support of high-level managers, and their salaries and benefits [8]. Since the hospital is one of the important health care organizations that deals with human life and health, the position of management and its functions can be very important in improving the quality of hospital care [9].

Effective management of hospitals can lead to the development of organizational culture [10, 11], empowerment and improvement of staff

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performance [12], improvement of quality [13] and safety of services [14], and promotion of efficiency and effectiveness [15] of hospitals. Effective process management will lead to better management of the hospital and its resources and staff [6]. One of the most important reasons for the problems in hospitals is the lack of strong and capable managers who can rely on the necessary knowledge and experience to have the best use of available facilities, satisfy the staff and the clients, and provide the best services in the shortest time [16]. Poor performance of managers in the hospitals can cause delays in timely treatment, progression of the disease, increases inpatient death, increased costs, and wasted human and financial resources [17]. They should meet the rational needs of patients and make quality and safe diagnostic, treatment, and rehabilitation services available to the community at an affordable cost [1, 2, 4, 17], and be equipped with relevant and appropriate skills to carry out their tasks and functions efficiently and effectively [6].

In developed countries, management in hospitals and healthcare organizations has received considerable attention, so that the Joint Commission on Accreditation of Healthcare Organizations considers the employment of graduates of Health Services Management in the United States and Canada to be essential in developing the mission and vision statements, as well as in accreditation programs for health care providers [6]. Graduates of this field are efficient and strategic forces in the health care system and have an important role in increasing the efficiency and effectiveness of the system, improving the quality and quantity of services, and the optimal use of resources, and therefore the more these graduates can be used in management positions, the more successful the organization will be in achieving its goals and preventing the waste of resources [18]. Thus, it seems that the use of educated managers in the field of Health Services Management is necessary to improve the performance of the health system. These managers today are considered as experts and professional managers and due to the expansion of health services in human societies, the need for experts in this field in all areas of health services management, especially hospital management, is vital to achieving maximum efficiency with minimum cost. Today, more attention should be paid to the education and training as well as the use of professional hospital managers because the future is full of challenges facing health care organizations in terms of competition for internal and external resources [6].

The results of Rismanchian (2010) [19], Nasr and Masoomi (2005) [20], and Tabibi et al.'s (2014) [6] studies have shown that the performance of educated managers in the field of Management in the dimensions of managerial functions has been much more appropriate and effective than managers educated in other fields. In another study, hospital managers whose organizational position was related to their field of study had a better performance [8].

The results of Tabibi et al.'s study (2014) also showed that educated managers in the field of Health Services Management had better performance than non-professional managers [6]. A study conducted by McKinsey company in collaboration with the London School of Economics and Political Sciences on the economic performance of 1194 hospitals in Canada, France, Germany, Italy, Sweden, the United Kingdom, and the United States in 2009 showed a strong significant relationship between professional hospital management and the hospitals' clinical and functional indicators. Hospitals with professional managers had lower patient mortality rates, higher patient satisfaction, and better financial performance [21].

Despite these benefits, the use of health care managers as professionals in the management of hospitals in some low- and middle-income countries has not been as common as in developed countries. This largely depends on the context of the countries and their standards of health care management [22]. Iran is also one of the countries that in recent years has been more inclined to employ physicians or paramedics as hospital managers. Continuation of this process can lead to unprofessional management of hospitals and affect the performance of hospitals. Therefore, in this regard, there is a need to explain and provide

in-depth evidence of the situation of hospitals that have experienced this change paradigm. To the best of our knowledge, there is no study with an in-depth approach that has addressed this change in hospital management in Iran, as a low-income developing country. Thus, the present study has applied a qualitative design with the aim of studying the change paradigm of hospital management by graduates of Health Services Management in Hazrate Ali Asghar Hospital in Shiraz, Iran. It is hoped that the results of this study can show the capabilities of Health Services Management graduates in the management of hospital affairs in various dimensions.

2. Materials and methods

2.1. Case report

Hazrate Ali Asghar Hospital, located in Shiraz, Iran is a specialized hospital whose initial construction began in 1974 on a plot of land with an area of 11489 square meters with the aim of constructing a nursery under the supervision of the Red Lion and Sun Society at that time. After the building was completed, it remained in the process of completing the equipment and never reached the intended use. In 1987, with the transfer of ownership of the building to the Health Organization, it started operating as a children's hospital under the name of Hazrate Ali Asghar.

In 1994, the plastic surgery ward was transferred from Ghotbedin Burn Hospital to this hospital. In 2002, its pediatric and plastic surgery wards were transferred to Namazi Hospital, and part of this hospital was changed to the School of Management and Information Sciences. In 2003, its operating room was reopened. In 2007, its Oncology and Endourology wards were set up and the negative pressure isolation ward was established for the first time in the south of the country in this hospital. In 2010, the School of Management and Information Sciences was moved to another location and the hospital was developed. In 2011, its Hemodialysis ward and CT scan unit were set up. In 2012, the Poisoning ward was transferred from Shooshtari Hospital to this hospital. Now, the medical services provided in the hospital include Neurological Intensive Care, Central Intensive Care, Negative Pressure Isolation, Hemodialysis, Women's Internal Medicine, Men's Internal Medicine, Neurological Internal Medicine, Asthma and Allergy, CCU, and Surgery which the most of its surgeries are Urological Surgeries so that this hospital is one of the most important Urological Surgery centers in Fars province.

The hospital has paraclinical wards and diagnostic services such as CT scan and sonography, specialized laboratory as well as asthma and allergy clinics. This hospital has 117 active beds and 164 temporary beds, and a monthly bed occupancy rate of 80%. This hospital is the poisoning center and the only hospital in Fars province that has a poisoning emergency ward and poisoning specialists. Since March 2016, the hospital has been headed by a faculty member with a Ph.D. in Health Services Management. The hospital's chief executive manager is also a graduate of Health Services Management. The hospital has one hospital head consultant in the morning shift and two hospital head consultants in the evening shift. The evening shift consultants also act as the executive manager of the evening and night, and all the hospital head consultants are Ph.D. students of Health Services Management.

The status of some key performance indicators of the hospital and their improvement from 2016 to 2018 has been presented in Table 1.

2.2. Study design

This study was a qualitative case study in order to determine the "why", "how" and "what" aspects of applying hospital managers educated in the field of Health Services Management instead of other traditional managers, as a change paradigm. A case study is useful when there is a need to gain a deep understanding of an issue, event, or phenomenon in its real and natural context. The central principle of the case study is the need to discover an event or phenomenon deep in its natural

context. For this reason, it is sometimes referred to as naturalism as opposed to the empirical scheme in which the researcher attempts to control and manipulate the variables in question [23].

In the present study, the samples were selected purposefully via the snowball sampling method. Snowball sampling is one of the types of sampling methods suitable for case studies [24], especially in studies that examine a case with a holistic and comprehensive view. This sampling method can lead to knowing more key people and using their opinions and experiences. For this purpose, after selecting and inviting the first interviewee based on the study objectives, s/he was asked to introduce those who had the most knowledge and experience in the field of study. Therefore, the researchers tried to interview 12 people with the most knowledge and experience about their experiences of management style by graduates of Health Services Management. The demographic characteristics of the interviewees have been presented in Table 2.

The required data were collected using semi-structured in-depth interviews from April 2018 to July 2018 after obtaining informed consent from participants.

Interviews were conducted by two of the authors of this article in the workplace of the interviewees and at the end of working hours in a quiet and appropriate atmosphere. The researchers recorded the voices of the interviewees by two voice recorders after explaining the reasons for conducting the research to the participants at the beginning of the interview and obtaining their verbal consent.

Topic guides for the interviews included warm-up questions, as well as main questions and sub-question about improvements and changes in the hospital, the current situation, the status of the hospital's clinical and non-clinical indicators, the performance of evening shift consultants and managers. The probing questions were also asked based on the data provided by the participants, in order to clarify the concept and deepen the interview process.

The researchers tried as much as possible to be active listeners. The interview time was 40–50 min depending on the situation of the participants. The interviews were conducted until reaching data saturation. All interviews were transcribed verbatim and then the transcript was compared with the participant's recorded voice and coded to increase accuracy. The transcripts were read over and over again, in order to be familiarized with the topic, gain the participants' real views and opinions, and extract the meaningful units. In the next step, based on the extracted meaningful units, the initial codes were obtained. Then, by classifying and reviewing these codes, the final codes were obtained. In addition, the key points of the interviewees' speeches and facial expressions and their non-verbal signs were recorded at the time of the interview in order to confirm the content of their interviews and were also taken into account during the transcription. Data were collected and analyzed simultaneously using the thematic analysis method and with the inductive approach in three stages of open coding, axial coding, and evaluation by two authors.

The researchers tried to increase the credibility of the research by long-term participation and adequate interaction with the participants, gathering valid information, and confirming the information by the participants. Step-by-step repetition and data collection and analysis, and the use of review by the supervisor, advisors, and experts were done to increase data dependability. In order to increase the data confirmability,

Table 1. Some key performance indicators of the hospital and their improvement from 2016 to 2018.

Key performance indicators	2016	2017	2018
Bed Occupancy rate (%)	72	79	91
Bed Turnover Rate (patients per bed per)	52	76	83
Bed Turnover Interval (days)	2.4	1.8	1.2
Average Length of Stay (days)	5.2	3.4	2.6
Surgeries to operating room beds ratio	1.1	3.4	4
Net death rate (%)	2.1	0.98	0.92

Table 2. Demographic characteristics of the interviewees.

Demographic characteristics		Frequency (%)
Sex	Female	4 (33)
	Male	8 (67)
Marital Status	Married	10 (83)
	Single	2 (17)
Managerial experience (years)	5–10	5 (42)
	10–15	2 (17)
	15–20	4 (33)
	20–25	1 (8)
Being a faculty member	Yes	2 (17)
	No	10 (83)
Managerial position	Hospital chief executive manager	1 (8)
	Hospital head	2 (17)
	Evening shift manager	2 (17)
	Hospital head consultant	2 (17)
	Hospital Matron	1 (8)
	Head of the emergency department	1 (8)
	Head of the operating room	1 (8)
	University staff managers from the Vice-Chancellor for Treatment and the Vice-Chancellor for Administration and Resource Development	2 (17)
	Head of the University Medical Accreditation Committee	1 (8)

the approval of the faculty members and their supplementary comments were used. The data transferability was also confirmed by attempting to provide a rich description of the research report and results to evaluate the applicability of the research in other fields.

This study was approved by the Shiraz University of Medical Sciences Ethics Committee (Code: IR.SUMS.NUMIMG.REC.1400.040) and complies with all regulations. In order to observe ethical considerations and protect the rights of the participants, the researchers, after explaining the study objectives and obtaining informed consent from the participants, assured them that the text and transcript of the interviews would be completely confidential and without mentioning the names of the participants, and trustworthiness and honesty were observed in the text of the interviews. Also, the dialogues would be deleted after the complete analysis and writing of the article and its publication. Participants were free to leave the study at any stage of the study if they did not wish to continue. Moreover, the researchers promised to give participants a copy of the published article.

3. Results

In this case study, the results of the interviews led to the identification of 6 main themes and 26 sub-themes in the change paradigm of hospital management by graduates of Health Services Management. Themes, sub-themes, and codes obtained from the study have been shown in Table 3. The main themes were structural reforms, process reforms, organizational culture reforms, performance reforms, resource reforms, and consequences and results.

The structural reforms made in the hospital included sub-themes of standardization and accreditation, improvement of physical space, implementation of clinical guidelines, patient rights, and employment of evening shift executive managers and the hospital head consultant.

The interviewees believed that one of the important managerial changes was the standardization and special attention to the accreditation of the hospital. In this regard, one of the participants stated that:

"I can tell you that the operating room building was a completely non-standard building. As far as you can imagine, an air conditioner had been installed on the rooftop. It was used for air conditioning there and its

wind entered the operating room, and this was completely non-standard. The surgical ward belonged to forty years ago and was very old and very worn. Well, one of the good things that this team did here was to rebuild the operating room according to the standards, and also the reconstruction of the surgical ward that was very helpful". (P3).

Another sub-theme identified was the improvement of physical space in the hospital. In this regard, one of the participants stated that:

"Since 2016, when the management team came here, the first thing they did here was to renovate the poisoning ward due to the importance of the poisoning ward, because here is the center of poisoning, and the capacity of 6 beds became 14 equipped beds, i.e. equipped with a monitor and a pulse oximeter."(P3)

Another participant also stated that:

"For example, when we came, there wasn't any bed for patients' companions. In terms of appearance, we started repairing, painting the wards and corridors, and other works such as rebuilding the surgical ward, which had not been rebuilt since 1987, and we tried to meet the maximum standards in the reconstruction. We also sought the comments and opinions of the ward staff. We renovated the operating room and built a buffet and a coffee shop for the patients."(P5).

Or elsewhere:

"The first thing we did in August 2016 was to start the reconstruction of the emergency department by holding several meetings with the university heads and doctors to design a reconstruction plan, and in the reconstruction of the poisoning department, we increased the number of beds in the emergency department from 7 beds to 13 beds. On the other hand, in the internal emergency room, 4 beds were released by Emergency department reconstruction. It was changed a lot in terms of standards."(P6)

And also:

"All the standards were applied. The CSR was reconstructed for safety reasons. All room constructions were done according to the standard of the day. I mean, a ward can be rebuilt. Although the same money may be spent, the efficiency, safety, and satisfaction do not change due to a lack of required knowledge. We tried to make these changes and, in all changes, special attention was paid to safety and improving the quality, that is, the headline of our work was safety."(P5)

One of the sub-themes of structural reforms was the employment of evening shift executive managers and the hospital head consultant, an initiative that was not seen in other hospitals. About this change, one of the participants said that:

"One of the positive things that were done was the employment of evening shift executive managers, which had the two objectives of solving hospital problems and educating Health Services Management students. The evening shift executive managers were selected from Ph.D. students of Health Services Management. Many hospital events occur in the evening shift. With this view, the evening shift executive managers came to the hospital and were able to solve many problems. In the evenings, all tasks had been assigned to the supervisor, who could not solve the problems due to clinical tasks. We used the evening shift executive managers with the aim that the paraclinical support departments supervised by the hospital chief executive manager in the morning shifts had to be the responsibility of the evening shift executive managers. Therefore, the support forces and the pharmacy fund all came under the supervision of the evening shift executive managers and they had the task of resolving problems". (P5)

In addition to solving problems, the issue of educating students by employing them as a manager was emphasized by the participants. Another participant stated that:

"According to our experience, we can have a manager training when it becomes exactly like the medical assistant training process. We now have no process for training an assistant as a management resident, that is, we only train researchers. The faculties do not believe in the manager training system. They believe that they teach the basics and principles of management and the system should use the graduates. However, the system says we want successful managers. We tried different ways. First, we amended the internship regulations, had evening meetings with the hospitals' chief executive managers, and reviewed the problems. In a period of time, we introduced Ph.D. students to hospitals' chief executive managers as consultants, but this did not work and was not effective. We only succeeded when the head of the university supported us, and we took the students to the field and they carried out the executive work as the evening shift executive managers. In fact, there is a need for someone to support these students as an attending physician."(P12)

One of the most important executive policies and structural changes in the hospital was the implementation of clinical guidelines. The participants all believed in the positive effects of this policy. One of the interviewees stated in this regard that:

"One of the things we emphasized a lot because of the managerial view was the implementation of clinical guidelines, which had a scientific basis so that everyone did not have their own method. This guideline implementation was paid special attention. Regular training sessions were held every two weeks with the presence of physicians and every physician in his field of expertise examined the disease that was the priority of the hospital and we tried to take steps in the field of rational consumption of services and I saw the positive results and we became a successful hospital in this field."(P5)

The implementation of clinical guidelines helped the management team to reduce costs and provide better services. One participant spoke about the benefits of implementing clinical guidelines:

Table 3. The main themes and sub-themes of the study.

Main themes	Sub-themes
Structural reforms	Standardization and accreditation
	Improved physical space
	Implementing clinical guidelines
	Patient rights
	Employing evening shift executive managers
	The hospital head consultant
Resource reform	Human resources
	Physical resources
	Financial resources
Functional reforms	Improving efficiency
	Improving productivity
	Service development
	Evaluation and monitoring
Process reforms	Process improvement
	Decision-making process improvement
	Purchasing process improvement
Organizational culture reforms	Participatory Management
	Scientific Management
	Employees' attitude change
	Team building
	Motivational interventions
	Clarification
Consequences and results	Effectiveness of actions and activities
	Staff satisfaction
	Patient satisfaction

"Look at the indicators. For example, it can reduce the length of stay. Also, the drug guidelines used made rational and reasonable use of the drugs which was also in favor of the hospital in terms of cost." (P1)

Or elsewhere:

"Imagine someone who is insured and comes to the hospital, if there is no guideline, the doctor keeps her/him in the hospital for 7–8 days without any reason, and this is to the detriment of the insurance organization and is costly for the hospital. Or we used a guideline that, for example, replaced some expensive drugs with cheaper ones that were not of lower quality. This also helped the insurance organization a lot." (P1)

Another participant commented on the benefits of the implementation of clinical guidelines:

"Another good thing they did was to form a guideline team. It can be said that by implementing the guidelines, you can manage the services that are currently provided and the costs that are incurred in the healthcare system. These caused our laboratory costs to go down in a year and a half. They allowed the patients to receive more disciplined and better services." (P4)

Or elsewhere:

"The guidelines have shown that a lot of what we do for patients do not need to be really done for them. The doctors' work got much better. They realized that a patient who was coming didn't need to have a CT scan, an ultrasound, a chest x-ray, and not all of these need to be done for the patient." (P11)

And:

"We also worked on unnecessary costs by implementing clinical guidelines. For example, until then, for every patient who entered the hospital a series of routine laboratory tests had to be performed for no reason. We identified these tests and decided that the tests had to make sense. We had meetings with various internal medicine, poisoning, and emergency medicine departments. We set up an auto-stop system. For example, a patient can only have a CBC test 24 hours a day, unless there is an abnormal result. In this case, the doctor can prescribe the test and should write the reason for performing this test again." (P8)

One of the other main themes was performance reform with the sub-themes of improving efficiency, improving productivity, service development, workplace improvement and development, and evaluation and monitoring. Improving productivity was one of the topics that the participants mentioned as one of the positive sub-themes:

"We were able to increase the productivity of our paraclinical units very well by making changes. For example, in the first six months of 2018, we saw a significant increase in hospital revenue; from about 8.6 million US\$ to about 11 million US\$." (P8)

Or elsewhere:

"We had 4 operating rooms and 4 recovery beds, which changed to 5 operating rooms and 8 recovery beds by redesigning the spaces. In the surgical ward also the number of beds increased from 32 to 36. By redesigning the spaces, we were able to increase the hospital's productivity." (P8)

Improving performance was one of the participants' highlights:

"... when I checked, we saw that in the outpatient ward many available hospital facilities hadn't been used. While there was physical space, personnel, and equipment, they hadn't been used completely. We used empty and unused spaces and increased our income by 50% during one year, while our costs increased by only 20%." (P5)

Service development was one of the sub-themes mentioned by the interviewees:

"Some disciplines were not available when the School of Management team came in 2016, including rheumatology, which was a much-needed

discipline. We activated the ophthalmology and rheumatology clinics. In the case of our radiology department, the number of our ultrasound specialists was small and we added another ultrasound specialist to the system." (P3)

Workplace improvement and development was also one of the effective measures mentioned in the interviews.

"Another thing that was done in the emergency room was that initially, the emergency room did not have a triage grading, but now it has been graded in such a way that the Emergency Medicine specialists team entered the hospital and now the Emergency Medicine specialists screen the patients based on the severity of the disease. They grade patients at different levels. The Emergency Medicine specialists visit the patients, screen them, and then refers them. This is a very good change." (P4)

Evaluation and monitoring was among the sub-themes mentioned. One of the participants stated that:

"In the first six months of our work, we examined the indicators, processes, and current situation of the hospital thoroughly and in detail. We had a lot of field visits around the clock." (P8)

Or elsewhere:

"Another thing they did was to hold meetings of the executive management team. Before that, there were no such meetings in the hospital at all. In these meetings, we gathered all the hospital managers here. We held these meetings in the presence of the hospital head, his consultant, and the hospital chief executive manager. In these meetings, all the indicators of the hospital were reviewed and evaluated, and everyone wanted was able to evaluate himself, and we were able to somehow get the staff to compete. This made all the staff see themselves in a team and see themselves close to the hospital management team, and there when we were presenting that, for example, a certain indicator had increased and we encouraged this increase, another ward started to work and wanted to get itself into the system, and this caused the indicators in different wards to find a better situation and be improved." (P1)

Another theme extracted from the interviews was process reforms, including the sub-themes of process improvement, purchasing process improvement, and decision-making process improvement.

Regarding the process improvement, the interviewees stated that:

"In the emergency department, the first thing we did after improving the space was to determine the triage grades of our emergency. We tried to modify all our emergency processes based on this emergency grading. Until then, we could not extract these indicators in any way." (P4)

Or elsewhere:

"I myself have experienced that many times a process can be improved without cost and with the least manpower, and only by changing the method." (P10)

And:

"If we saw that there was a problem at work, we would bring together the owners of that process to modify the system. Our view was system-oriented and not person-centered." (P8)

Another one added:

"We held several meetings to improve various processes such as patient admission and discharge, and tried to solve the process problems, and all of these led to a gradual increase in satisfaction." (P5)

Purchasing process improvement was one of the sub-themes discussed by the interviewees, who believed that the purchasing process and its improvement had a significant impact on the hospital's financial situation. In this regard, the participants stated that:

"In the previous management system if I as a ward head went to the hospital head or the chief executive manager, I would say that I wanted a device for a physician who worked under my supervision, maybe they would say, for example, there was no need right now, and he/she had to do something else, but the current management team was investigating the reason why I wanted this echocardiography device, and they would check my indicators. When they saw that with this echocardiography device, a lot of my work was being done, my treatment process for patients was being done much sooner, and my performance indicator was going up, so they easily bought the device for me." (P12)

Regarding the decision-making process improvement, the participants stated that:

"At first, the ward heads did not know what the indicator was and what the process was, but after they got acquainted, they realized that they had to present the indicators and processes of their wards and analyze them. Then, they extracted the ward indicators in the ward committee and developed plans according to those indicators, and reported to the chief executive manager what they thought could be effective in the future of their system. It's very influential in decision-making." (P7)

Organizational culture reform was one of the main themes of the study and included the following sub-themes: participatory management, scientific management, employees' attitude change, team building, motivational interventions, clarification, strategic planning, and effective communication. Regarding participatory management, one of the participants said that:

"Hospital managers now see themselves at work and are analysts for the internal affairs of their wards. The ward heads tell us that we now know where we are and we are willing to solve our problems." (P11)

Or elsewhere:

"Ever since the current hospital head came to the hospital because he had a managerial view, he acted in such a way that our view also became managerial, that is, we were collecting data and calculating our indicators, and then all the heads and managers found a managerial view." (P3)

The employees' attitude change was a sub-theme that the participants stated:

"The first time we came, the attitude towards the new management team was very bad because everyone imagined that a series of people sitting at a desk and wanting to be a manager, did not know anything and couldn't do anything positive work. Their views were really negative. A series of indicators got worse at first. Usually, when the chief executive manager changes, the indicators fall. This was at least what people thought in the first year in the polls, but from the following year, due to the changes and activities they saw, their views gradually became positive and changed." (P6)

Scientific management was a sub-theme that was considered in the interviews. The participants stated in this regard that:

"What we did in the hospital was like the management styles that the Health Services Management students had read in their course. It was an opportunity that what they had read, had actually been used. In other words, the management theories were used and there was an opportunity that all those students applied these theories." (P12)

Or elsewhere:

"Personally, I say that management science also helped me a lot in the hospital. This hypothesis that management is the experience, not science, is not true. In my opinion, if someone with knowledge and science enters the hospital, he will master the system much faster and does not make too much trial and error. While something has been proven, you don't need to carry out and experience that to reach the goal. When management science tells you, suppose I say that personnel is motivated in this way and by this

method, you don't need to come and try one by one and then see which method is better." (P1)

Another participant added:

"We created this attitude in the employees that, for example, when they reported to us, we not only did not treat them negatively, but we also gave them gifts. That was not the case before." (P6)

And:

"The positive thing is that the knowledge of management came to the hospital and that the activities in the hospital also became guideline-based and that a lot of services were provided according to the guidelines, which was a very good action. However, the nature of hospital work is that changes take time, whether its managers are graduates of Health Service Management or physicians; because its processes are similar. The type of services is similar." (P9)

Motivational interventions were expressed from the participants' point of view as follows:

"Sometimes we held appreciation and thank-you ceremonies by the hospital executive team in the university's Jasmine Garden. For the wards whose performance was exemplary, the hospital head and chief executive manager really attended the ceremony. It was very encouraging for the employees to have this close connection." (P1)

Or elsewhere:

"... When we saw that the financial situation of the hospital was ruined, we tried to empower and motivate the human resources and to increase their commitment to the organization by using the happy and fun programs outside the hospital." (P9)

And:

"We made the patient satisfaction index competitive between departments. We said that whichever department produced the highest percentage of patient satisfaction in three-month periods, we would take that department personnel out for dinner, both staff and physicians." (P8)

Regarding the clarification, one of the participants said that:

"One of the good things about this management team was that it explained it to you in a transparent way that how much the income of the Emergency department was this year and your fee-for-service was this amount. Their clarification was very good." (P3)

Or elsewhere:

"... We tried to make the payment fully performance-based, that is, one person would get about 240 US\$ and one person about 48 US\$, and it was transparent. They knew that the person who would be more responsible and efficient got more fee-for-service. We tried to make it clear to the staff exactly how much fee-for-service they had received and for what." (P12)

Effective communication was emphasized by some of the participants:

"We had changes in all our indicators and processes. Staff satisfaction improved a lot. Welfare facilities improved. Equipment was purchased sooner. The management team understood the words of the staff. The situation got much better." (P7)

Another participant added:

"Every time I had a problem, I went to the chief executive manager directly. He investigated the problem and knew what the problem of our Emergency department was. He solved our problems sooner than the problems of other departments. Even the messages I sent were reviewed quickly. That was a good feeling." (P4)

And:

"... Because they were a management team and their job was to manage, they understood us very well. It was a very good feeling." (P3)

Or:

"We have entered the field of organizational behavior. We are creating a culture that tells our staff that if we cannot provide services to patients, we should satisfy the patients so that they leave the hospital with satisfaction." (P8)

The theme of resource reforms with the sub-themes of physical, financial, human, and educational resources was also emphasized by the participants. Regarding the physical space improvements, one of the participants explained that:

"... With this construction change, 4 recovery beds were changed to 8 beds and we added 4 new monitors and then we turned it into a central ward. We transferred the anesthesia clinic from the operating room to the specialized clinic of the hospital. The waiting room of the operating room was renovated and it became a large hall and now the patient's companions sit there comfortably waiting for the patient to leave the operating room. As a result of these changes, the number of surgeries increased. The income and fee-for-service of our ward staff increased. The waiting time for surgeries decreased." (P2)

Another one added:

"They rebuilt the Emergency department completely. The hospital's popularity in the field of poisoning has increased compared to previous periods, and now everyone knows Hazrate Ali Asghar Hospital by the name of the Poisoning Center. This fame did not exist before." (P2)

The development and improvement of human resources and the recruitment of the required manpower were among the sub-themes emphasized. In this regard, one of the participants said that:

"Another action taken by the management team of the School of Management and Information Sciences was to bring Emergency Medicine specialists to this hospital. Before that, poisoned patients were visited by general practitioners and the patients did not receive specialized services. Bringing the Emergency Medicine specialists to the hospital was aimed at visiting the patients of the poisoning ward with a more scientific perspective and, in fact, they could be managed better and fewer problems would be created." (P3)

And:

"For example, in the sonography department, with the consultations we had with the university heads, we were able to increase the number of radiologists, which subsequently the number of patients referred to this department increased. By bringing a specialist, we were able to use a CT scan machine that was unused for years." (P8)

Or elsewhere:

"In this hospital, the management approach of all the people involved in management changed. We put succession planning at the top of the agenda, for example, a few of our hospital nurses get managerial positions elsewhere. (P12)

Changing into a teaching hospital and the creation of a new environment and opportunities for teaching students were among the sub-themes emphasized:

"We had two discussions. One was that Health Services Management graduates could better manage hospitals and medical centers than others because they had the required knowledge. This was one of our hypotheses and we always said that to the university head and he decided to provide a field for Health Service Management students in order to evaluate this hypothesis." (P5)

Physical resources were one of the sub-themes of resource reforms. The participants stated in this regard that:

"For the first time in the whole province, we changed 7 emergency beds into 15 emergency beds in just 45 days, with the same current atmosphere by the changes we made in the use of hospital space. We tried to use the latest installation, equipment, and technical information in the Emergency Department." (P8)

Another sub-theme was financial resources. In this regard, the participants stated that:

"The success of the hospital depends on the coordination with and support of higher authorities. For example, the Hazrate Ali Asghar Hospital became the top hospital in 2018 in reducing costs and was commended by the Minister of Health and Medical Education and his deputy. It was teamwork. We tried to spend the expenses of each ward for that ward as much as we could, that is, we didn't pay salary from Hoteling money, and the income money was given to the staff and physicians. One of the actions that were taken was outsourcing. For example, we outsourced the endoscopy ward. But some of the wards we wanted to outsource, the contractors refused to cooperate due to non-timely payment by the hospital. However, when we could meet our commitments and outsource, the hospital was successful." (P12)

Or:

"In those two years, that is, in 2016 and 2017, the income of the hospital had grown a lot. I think the reason was that a series of services were added to the hospital services, and we also did some marketing for the hospital services. For example, our employees had set up a table in Motahhari clinic. Everyone from the other cities invades there and cannot receive the physicians' appointments because of the crowds. Our employees went there and shifted these patients to our own hospital with the permission of Motahhari clinic chief executive manager, and this actually increased the number of our hospital patients and the bed occupancy rate." (P1)

Consequences and results were one of the main themes, which included the following sub-themes: patient rights, improving efficiency and productivity, improving effectiveness, patient and staff satisfaction. Regarding the improving efficiency and productivity, the participants stated that:

"The manpower indicator decreased from 3 to 2.4 and the employees' satisfaction rate rose from 74 to 88. The discharge against medical advice decreased from 15 to 6. Some of the indicators grew by 25 percent. The unsuccessful CPRs decreased from about 30 percent to close to 10 percent because of the much training we provided and the presence of Emergency Medicine specialists. Many quality improvement indicators in the Emergency Department were improved with the help of Emergency Medicine specialists. The bed turnover rate index grew. One of our problems was inducing unnecessary services, which was reduced by implementing the guidelines, and the Iran Health Insurance Organization praised us twice for this reason. Because the number of laboratory tests had been reasonable, we had about 4.8 million US\$ savings per year through implementing guidelines and reducing the use of unnecessary drugs." (P12)

And:

"Maybe we worked on the indicators for about 6–7 months so that we could make them real and achieve the right results. At first, the ward heads did not know what the indicator was and what the process was, but after they got acquainted, they realized that they had to present the indicators and processes of their wards and analyze them." (P8)

Or:

"We are one of the centers that determine the condition of our patients between 6 hours and 12 hours. We worked on many of our indicators, including emergency department indicators such as the percentage of

successful CPRs, and patients' discharge against medical advice. The assignment indicator for patients under 6 hours was improved. Also, the indicator of physical exit below 12 hours became normal." (P6)

One of the sub-themes was improved staff and patient satisfaction. In this regard, the participants stated that:

"Daily comments were taken from patients and we followed them up. Complaints were very high at that time. We held several meetings to improve various processes such as admission and discharge and tried to resolve the problems, and all of these led to a gradual increase in satisfaction." (P5)"

And:

"We have done a lot in the field of staff satisfaction. We have tried to pay attention to staff satisfaction along with patients' satisfaction. For example, by offering bank loans to staff through signing contracts with banks, we helped to improve the financial situation for staff. We hold special camps. We have sightseeing camps in Shiraz. We have staff birthdays every month. Now, the patient satisfaction is about 87.4% and the staff satisfaction is about 85.9%." (P8)

Another sub-theme was patient rights. In this regard, the participants stated that:

"For the first time, we received the consumer rights protection plaque from the Ministry of Industry, Mine, and Trade for three consecutive years. Also, we could become a top and model hospital in the country in terms of rational use of services. In other words, three hospitals were selected and praised by the Minister of Health and Medical Education, one of which was the Hazrate Ali Asghar Hospital which was the only hospital praised in Fars Province. In the patient standards, we grew and now the hospital score is 18.5." (P5).

For a better illustration of the relationships among the study's main themes and the sub-themes, a thematic network has been presented in Figure 1. According to Figure 1, the change paradigm of management in the studied hospital has led to 5 types of reforms, including the structural, process, functional, cultural, and resources reforms. These reforms have also led to some consequences and results such as patient and staff satisfaction as well as the effectiveness of actions and activities.

4. Discussion

The use of professional managers in the public and private sectors helps to improve the efficiency, effectiveness, and accountability in providing services in a sustainable manner [17]. The hospital as the most important medical organization has always been paid special attention by everyone and this organization needs the appropriate decisions of managers so that the correct decision-making method of managers can have a significant impact on the hospital performance [3] and without using the scientific principles of management, the goals of this center, which is to improve the level of community health, will not be achieved [6]. The present study was a qualitative study conducted with the aim of studying the change paradigm of hospital management by graduates of Health Services Management in Hazrate Ali Asghar Hospital in Shiraz.

Among the changes resulting from the management of Health Services Management graduates in the studied hospital was structural reforms, one of its sub-themes was the standardization and accreditation. Standards play a valuable role in showing the desired minimum and expected performance, targeting, determining the current status of the hospital, implementing training programs, evaluation and monitoring, and directing the activities of the organization. On the other hand, the performance of clinical staff, especially nursing staff, has a great impact on increasing hospital productivity, efficiency, effectiveness, as well as patient satisfaction [25]. Through accreditation, hospitals provide their services with high quality and taking into account the safety of individuals in order to improve health outcomes [26]. The results of a study

showed that the observance of physical space standards was effective in the performance of personnel in the surgical ward [25]. In another study, physical space standards were recognized as one of the main requirements of the patient safety management system [27].

Also, another structural reform of the hospital, which was very significant, was the reconstruction of the hospital emergency department, which was resulted in the great reduction in the burden of the problems of this ward, especially the burden of referrals of poisoning patients. In this regard, the results of a study showed that the emergency department as a key department in the hospital had to have balanced growth and development with other departments, because according to the chain theory, which considers the maximum power of a chain as the maximum power of its weakest link, the emergency department, as a link in the hospital's healthcare chain, plays a vital and key role in following the hospital's goals, and a weak emergency department can threaten the hospital's survival like a weak link [28].

The implementation of clinical guidelines in this hospital was one of the most important and unique changes in this hospital, which caused very effective results such as reduced patients' length of stay and rational use of drugs and antibiotics. Clinical guidelines can improve health quality and reduce unnecessary, harmful, or useless interventions by providing effective advice for the management of patients' problems and by determining the standard clinical procedures. Also, clinical guidelines can be considered as effective and practical content for educating health care providers and a document to help the patients and their families make informed decisions [29].

The results of a study indicated that by the use of clinical guidelines, patient management was standardized in screening, referral, diagnosis, treatment, and follow-up [30]. One of the initiatives of this hospital management team was the use of Ph.D. students in the field of Health Services Management as the evening chief executive managers and the hospital head consultant who, along with the evening and night supervisors, managed the hospital affairs in these shifts by the authorities delegated to them by the hospital chief executive manager, and their main focus was on support and paraclinical tasks. The results of a study showed that hospitals could increase efficiency and decrease the planning problems by planning human resources and optimal use of employees, time, and money [31]. The use of Ph.D. students as the hospital head consultant led to the achievement of good results, including helping the hospital head in addressing the hospital management challenges in various dimensions as well as continuous availability to help solve staff problems.

Another management reform in the Hazrate Ali Asghar Hospital implemented by the Health Services Management graduates was the resource reforms, one of its most important sub-themes was the human resources. The use of medical specialists, especially Emergency Medicine specialists, to organize the emergency department, especially the poisoning emergency department, was one of the significant managerial strengths. Previously, the emergency department was run by general practitioners, but due to the overcrowding of patients and the specialization of diseases, these physicians could not manage patients in a completely specialized way. With the arrival of Emergency Medicine specialists, in addition to the specialization of the emergency department, this department was also graded in terms of the severity of the patients' diseases, which helped a lot in organizing this department.

Also, the managers of the hospital succeeded in helping the empowerment of the emergency department human resources by employing skilled and experienced nurses. In this regard, the results of a study showed that with the presence of emergency medicine specialists in the hospital, patient care was in a better position, and waiting time to access services was significantly reduced. By reducing the waiting time of patients, determining the patients' assignment, and specifying their destination in the hospital, the emergency beds would be left empty for other possible admissions and, therefore, the emergency department would be ready for future admissions [32]. A systematic review of Emergency

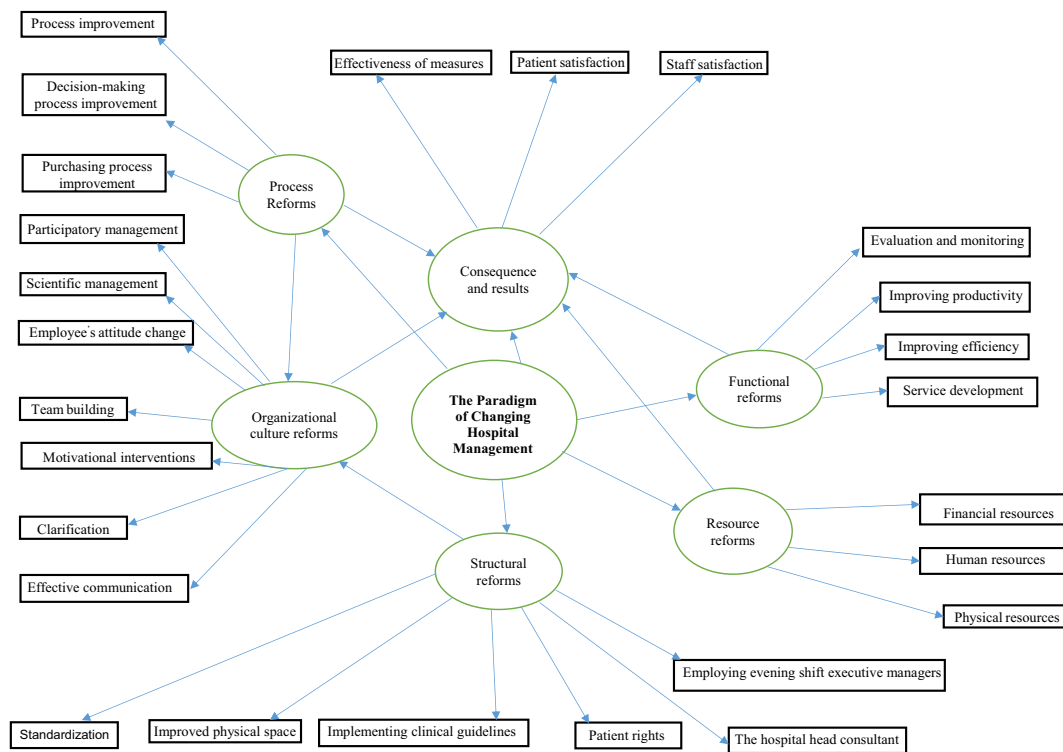


Figure 1. Thematic network of the study.

Medicine in the United States concluded that Emergency Medicine had to be improved immediately because of the people's needs and expectations. In the United States, Emergency Medicine is well integrated into the health care system and this is the most effective way to provide emergency patient care [33].

Another resource reform sub-theme was the physical resources, so that following the reconstruction of the emergency department and operating room, the purchase of quality capital equipment was on the agenda of the hospital's managers. Medical equipment plays a valuable role in helping patients live longer and have a higher quality of life [34] and plays an important role in diagnosis, treatment, education, and rehabilitation. Each year, a large portion of hospital costs is spent on medical devices such as radiology, laboratory, and surgery equipment, as well as equipment such as monitors, ventilators, and anesthesia machines. Medical equipment management is one of the hospital management approaches that can monitor this type of equipment in diagnosing, treating, and monitoring patients [35].

Financial resource reforms were also implemented in the hospital. The impact of the financing system in all areas of health, especially hospitals, is of particular importance. What the origin of financing the hospital is and how these organizations justify their spending in different departments and wards are reflected in the system of allocating financial resources by using appropriate payment systems. In other words, the relationship between the hospital's financial system and the payment system is a well-established issue in such a way that the financial resource allocation system reflects the hospital managers' approach to the distribution of resources and seeks to achieve the hospital set goals by properly allocating resources in an appropriate payment system [36]. The ability of hospital managers to budget and manage the organization's financial resources through financial planning, accounting, and cost control has a significant impact on increasing hospital efficiency. Managers' weaknesses in budgeting create many challenges in the development and implementation of organizational programs that ultimately hinder the achievement of organizational goals. Therefore, practical training should be provided to hospital managers, especially senior and middle managers, so that they can develop fact-based and evidence-based programs

and increase the efficiency and productivity of their organization with proper cost management. In one study, the performance of hospital managers in Sari, Iran in performing their budgeting tasks was evaluated as moderate [8].

Another important theme that emerged from the results of the present study was the functional reforms. Proper and timely evaluation of the hospital performance and performing corrective measures can lead to improved service quality, increased patient satisfaction, and improved health outcomes [36]. Thus, evaluating the hospital's performance is very useful and shows how the activities and use of resources in the hospital have been done. Performance appraisal provides managers with the information they need to evaluate and monitor the current activities of the hospital [37].

The functional reforms in this hospital included improving efficiency and productivity, service development, and evaluation and monitoring. Paying attention to the proper and efficient use of resources will help to create economically justified hospitals and this will play a very effective role in achieving health goals [38]. By using expert and professional managers, the efficiency of health care organizations can be increased [21]. In a study conducted on a number of hospitals in Tehran, researchers assessed the efficiency of the studied hospitals as moderate [37]. The results of another study showed that improving the performance of managers had a significant role in improving the productivity of hospitals [8].

In the studied hospital, implementing process reforms in many processes helped to improve hospital affairs. These reforms and changes were in various dimensions of hospital processes, including process improvement, purchasing process improvement, and decision-making process improvement. Studies show that the decision-making process in the country's hospitals is mostly individual and hospital managers often use their experience as well as intuitive decision-making in solving organizational problems but don't emphasize the need for scientific and evidence-based decision making [39, 40]. Hospitals are very complex specialized organizations that include managers and professionals whose job is to manage the many and sometimes conflicting demands of the people for health services. As a result, the type of decisions that are made in these organizations is complex. Therefore, hospital managers need to develop

their decision-making skills. Managers can learn decision-making skills. They need to strengthen their strategic, systemic, creative, lateral, and critical thinking in order to be able to solve hospital complex problems using rational and intuitive approaches. Hospital managers should use scientific evidence in their decisions to increase their chances of making successful decisions in practice [41].

In the current study, organizational culture reforms were among other reforms performed in the studied hospital by the new management team. These reforms were implemented in different dimensions in the hospital, each of which was able to bring about fundamental changes in the hospital organizational culture, especially among the clinical staff, so that this was the first time these changes had taken place in this hospital. One of these important changes was to create a participatory management culture, the starting point of which was the formation of continuous and effective meetings of the heads of all wards and units of the hospital with the new hospital management team. These meetings were held once every two weeks and were led to the awareness of all heads of wards and units about the problems of their wards and units, their involvement in issues related to their wards and units, and their encouragement to solve problems related to their wards and units. By using participatory management techniques, especially quality improvement groups and committees, it is possible to improve hospital services and thus increase patients' satisfaction with the services provided.

Participatory management can improve the morale and productivity of hospital staff; however, it does not always lead to the success of any organization. Therefore, this management style should be used with caution. Improper use of participatory management by managers, consultants, or employees who lacked the necessary skills has had negative consequences. In other words, the use of participatory management without providing the necessary context may have the opposite effects. Hence there should be a culture of acceptance of participation at the level of managers and employees of the organization. In addition, appropriate incentive mechanisms should be used to maintain and develop employees' participation. Implementing a participatory management plan requires the serious support of the organization's senior manager. The job stability of senior managers has a great impact on the development of a participatory management system. Therefore, until the institutionalization of the participatory management system, the senior manager of the organization should have job stability [42]. The results of a study showed that collecting complete information needed for decision making, employee participation in decision making, and getting feedback from them about the decisions made had the greatest impact on the managers' decision-making performance [5]. The results of another study showed that the organizational culture of the studied hospital was at a desirable level and this would lead to successful changes in the hospital and help its managers in systematically anticipating change priorities and better formulating strategies for successful implementation of management techniques and processes [43].

One of the other sub-themes of organizational culture reforms was the institutionalization of scientific management in the hospital so that the view of the managers of this hospital became systematic and holistic, and all decisions made and functions performed were based on scientific principles and motion studies, and the staff was also aware of this important matter. Because the hospital is a social, specialized, and very complex organization, undoubtedly, the management of such a specialized organization requires specialized managers who have graduated from Health Services Management. Professional healthcare managers allocate limited resources well by calculating the capacity of production inputs and forecasting demands. Due to the changes in health care organizations, there should be changes in the training of health care managers. Managers of health care organizations should have the basic knowledge of management and strategic, systematic, creative, lateral, and critical thinking skills in order to formulate appropriate goals and strategies to improve the hospital performance, to lead and guide staff to implement programs, and to ensure the achievement of organizational goals through carrying out effective control and evaluation [36].

The management of the Health Services Management graduates team in the Hazrate Ali Asghar Hospital was led to the consequences and results which were able to introduce the hospital as a hospital with a suitable management model in the country and gain honors in this field, the most important of which was in the field of patients' satisfaction which was resulted in the acquisition plaques in the fields of consumer rights protection as well as honoring the client and customer orientation for three consecutive years from the Ministry of Industry, Mine and Trade. Also, the hospital was able to make significant progress in terms of effectiveness indicators of actions and activities during this period, which helped a lot to create a good image for the hospital in the community. Results of a study showed that managers whose organizational position was related to their field of study, performed better [8] because they do things like prioritization, goal setting, activity analysis, and control better and use appropriate management strategies and encourage their employees to achieve organizational goals [21], which are consistent with the results of the present study.

5. Study limitations

This study had a limitation. The nature of the case study causes the generalization of the results to be restricted to similar settings. This type of study leads to new hypotheses that need to be tested in further studies.

6. Conclusion

According to the results, shifting from the use of traditional managers to the use of graduates of Health Services Management in the hospital proposed as a change paradigm in the hospital management is accompanied by some reforms in the hospital structures, processes, resources, culture, and performance. Such reforms may lead to some valuable final consequences and results such as increasing patient and staff satisfaction and effectiveness of the services. This hypothesis is recommended to be tested in other similar settings.

Declarations

Author contribution statement

Peivand Bastani: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Mohammadtaghi Mohammadpour and Jamshid Bahmaei: Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Ramin Ravangard and Gholamhossein Mehralian: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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