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## Barriers and Strategies for Implementing Knowledge in to Health System Management: A Qualitative Study

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### Abstract

**Background:** The gap between knowledge and practice is a global issue that reduces service quality by creating barriers to knowledge implementation, and thus strategies should be developed to resolve it. The present study aimed to explain barriers and strategies for implementing knowledge implementation into Iranian health system management.

**Methods:** This qualitative study was conducted on 53 managers and health management graduates in 2018. Participants were recruited through purposive sampling in Medical Sciences Universities in Iran. Data were collected by semi-structured interviews based on the "Promoting Action on Research Implementation (PARIHS)" framework, focus group discussions and Delphi technique. The PARIHS framework has three main elements including; evidence, context and facilitation. The Lincoln and Guba criterion was used to assess the rigor of the study. Data were analyzed in MAXQDA software version 10 using directional content analysis.

**Results:** After data analysis 9 subcategories and 3 main categories including; evidence, context, and facilitation were emerged. In addition to three subcategories including, culture, leadership and evaluation, the socio-political subcategory was a context for knowledge implementation main barrier in the organizational context. The systematic structural planning for the combined use of four sources of knowledge is the most important strategy.

**Conclusion:** The lack of context readiness in using knowledge and lack of efficient system impeded knowledge implementation in the health system management. Therefore, managers and policy makers need to design a comprehensive system based on current knowledge and successful experiences.

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### Introduction

Gaining, increasing and spreading knowledge are considered as an important factor in high-performance organizations. Nowadays, organizations take heed of how knowledge is spread and shared among her personnel which might be attributed, possibly as the main reason, to organizations' effort in identifying those experts who are able to acquire new knowledge (1). Knowledge sharing or propagation process refers to all activities related to the spread or transfer of knowledge from one individual or an organization, to another individual, group, or organization. Knowledge sharing is considered as a vital factor for organizations (2), as it entails the development of skills, merits, values as well as the continuity of competitive advantages (3). Also, knowledge sharing defined as "define knowledge sharing as the provision or receipt of task information, know how, and feedback on a product or a procedure" (4). Almost everything we do in nursing is based on our knowledge and nursing knowledge is known as the culmination of practical experience and evidence from research, which over time becomes the "know-how" of clinical experience (5).

Some maintain that the definition of knowledge sharing is focused on components such as speed, volume, effectiveness and internalization, but the important issue is to what extent the made attempts have been influential and whether one can be sure about the internalization of the knowledge in a new environment (6). The effectiveness of knowledge sharing and transfer can be measured through measuring the changes created in receivers' level of knowledge or their performance level (7). Knowledge sharing is a group of behaviors aimed at facilitation of the type of individuals' relationship, and in order to promote knowledge-sharing behavior, people need to understand the influences and the mechanism that drives individually to contribute their valuable knowledge with others (8). Knowledge management and sharing are being applied to enhance nursing education curriculum and as a framework for designing nursing knowledge systems (9).

On the other hand, management consulting as an industry and practice can be viewed through the lenses of institutional theories and transaction cost economics (principal-agent problems, transaction costs of outsourcing advice and implementation (10). In nursing, knowledge sharing occurs when knowledge in any form is passed on from one nurse to another and may take place one-on-one or on a large scale through coaching, teaching, and learning (5).

Even though knowledge sharing is mainly perceived as an inter-personal activity in organizations, in some cases it is defined at higher levels such as inter-department, and inter-sections. In some definitions, it is considered as a process in which a unit in an organization is influenced by the experience of another unit (8). Thus, the capability of knowledge sharing among and within the groups is of prime importance (11). Point 9 of the NMC 2015 Code of Conduct states clearly

that nurses must share their skills, knowledge and experience for the benefit of people receiving care and their colleagues (12).

The recent advances lead to the increase in knowledge at universities, knowledge sharing gains greater significance in such organizations day by day. As shown by studies, active and voluntarily sharing of knowledge is an essential element of effective and meaningful learning at university level (11). On the other hand, the success of knowledge sharing is vital because, if successful, it results in shared intellectual capital. Knowledge sharing success, to a great extent, lies in the employees' capability to share knowledge (13).

In fact, to store and develop the expert knowledge existing in higher education sector, an appropriate framework is required for transfer of the knowledge and experiences existing within and between the educational groups. With this in mind the need and importance of sharing knowledge with other nurses and healthcare colleagues should never be overlooked. As nurses, they can never stop learning and should use all available opportunities to impart and share their knowledge and skills to those around them and likewise seize opportunities to learn from others (12).

Different factors contributing to the knowledge sharing behavior include: environmental factors such as the organizational context of the structure, leadership properties and managerial support, motivational/perceptual factors including beliefs and the level of trust, individual properties such as gender, personality and perceptions on knowledge sharing such as attitudes toward and individuals' intention of knowledge sharing (14).

The review of literature indicates the presence of several facilitators and obstacles in various organizations for knowledge transfer and sharing. Presence of proper relationships, having enough time (15), and relative sameness of educational level are among the facilitating factors, and age difference between the sharer and recipient of knowledge (16) lack of trust in the accuracy and value of individuals' knowledge and differences in values and beliefs (17) are among the identified obstacles. Kohengkul et al. conducted a study in Thailand on knowledge sharing between university researchers and university professors, and evaluated various factors such as organizational culture, cooperation strategies, organizational environment, and professional satisfaction (18). Also, result in a study identified that six factors that sustain knowledge sharing in nursing are self-selection, validation of one's practice with others who shared a similar working situation, a need to gain a better understanding of current knowledge and best practices in the field, a non-competitive environment, the asynchronous nature of the Considering the fact that developing countries such as Iran utilize developed countries' knowledge widely, it is necessary to identify the solutions and barriers, as the effective factors in knowledge sharing in the important academic organization of Iran, and then strengthen the existing strategies for knowledge sharing in these organizations.

In the study conducted by Alipour Darvishi, technological capabilities, organizational culture, organizational structure, knowledge documentation status, supervising control, and motivational strategies as organizational background factors; and trust in management, perception of organizational support as perceptual factors were identified as the effective factors in knowledge sharing within and among the educational groups in Islamic Azad Universities (14). Also, in a study entitled "The role of knowledge sharing culture in business performance, The research finding revealed the impact of the mediating variable knowledge sharing culture on the enhancement of business performance and cited that both knowledge sharing strategy and human resource strategy were observed to have a positive direct effect on knowledge sharing culture (19). In other study, knowledge sharing in nursing was cited as a need to gain a better understanding of current knowledge and best practices in the field (20). Considering the significance of evaluation of the knowledge sharing methods and identification of existing solutions and barriers at universities as per the above review, as well as the fact that no similar studies have thus far been conducted in Guilan province on this subject, and since contextual and quick access to proper information has high importance for nurses (21), an emphasis on the results yielded by the present study on the effective individual, organizational and technical factors in knowledge sharing can help with promotion of these effective factors. Also, an emphasis on the results yielded by the present study on the effective individual, organizational and technical factors in knowledge sharing can help with removing or decreasing the existing barriers. The present research is aimed at "identification of solutions and barriers to knowledge sharing at universities as per the viewpoint of Faculty Members" at Guilan University of Medical Sciences.

## Methods

This cross-sectional study was conducted on 300 married women in Yazd in The present qualitative study was conducted with a directional content analysis approach in 2018 (17). The coding is based on previous findings, but in the process of data analysis, researchers are immersed in the data and allow categories or fields to be derived from the data (18). The present study was conducted at two stages. At first, 15 eligible managers and heads of health management departments working in I Medical Sciences Universities in Iran and the health insurance organization were selected by a purposive method with a maximum variation. The eligibility criteria include at least 6 years of managerial experience and giving written consent inform to participate in the interview. The interviews were arranged in a semi-structured and conducted individually, in a quiet setting with initial cooperation and agreement. Interviews were conducted to explore the three main elements based on the Promoting Action on Research Implementation (PARIHS)" framework (table 1).

Interviews started with the following open-ended general questions: What resources do you use in your managerial decision-making? Share your experiences of informed decision making based on for the organizational context and the methods of dealing with the barriers and facilitators of the evidence based management and knowledge implementation. Followed by a clarifying question to explain and deepen answers. The interviews lasted 60-90 minutes. All interviews were transcribed and read several times to familiarize with data and gain an overall understanding of the text. Data coding were carried out based on main three main elements of the PARIHS framework with a deductive approach using the MAXQDA10 software (VERBI Software based in Berlin, Germany 2011).

To assess the rigor of the study the criteria of Lincoln and Guba, including credibility, transferability, dependability, and confirmability was used (20). The accuracy of data increased by measures such as allocating sufficient time to data collection, using different data collection methods, as well as active participation of other members of the research team at all stages of data collection, analysis and interpretation. To evaluate the data reliability, the researcher read the interviews several times. In addition, peer reviews were conducted by faculty members, researchers, and others with the expertise and knowledge to qualitative research and knowledge implementation, and the initial coding was modified based on their suggestions. Furthermore 2- focus group discussion (n=11) were held after extracting main categories to determine barriers and facilitators. All processes were also carefully documented to increase the transferability and allow others to follow the research. Using the Delphi technique over three phases of the second stage, the barriers were emailed to 33 faculty members and managers of health management departments with at least 5 years of management experience. 25 individuals responded to emails. At the second stage, the extracted strategies at the previous stage were sent to the panel members for prioritization. At all stages of Delphi more than 70% agreement between participants was considered as a criteria for the acceptance of the strategies.

In terms of ethical considerations, participants were assured that their information would be kept confidential.

Table 1. Three main elements of PARIHS Framework

Main elements	Sub-elements
Evidence	Research
	Clinical experiences
	Patient experience
	Local data/ information
Context	Culture
	Leadership
	Evaluation
Facilitation	Skills and attributes
	Purpose and role

## Results

The demographic characteristics of participants presented into the table 2. After analyzing the interviews 1222 codes were obtained which categorized under three main elements of PARIHS framework.

Data analysis led to emerging barriers on knowledge implementation in three main sub-elements of evidence as reported below:

- **Managers' high workload**

The findings indicated that managers spend most of their time in committee and council meetings.

"The university principals may be a member of 50 committees; and each committee may be held once a week or month. Look, they need to spend all their time".

- **Inadequate managers' dominance of information technology and resource search strategies**

Participants claimed that the above factor prevented the knowledge application implementation; and it was sometimes due to the lack of easy access to banks and information sources; and two obstacles had a synergistic effect.

"Many of our managers are not interested in IT, figure, and statistics, and are not capable, and some of them do not work based on statistics, documents and information".

- **Lack of certain structure and system for using others' experiences**

The results indicated that managers used experiences of past managers and other colleagues, but the experiences were not systematically collected and not easily shared with managers.

"There is a need for someone who can be a reference, for example, for buying dormitories, they called me after 5 years saying that we have no documentation. I informed them. These experiences should be automatically collected and documented somewhere".

- **Lack of a systematic structure for using the service recipients' comments**

According to results, there is no comprehensive system for receiving and recording comments and using their results; and their case views are used.

"There is not any systematic approach to use the ordinary people or services recipients. But since I was usually in the environment, I used it informally and applied their comments sometimes".

- **Distrust in service recipients' views**

Managers believed that service recipients usually did not carefully complete the survey forms; and managers did not trust the results and seldom used them.

"I know about people's opinion by getting in touch with them. However I visit a lot of patients every day and ask them if they have any problems, I really don't believe taking feedback by this manner".

The results also indicated that most managers used some available data of system like guidelines and regulations issued by the Ministry of Health but they stated some barriers in this issue:

- **Failure to collect data and information systematically**

Participants emphasized the use of information on a case basis based on their preferences or accessibility.

- **The existence of parallel and unmanageable guidelines**

The participants in terms of available data of system believed that there were numerous, cumbersome and parallel guidelines and regulations in the organization that prevented the knowledge implementation.

"There are many laws, so we have problems that laws are not stable. We adopt a law to recruit staff this year, and everything is canceled the next year and a new law is adopted. For instance, a hospital is actually being opening, but its facilities have not come yet" (Table 3).

Data analysis led to emerging barriers on knowledge application implementation in main category of context as reported below:

- **Concentration, complexity and expansion of the health system**

Participants emphasized that concentration hampered creativity and reduced their maneuverability.

"The health system decides, monitors and implements. This is a flawed cycle, that is, we are policing making, implementing and monitoring ourselves. This is not a correct form of management".

- **Lack of human resources and their poor quality are problems of the health system.**

"The problem is the quality and quantity of manpower. We have a severe shortage of manpower".

- **Failure to adapt the educational content to the actual needs of the health system:**

The university graduates' knowledge does not meet the real needs of society and they lack many skills and knowledge.

There is no fully compatible lesson with our "graduate student who is going to work later in the system. Their knowledge and skills are problematic. We had a nursing staff who didn't know how to insert a catheter".

- **Unreliability about health management graduates**

The health system does not trust in graduates of this field, although some believe that it is better to use them experimentally before any judgment. We even have management graduates who are not good at managing, indicating.

- **Lack of attention to all sectors of the health system in the same way**

The results indicated that health system managers had an island look at different sectors, and reduced the power of low level managers by leading the resources towards specific direction and imbalance.

**Table 2. Demographic characteristics of participants**

Type of participation	Average work experience (Yr.)	Educational grade		
		Master	PhD	Medical specialist
Individual interviews	27.4	2	6	9
Focus group discussion	26.9	---	5	8
Delphi technique	25.9	---	16	9
Total		2	27	26

**Table 3. Barriers and recommended strategies for knowledge implementation in the health system management: evidence sub-elements**

Evidence sub-elements	Barriers	Recommended strategies
Research	Managers' much engagement	Reducing number of committees and councils Enforcement of authority delegation by managers Time Management Training for Managers
	Inadequate ability of Managers in information technology and searching	Compulsory English and IT training for managers before appointment and during service Using experienced IT and English consultants
	Little attention to research results	Creating belief in stakeholders in effectiveness of using evidence in management Designing an incentive system for managers to use research results
Service provider	The lack of a systematic structure for utilizing the service providers' experiences Lack of evaluation and validation of experiences	Creating a system for recording the stakeholders' experience and encouragement to record their experiences Necessity of establishing the monitoring systems and evaluating documents and experiences
Service recipient	The lack of a systematic structure for using the service recipients' views	Designing a satisfaction survey system using IT platform and virtual space Training managers on familiarity with customer relationship techniques, and mutual respect
	Managers' distrust in service providers' opinions	Publication of results of applying the service providers' views in the health system
	Service recipients' lack of quick and easy access to officials	Reducing managers' engagement by decreasing the committees and councils
System and information data	Lack of systematic data collection and organization information	Launching a system for collecting and processing information in the health system
	Existence of guidelines cumbersome	Review of guidelines, and paying attention to scientific standards with stakeholders Pilot application of guidelines
	Lack of proper application of guidelines	Assessment of managers based on levels of application of operational projects and guidelines Explicitly in the formulation of guidelines

**Table 4. Barriers and Recommended strategies for knowledge implementation in the health system management: context sub-elements**

Context sub-elements	Barriers	Recommended Strategies
Leadership	Concentration, complexity and expansion of the health system	Decreasing the health system outsourcing Passage of law on the reduction of concentration in the Ministry of Health Teaching principals and methods of delegating authority to managers
	Lack of flexibility in organizational structure	Health organizational structure overview Implementing the existing structures
	Lack of staff	Teaching health economics techniques
	Non-compliance of the education content with real needs of the health system	Comprehensive review (curricula) and training content
	Training human resources regardless of real needs of the health system	Training human resources according to real needs of the health system
	Unreliability in health management graduates	Applying graduates of this field and examining results of these appointments Scientific and executive development of management specialists Using the experience of successful managers who studied management
Culture	Island look at health system sectors	Delegation of authority of health ministry staff to universities Improving the levels of intra and extra-departmental cooperation
	Employee Resistance to development	Involving the employees in benefits of change and making them aware of the process and results of change Teaching Models of change to managers
	Lack of enough motivation in staff	Designing a comprehensive incentive system considering motivational factors: promotion, financial and welfare, and job turnover and enrichment, job opportunities, appointments, etc. Teaching managers about motivational theories and organizational behavior
Evaluation	No systematic feedback and corrective action	Modifying the evaluation system and using multiple evaluation resources (service recipients, providers) and systematic use of its results

**Table 5. Barriers and Recommended strategies for knowledge implementation in the health system management: Context sub-elements (Beyond the PARIHS framework)**

Context sub-elements	Barriers	Recommended Strategies
Social and administrative policies	Interventions of political and regional factors	Employing an independent capable manager based on the regulations of manager appointment Adherence to laws and regulations Providing stakeholders access to the decision making process
	Replacing regulation with relations	Modifying the system of punishment and encouragement based on the level of adherence to guidelines
	Managers' instability	Decreasing the number of clause in laws to prevent the use of personal opinions Developing job security for managers
Appointment of managers	Inefficiency of regulations of manager appointment	Modifying the regulations of manager appointment based on competencies using experiences of successful societies
	Priority of experience to knowledge in appointing managers	Continuous and sustained training for managers

Table 6. Barriers and Recommended strategies for knowledge implementation in the health system management: Facilitation

Element	Barriers	Strategies in order of priority
Facilitation	Lack of systematic structure and a systematic facilitation process	Creating or modifying the facilitation structure and processes
		Creating belief in stakeholders in effectiveness of facilitators
	Unbelief in the need for facilitators	Reflecting successful experiences in application of facilitators
		Teaching staff and managers about the methods, processes, and benefits of facilitating
Lack of empowerment and sustainable education	Applying the experiences of successful organizations and training them to health system managers	

"In the field of health, it operates as an island. For example, a program is designed in the health department to deal with the treatment, but there is no coordination at the ministry, and resources go towards that direction depending on the director's opinion".

The results indicated that the health system staff had low motivation and it was perhaps one of the most important barriers to the health system management.

"There is also no incentive for staff to read their instructions, and then an expert should give the last comment, not the hospital chief to make the final comment".

- **The lack of systematic approach to feedback**

The results indicated that there is no systematic feedback to individuals and organizations and the corrective measure in the evaluation class of organizations; and multiple and parallel methods of evaluation lead to the erosion and waste of time for health system staff.

"Then what do they do after monitoring? He comes to the office (he has a monitoring office); the office staff, also, write and add something. Actually, we're creating a confusion for environmental levels. It is over-monitoring" (table 4).

Furthermore, based on the results, there was two barriers beyond the sub-elements of context in PARHIS framework, including; political, social and administrative factors and replacing relationships instead of regulations.

According to results, political, social, and administrative factors act as barriers in knowledge application implementation into the health care system. These factors influenced on recruiting and appointments of individuals despite the fact that managers sometimes use these components as facilitators by lobbying.

Replacing Relationships Instead of regulation was another barrier to knowledge application implementation in terms of participants' views in the organization.

"Many things may not be corrected at all. You see, for example, the staff of hospital has made a mistake and should be punished. You want to do anything, but you have a call from unrelated person to avoid the punishment".

Since the appointment of managers in the Iranian health system is important and challenging, it is affected by many hidden and effective factors as follows:

- **Inefficiency of manager appointment regulation**

Failure to enforce manager appointment regulation and its inadequacy are obstacles in the way of applying knowledge.

"When a person is going to be the head of university, we should recruit the one who is in this field" (table 5).

Data analysis led to emerging barriers on knowledge implementation in main category of Facilitation. Facilitation in the health system is more in the form of occasional communication with individuals and organizations that break some barriers. There are some barriers to this way:

- **Lack of systematic structure and process to facilitate the process of applying knowledge**

"Sometimes I find the right path due to my experience, but there is no specific process. The experience shows that you need to speak to that person who can talk to another person to solve your problem".

- **Unbelief in the need for facilitators**

The results indicate that facilitation is not familiar to managers and they consider it as lobbying and communicating with prominent individuals and senior officials of the organization and political representatives of society.

The health system affairs are performing based on the lobbying bargaining system, and thus when we had such a problem, we came up with the same solution like talking to the boss, and assistant to solve the problem".

The results indicated that there is facilitation in the health system according to the following description:

- **Holding training courses to overcome resistance, and better understanding of change**

Since the education is the golden key to human progress, the education can eliminate resistance that is due to personal and group interests.

"We taught the service recipients and doctors, so the problem, in which sudden changes were made in some places and made conflict, leading to the broken doors and windows, was less made for us".

- **Continuous and positive interaction with political and regional authorities outside the system and staff experts of the ministry**

Interaction with staff experts and authorities can act as facilitator in some Cases despite the fact that these interventions (political and regional authorities) were considered as barriers to knowledge implementation.

"Interacting with the expert team to give them what they exactly want. We also recruited the key individuals. For example, Dr. X, and those we knew they were influential. It made the programs run".

## Discussion

According to research finding, too busy managers and lack of time allocated to search for evidence hindered the knowledge implementation. As Majdzadeh et al. mentioned the lack of adequate time for the publication and transfer of knowledge (teaching and executive responsibilities), and scattered and not coherent research on relevant fields (19). In addition, there are obstacles including the ease or difficulty of receiving evidence at the desired time, place and format (21). Also Atkins pointed out dimensions of time-consuming process of knowledge implementation (22). Others researcher have also emphasized the need for their participation in committees as a barrier (23). Therefore, it seems necessary to provide results in an applied and summarized manner for managers, and teach skills of searching the evidence.

Results of our study indicated that managers' inadequate association with inadequate research and skills, including research, information technology, and search strategies impeded the knowledge application implementation that was more relevant to personal characteristics. The researchers have considered the powerful personal commitment and personal characteristics effective in improving the process of applying the knowledge sources (24) and believe that how the evidence is used depends on professional roles and competencies, experience, and interpersonal skills (25). The barriers of provider level included: disinterest among clinical practitioners, and lack of knowledge and skill of knowledge implementation and other barriers included the conduct of research based personal preferences (26). Therefore, it seems that designing a system of incentives for managers seems to be an appropriate solution to increasing the health system managers' motivation. As other researchers consider encouraging teams and individuals, who consistently use the best evidence, necessary to build a system and its structure (27).

Results of our study also indicated that the lack of a systematic system of recording the experiences of stakeholders and data available in the health system precluded the knowledge implementation. Other studies also consider the lack of a systemic coordination between academic and research organizations and institutions and policy makers as the main obstacle (14) that in addition to insufficient research capacity is another key barrier to understanding the use of research evidence in policy making and the lack of a database prevents researchers and users to transfer knowledge (28). However, most of obstacles are related to the organizational context (29). Therefore, it seems that reforming the guidelines and reducing the committees and establishing an experience record system can be together helpful in overcoming these barriers.

The results indicated that the failure to record stakeholders' experiences systematically prevented the use of implicit knowledge in organizations. Other researchers believe that cases such as results of decisions and customer experiences are new methods which are still undocumented and impede the use of implicit knowledge (30), hence, it needs to be documented through social participation and creation of a relevant system (27). It seems that implicit knowledge in the system should be systematically collected and shared with stakeholders, so that decision makers can easily access these rich knowledge resources. Therefore, it is necessary to set up a valid data collection system in organizations and obtain the stakeholders' experience.

Experience-based management, focus on the health system, inflexibility of its structure, and lack of manpower were some barriers to leadership in the present study. Other researchers also believed that there were barriers such as lack of resources, equipment, human resources, lack of consultants, and resource instability (29). The researchers considered the existence of organizational initiatives (mechanisms, processes, tools, strategies, and operating systems) relating to policy evidence to be effective (31). In this regard, the developing leadership capacity, resources (human, material, and financial) is important also its main strategies include the purposive education and attention to a systematic approach (32). Furthermore, the support of Ministry of Health and implementation of knowledge are effective in hospital policies or organizational guidelines (29). Therefore, it seems that a comprehensive system should be designed with an approach to encouragement of positive attitudes, stabilization of policy making, clarification of executive processes, experience with education, reduction of health system outsourcing, and revision of training curricula that increase the likelihood of evidence-based changes.

The resistance to change, an island look at health system sectors and the lack of motivation and belief among employees were barriers of the health system; and the result was consistent with other studies. The lack trust between staff, and power conflict between staff (30), and culture and values, lack of appropriate context such as study culture (19), individual characteristics, beliefs, insights, values, attitudes and motivation (33) were cultural barriers that emphasized more

on personal characteristics. Some researchers enumerated the organizational and infrastructural barriers such as attention to patients' values and cultures, family, and society (34). In this regard, the interaction between stakeholders and the hospital should dynamically help overcome the barriers and the participation of stakeholder groups plays an effective role in building a mutual trust (28). Therefore, it seems useful to delegate the authority of the Ministry of Health to universities to engage staff in benefits of motivational changes, but these strategies should be prioritized and used as far as possible.

Lack of using the evaluation results and a systematic feedback were some barriers to evaluation in the present study. Since the researchers consider the evaluation as the use of a variety of evaluation resources, methods, and processes in the context (35) and believe that they should adopt a realistic and practical approach to attract stakeholders' participation in the evaluation (36), and on the other hand, the evaluation of success in knowledge implementation is a global concern that needs immediate improvement (37), and the successful knowledge implementation should be obtained by eliminating the barriers to knowledge production and evaluating the extent of progress, and the IT and cyberspace should be used in evaluating performance (38), it seems that the senior managers should use results of evaluations in organizational affairs, multiple resources (service providers, resources, processes, and service recipients) to evaluate the system and staff participation in improving, designing, and implementing the evaluation system.

Results of our study also indicated that the greater facilitation was more in the form of personal relationships with influential individuals and was not systematic. Other studies confirmed it: There is no robust systematic network and structure to facilitate the knowledge implementation (28) and the lack of belief, a systematic look, and applicability of the knowledge implementation process in policymakers and managers hampers the process (32). According to results of the present study, facilitators of knowledge implementation were merely mediators in removing barriers. Therefore, it seems that systematic process and structure can facilitate the knowledge implementation process in the health system management.

## Conclusion

The present study explained hidden and obvious barriers and problems in the way of implementing the managerial knowledge in the health system and the strategies to resolve them. Therefore, identifying these barriers and recommended strategies to implement the knowledge, which are derived from the of health system management, can be considered by the different level of decision makers and policymakers to design a systematic efficient system, formulate appropriate strategies, and provide conditions for a combined use of knowledge from four sources. Furthermore, an appropriate mechanism can be established using the intra and extra-organizational potential to prepare the context for implementing the knowledge and providing the necessary facilities to make evidence-based decisions in the management of the health system.

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