

# Underlying factors and challenges of implementing an urban family physician program in Iran

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## Research Article

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# Abstract

**Background:** the family physician program was launched in 2005 in rural areas, and also as a pilot in 2012 in cities of Fars and Mazandaran provinces due to insufficient coverage of health system in these cities. However, despite its pivotal role in the health system programs, it has not progressed according to its initial policies. Therefore, the purpose of this study was to explain the underlying factors and challenges of implementing an urban family physician program in Iran.

**Methods:** This is a qualitative study, which was conducted on 44 policymakers and managers at national and provincial levels who entered the study with snowball and purposeful sampling with maximum variation. MAXQDA-2020 software was used to manage the data, which were analyzed by directed content analysis. For this purpose, a triangulation method was used.

**Results:** Data analysis resulted in the formation of 10 main categories, 18 sub-categories and 29 codes. Most challenges in the dimension of underlying factors included precipitancy, economic sanctions, believing in traditional medicine, believing in the expertise of previous physician, and global ranking of countries. Also, in the dimension of program implementation, most challenges included diversity of insurance organizations, budget allocation, referral system, electronic file, educational system and culture building.

**Conclusions:** the findings showed that the most important challenge in the dimension of underlying factors included international pressure for reforms and precipitancy in the implementation of programs due to changes in management. Also, these challenges in the dimension of program implementation included budget provision and interaction with insurance organizations. Therefore, for the expansion of program to other provinces in Iran, the factors identified in this study should be carefully considered so that, sufficient confidence, commitment and guarantee would be created for all stakeholders.

## Background

According to the recommendation of World Health Organization, an effective strategy to improve service delivery, reduce costs, and establish equity in health care delivery is to implement a family physician program(1). The family physician program and referral system in rural areas of Iran has been implemented since 2005(2). Also, despite many discussions about the success (3–7) and problems (8, 9) of rural family physician program in scientific texts, this program was also implemented in the cities of Fars and Mazandaran provinces as a pilot in 2012 in accordance with Articles 32 and 35 of the Fifth Developmental Plan (10, 11). However, despite the implementation of this program since 2012, it is limited to these two provinces and has not progressed (12).

Today, the planners need to make decisions about the expansion of family physician program to other provinces, by considering the comprehensive scientific evidence. Few studies have been conducted on the implementation of family physician program and studies conducted in Iran are mostly in the field of rural

family physicians. Due to the infancy of the program in the urban areas of Iran, few studies have been conducted on this topic.

Alidoosti et al (2009) referred to the role of literacy as one of the important underlying factors, and considered information sharing and education of low-literate people as important factors in the implementation of family physician program(13). Chaman et al (2010) study also showed that, there are serious problems in level 1 and 2 of the referral system, so that sending records from family physicians to health center has been taken place in only 12.5% of cases, and also 53% of patients in level 2 have been referred from private GP offices and clinics(14). Mehral-Hassani et al (2010) in a qualitative study identified seven underlying factors that affect family physician program, including inadequate motivational mechanisms, weakness in educational effectiveness, weakness in the comprehensiveness of instructions, weakness in the adequacy of per capita and its allocation, low efficiency of health information management system, defects in the referral chain, and insufficient culture building(15). A review study in 2012 showed that the system of referral and feedback of specialized physicians to level 1, patient follow-up and completion of health records are not done properly, and the desired health vision has not yet been institutionalized in people's minds(16). The study of Farzadfar et al (2017) showed that, in relation to the implementation of urban family physician program in Iran, there are 7 categories of problems, including financial, cultural, educational, motivational, structural, executive and contextual problems(17). Jahromi et al., conducted a study on patients' perceptions of family physicians and the results showed that 29% of family physicians were aware of patients' previous illnesses and problems and most patients were satisfied with the physicians' behavior. However, 40 to 50% of the patients stated that, the family physicians asked about their preferences and interests before prescribing medication, and also gave them sufficient explanations about the disease. Also, only small number of family physicians were ready to visit patients at home at the request of patients. In general, patients living in Mazandaran had better experience in all aspects of this program than those in Fars province(18).

There are many international studies in the field of family physician that have been an important contributor to the present study, but in these countries there is no distinction between urban and rural family physician program(19). In a review study conducted by Sans-Corrales et al., 356 articles were reviewed and it was found that patients' satisfaction and improvement of their health are related to access to and continuity of care, consultation time, physician-patient relationship, coordination, volume and duration of consultation, and implementation of preventive measures (20). This systematic review study reviewed articles related to family physicians, but none of the selected articles were related to developing countries. A study conducted by Manca et al, in Canada entitled: "Advantages and Disadvantages of Family Physician", refers to the role of contextual and executive factors in the implementation of this program. According to family physicians in Canada, the implementation of this program has advantages such as comprehensive and preventive care, continuous communication with patients and families, continuous treatment and feedback, flexibility, and up-to-date knowledge and information. It also has disadvantages such as high referral rate and work pressure, low income, disrespect from specialists, shortage of resources, paperwork and high volume of required forms, high patient's expectations, legal problems and physicians' insurance(21). This study was conducted in

Alberta, Canada and was limited to 28 family physicians who were providing services. A study by Wang et al., in China showed that government investment in primary health care is insufficient and unsustainable, so providing insurance repayment, financial incentives, transparency, accountability, and improving the referral system increase efficiency and effectiveness of the system and enhance justice in access to services(22).

Thus, this study was conducted to evaluate the implementation of urban family physicians with a new approach than previous studies. The present study aimed to examine the underlying factors and challenges of implementing family physician program in Iran. It is expected that the results of this study would provide a suitable strategies for planning and improving the referral system.

## **Method**

### ***Study design***

This qualitative study using the directed content analysis was conducted in Kerman, southeastern Iran, in 2021. Semi-structured in-depth interviews were performed between September 2015 and March 2017. Interviewees were 44 policymakers and managers at national and provincial levels who entered the study with snowball and purposeful sampling with maximum variation. Demographic characteristics of the participants are shown in Table 1. The interviews continued until no new information was emerged from the interviews. To ensure data saturation, two additional interviews were conducted.

### ***Data collection***

the interviewees were contacted in-person or via phone or email, and informed about the study topic, its objectives, and reasons for doing the present study. If they accepted the interview meeting, interviews were conducted at interviewee's office or any places agreed upon by the participants(23). Interviews were conducted by the VKJ with a research background family physician, using the interview guide. All interviews were audio-recorded and immediately transcribed in order to be used as a guide in the subsequent interviews. Interviews lasted 20-80 min with an average time of 50 min. The interviewer also took field notes to share with the research team to discuss the initial findings, complications, and any modifications needed in the interview guide. Interviews were continued until data saturation was reached. After data saturation when no additional data was emerged, two new interviews were also conducted. In total, 44 face-to-face semi-structured interviews were performed.

### ***Data analysis***

Directed content analysis was used to analyze the data. For this purpose, a triangulation method was used(24). All the data analysis and coding were undertaken manually. The directed content analysis approach was conducted using the following steps. At first, two of the authors (MHM and MI) familiarized with data by listening to recorded interviews and reading and re-reading transcribed data. Then they coded independently and generated an initial list of codes. In this stage, the initial results were

presented and disagreements were discussed until the consensus was reached in presence of third researcher (VKJ). Later, repeated patterns were identified and related to each code and after all the data were initially coded and collated, codes were analyzed aiming at combining different codes to an inclusive theme. In this step, categories and sub-categories were identified. Finally, the statements coded were reviewed, refined, and collated, and the results were finalized. The transcribed documents were analyzed using Maxqda version 2020 (VERBI Software, Berlin, Germany).

### ***Trustworthiness of results***

In order to ensure trustworthiness and quality of the findings, the criteria proposed by Lincon and Guba were used(25). To ensure the credibility of the findings, a maximum variation sampling method was used to obtain diversity in interview participants to reveal multiple perspectives about the challenges of implementing an urban family physician program in Iran. .Credibility was met with an involvement with data analysis which prolonged about seven months. Furthermore, for enhancing the credibility, continuous engagement was done with respondents by a process whereby the researchers provided the transcribed interviews to the participants and asked them to ensure that there is a good correspondence between their findings and the perspectives of participants. Furthermore, frequent sessions were held among three members of research team and it followed an iterative approach to reach a final analysis(26). Transferability of our qualitative findings was enhanced through purposive sampling technique with maximum variation and detailed descriptions for the used methods and procedures. Dependability of the research was assured by an inquiry audit in which the study's third researcher (VKJ) engaged in frequent sessions complementary comments in coding process and analyzing of interview text. To increase confirmability, we interviewed with key informants from different settings which allow us to examine consistency of different data sources from within the same method (named as triangulation of sources). In order to enhance the reflexivity, we have used field note taking to enrich the data. Moreover, we have tried to shrink the impact of our experiences on different stages of the study process.

## **Results**

The findings of present study are related to two dimensions of underlying factors and challenges of implementing an urban family physician program in Iran. The underlying factors were classified in 4 main categories, including situational, structural, cultural and external factors, as well as 9 sub-categories and 15 codes (Table 2). Also, the challenges of implementing the family physician program were classified in 6 main categories, 9 sub-categories and 14 codes (Table 3).

### **Dimension 1: Underlying factors**

#### **Main Category 1: Situational factors**

##### **Subcategory 1: Managerial factors**

Precipitancy in decision-making means that a decision is made before the necessary tools are provided and it is implemented before being practically possible. This was evident in the participants' statements.

"Unfortunately, in Iran, the family physician has fallen victim to the precipitancy of governments, so that at the end of the eighth government, the family physician program began in the villages without a proper infrastructure. Also, at the end of the tenth government, the expansion of family physician program all over the country was considered, and the result of these hasty actions is what we see in Fars and Mazandaran provinces."(M 4)

Change of government: The programs of health system in Iran are affected by the change of governments and ministers. With the departure of each government, a new minister takes the office and the new minister, regardless of previous efforts, launches a new plan. This issue has been more prominent in the family physician program, especially at its beginning.

"One of the problems is that in our country, governments are formed and ended every four years. In the first year everyone is a novice and begin to learn about issues. They began to work in the second and third years, and in the fourth year they leave the office. In such a system, it is not possible to implement a longitude and time-consuming program such as family physician."(M 3)

## **Subcategory 2: Economic conditions**

Sanction on medication: According to the respondents, the impact of political and economic sanctions on the health sector has been more prominent in the pharmaceutical sector and medical equipment.

"I think we have implemented this plan when we really have a drug crisis in the country. I have been the vice-chancellor for food and medicine at the university for about 10 years now, and I can safely say that, things have not been worse than this ten years. That means people had been faced with a new plan and when they were going to get a prescription, they were constantly hearing; "we do not have it". We are under sanctions. This has had a negative effect." (M 14)

Economic sanctions: Sanctions imposed on Iran's economy by the international community have directed the financial and economic resources of social programs to areas that have higher priority. Obviously, the lack of funding for the program has affected the implementation of program.

"Of course, the government also has financial problems ... The government now runs the country with taxes and most of the oil revenue is not available." (M 5)

"The issue of payments, medicine, salaries of executive staff and assistants, and also the physician per capita have a significant and direct relationship with the sanctions." (M 25)

Inflation: Iran had the highest inflation rate in the early years of urban family physician program implementation.

"If the family physician program is implemented properly, it will be economically beneficial for people, because now they pay 10% of the visit fee, but they used to pay 30%. The medicine is also free, but if there is inflation, it affects everything, not just the health." (M 23)

## **Main Category 2: Structural factors**

### **Subcategory 1: Political factors**

Politicization means the removal and selection of ministers and officials by political-factional motives, and ignoring the principle of selecting people with right expertise and appropriate characteristics in all areas, even non-political areas such as social service and economy.

"In the social service sector, officials should not have a political view, so that when the government changes, they should not change everyone due to political views." (M 5)

Change of policymakers: In addition to change of government, as one of the transient factors (situational factors) that has played an important role in the family physician program, changing policymakers and ministers, and the unsustainability of health system (as a structural factor) has caused plans and programs to be implemented in a short time.

"Unfortunately, after the revolution, none of the health ministers has been in the office for two consecutive terms, and this in itself is one of the most important factors that cause the minister to look for programs with quick returns, and these quick returns make everyone to miss the details.... Experience has shown that when you work on a structure when reforming a sector, the results will be more sustainable."(M 7)

### **Subcategory 2: Economic factors**

Employment and migration of graduates: The existence of a large population of young and educated people on the one hand is considered as economic capital and on the other hand, it is considered as a serious and potential threat in Iran. Low recruitment among medical graduates is also one of the problems that officials are faced with, which affects the process of planning and implementing employment programs.

"If family physician program is implemented, medical graduates will not be unemployed."(S 2)

"In principle, the identity of general practitioner has been questioned. So, the general practitioners either migrate or chose another job, and that is the fate of general practitioners. Unfortunately, many general practitioners are unemployed." (M 12)

### **Subcategory 3: Social factors**

Material motives: Contrary to the approach of older physicians in providing services to the people, the formation of some kind of material motives among physicians has damaged the health system

programs. The interviewees believed that, this has led to discrimination and affected the urban family physician program.

"It has become difficult to meet the expectations of physicians, whether general practitioners or specialist physicians, who must be satisfied. Nowadays, it takes much more to fill the mouths of physicians." (M 5)

#### **Subcategory 4: Structural disorganization**

Lack of a plan: The health system does not have a well thought written plan for health, treatment and education of health system.

"How did the health reform program or family physician program come about? Did the high ranking officials decide it or not? It was not a matter of sitting down and writing a program and determining the status quo, saying that this is the situation and this should be the standard status, or covering the gaps in these programs."(M 7)

"The lack of a master plan (for example, a 20-25 years or a long term program) has led our education system not to be able to adapt to the concept of family physician. So in this situation, physicians become graduated while they are not prepared for such programs." (M 4)

#### **Main category 3: Cultural factors**

##### **Subcategory 1: Religion**

Gender differences: According to the interviewees, having religion did not have much effect on referrals to family physicians and the role of religion was more seen in the gender differences within family physicians. Some female patients, despite having a male physician, prefer to see a female physician.

"Many of our physicians are men. Some people, whether women or their spouses, do not want the family physician to be in the midst of their family problems, so we had a series of challenges in this regard. However, some solutions were also proposed. For instance, the assistant of a male physician must be a woman (a female nurse or midwife). In this regard, another challenge is that many people do not believe in midwives or nurses, and the interesting thing is that, they still do not allow a male physician to visit them." (M 35)

##### **Subcategory 2: Beliefs**

Believing in traditional medicine:

Some people believe in traditional medicine, and do not visit family physicians. This issue created many problems for the program.

"We have people in our target population who go to see our colleagues who are traditional medicine specialists. Well, they have to pay all the costs out of their pocket." (M 40)

### Believing in the expertise of previous physician:

Before the implementation of urban family physician program, people were free to see a physician and usually referred to a specific physician. Changing physicians has created some problems by limiting the population covered.

"Unfortunately, the biggest factor that has caused dissatisfaction among clients is that some of the physicians may have an effective treatment method or higher experiences, and almost all clients only believe in these few physicians." (M 38)

People's belief in the status of family physician: Another cultural issue has been the status of family physician (compared to specialist physicians) among people. Since the current culture of Iranian people is to consult a specialist for most diseases, it is difficult for them to accept that fact that, they should consult a general practitioner (in the form of a family physician) for most diseases.

"When a physician does not have power and authority within society, people do not accept him and therefore, may not trust him." (M 5)

## **Main category 4: External factors**

### **Subcategory 1: World ranking of countries**

The world ranking of countries: External factors can have an impact on health programs and systems even from outside the organization or country. One of the external factors that the interviewees emphasized on, was Iran's ranking among the countries in the region and the world in terms of health indicators.

"Iran ranks low among the countries in the region and has a long way from the goals set in the existing policies of the country, which indicate that Iran should be ranked first in the region in terms of health indicators. The implementation of family physician program has been one of the most important efforts of policymakers to fill the gap and reform the health system." (S 10)

## **Dimension 2: Establishment and implementation of urban family physician program**

In regard to establishing and implementing the family physician program, 6 main categories, 9 sub-categories and 14 codes were extracted from the participants' statements as seen in Table 3.

### **Main Category 1: Financial resources**

#### **Subcategory 1: Insurance**

Diversity of insurance organizations: Diversity of insurance in the country and the existence of insurance organizations with different policies, including health care and social security insurances, along with

various insurances such as oil industry, banks and other companies caused many problems in the implementation of family physician program at the beginning.

"Family physician program has been implemented mainly in countries that either followed the NHS system or had integrated insurance funds. In countries that have different funds with different policies, implementing a family physician program is very worrying." (M 5)

Interaction between the health system and insurance organizations: One of the issues in the implementation of urban family physician program is related to how the health system interacts with insurance organizations. According to the opinions of participating experts and the provincial documents obtained from the coordination meetings of the officials in these areas, contrary to the beginning of the program, in the following months of the program, coordination had been made between the family physicians and insurance companies at least at the provincial and lower levels, so that the physicians were accepting the insurance cover of these companies.

"In my opinion, this coordination was great both at the provincial level and at the national level. But the problem was that, enough credit was not being given to the program." (M 23)

Payment and service purchase system: Payment to the providers of urban family physician program has been defined for the family physician and his/her team as "per capita", and for levels 2 and 3 as single payment.

"The family physician's fee is paid as per capita. The basic per capita payment for the physician and his/her team increases per person according to special cases. However, the specialist or subspecialist physician's fee for inpatient services is paid as per hour." (S 1)

"If a family physician, for any reason, refers one of his / her client to a specialist, he / she will receive 90% of the private visit fee and 100% of public visit fee from the insurance companies if the patient goes to private sector, and if he goes to public sector, the he/she will receive the fee for 3 public visits from the insurance companies."(S 1)

## **Subcategory 2: Budget**

Budget provision: According to the senior managers of the Ministry of Health, the financing of this program has had many ups and downs, which has affected the program's objectives. According to the reviewed documents, the budget required for the urban family physician program has been foreseen and approved in the budget law, but has not been provided for years due to various reasons (including change of ministers and government).

"Providing resources is another issue in this area. For example, 2011 was the first year that the family physician program wanted to start, but there was no budget." (M 5)

Budget allocation: Allocation and use of provided budgets guarantees the implementation of urban family physician program in the two provinces, which requires the efforts of officials of the family physician program; an action that has not been taken place in years and has had its impact.

"The 11th government that came to power did not have a plan to provide and allocate budget for the program, and this was practically postponed until the end of year." (M 6)

## **Main Category 2: Structures and communications**

### **Subcategory 1: Communication between levels and organizations**

- Referral system: In the urban family physician program, an effective referral system ensures close communication between all three levels of the health system, including family physician, specialist physician and highly specialist physician. It also helps people to receive the best possible care in the nearest location.

"Providing level 2 and level 3 infrastructures is very important. If by level 2 of family physician program we mean a specialist who is sitting in his office, then we must admit that the infrastructure is not ready yet." (M 24)

Another issue is the effective communication between the various levels of referral system.

"We are only referring to the second and third levels, but unfortunately, we do not have a valuable feedback. I do not remember the exact number, but during the time I have been referring clients, maybe I have just referred 5 or 6 clients that gave me a valuable feedback, which had an educational advantage for me."(M 37)

The coordination between family physician at the first level and the specialist physician at the second level, according to the family physicians, was limited to a referral sheet, and there was no any other communication.

"Specialist physicians have virtually no communication with the family physicians, so much so that they only know that the referral sheet consists of two pages, with one side written by the family physician and the other by them writing back to the family physician." (M 38)

Inter and intra-sectoral communication: Inter and intra-organizational coordination at different levels is of particular importance. At the city and provincial level, the coordination between various deputies in medical universities, as well as the coordination between the family physician team and other departments for the proper implementation of referral system is one of the factors that play an important role in advancing the work.

"The university dean was definitely in the meetings that they were holding, and if he wasn't, he would have asked some else to represent him. But the reason for the lack of coordination was that, the

therapists thought that it is the responsibility of health system, which was not the case. However, some coordination between us was good. "(M 22)

### **Main Category 3: Information technology**

The advanced health systems in the world are equipped with powerful and advanced information systems. Information technology is useful for the family physician and also it is a necessity for access to an advanced health system.

#### **Subcategory 1: Software**

Electronic file: Urban family physicians need information recording software, which not only provides the physician with the client's information centrally, but also provides the program managers with more comprehensive information such as medication and equipment, the type of services provided to client and his communication with different levels.

"A big problem of family physician program was the software, as the Iranians' health software was also the software of the program. We entered the patent's previous information, medical history and national code and we were online. The big drawback was that, the program software was being upgraded, which meant that we didn't have the upgraded software, while starting the program. We were saying, let's start the program. However, when we started the program, four months later, we found out that we need this and that in the system, which was not even ready for six months. After six months when the system was finally ready, we saw that the system is wrong here or does not work there." (M 23)

Lack of strong information technology infrastructure was another serious obstacle to the urban family physician, which needed to be resolved at the highest levels of the health system.

"Certainly, completing and strengthening the IT infrastructure in the country is very important for electronic files, copying and electronic referrals, etc., and with the improvement of this system, the work will become much easier." (M 12)

#### **Subcategory 2: Electronic networks**

Internet: The existence of software and electronic records requires access to the internet in both public clinics and private offices. Participants believed that:

"At the city level, we had no problem in terms of hardware infrastructure in public sector, as we had prepared all these facilities before the official implementation of program. But in the private sector, this infrastructure was not ready, and even to this day, some physicians have not done their work in their office."(M 22)

### **Main Category 4: Human resources**

The required human resources in the urban family physician program include the family physician specialist and his/her team.

### **Subcategory 1: Education and empowerment**

A family physician is a specialty, which generally has a preventive and health-centered approach rather than treatment approach.

Education system: From the beginning, the medical education system in Iran has trained general practitioners with an emphasis on the centralized treatment approach, and therefore, it cannot easily cope with the family physician's health-centered approach and achieve its goals.

"One of the problems we have is that, our physicians are not family physicians, they are therapists. We trained them this way and this is not their fault. So, both the science we taught them and their role model were different. We all earn money from treatment, not health and prevention. These physicians have had no proper education on health and prevention, have not had proper observation of models, and even have no income from health and prevention, so they just sit in their office and write prescription." (M 1)

### Motivation

"This is one of the problems we have. From time to time, if meetings are held for family physicians to express their problems and offer solutions, it will be much better, but unfortunately, this does not happen at all." (M 40)

### Subcategory 2: Weakness in expertise

Experience of ministers: The policymakers of family physician program have not had enough experience and expertise to manage the health care system and consequently, the urban family physician program. Since it takes at least a few months for a minister to take the office, it takes him or her a while to figure out what the program means and what the plans are. So, the lack of experience of people who are appointed as ministers in this area may have negative effect on the implementation of program.

"Among the five ministers of health that we had during the implementation of family physician program, except for Dr. Pezeshkian, who was the deputy minister, none of them had any experience in the country's senior management." (M 5)

### **Main Category 5: Information sharing and culture building**

Part of the implementation of family physician program is related to information sharing and culture building. In this regard, topics such as building culture for the program among people and service providers are important.

### **Subcategory 1: Education and people preparation**

Culture building: In order to implement the urban family physician program, cultural work had to be done actively to form the public mentality towards the program, and one of the reasons for the increase in dissatisfaction and complaints about the urban family physician program has been related to this issue.

"If this program had been well explained to people, we would have created a good culture. Maybe if we would have spent a few years explaining this program to people, we were not having the problems that we are dealing with now." (34)

Information sharing: Insufficient sharing of information before the implementation of program has caused many problems for the program providers, including the large number of people visiting the family physicians at the beginning of the program, disruption of patient referral process and client dissatisfaction.

"The media, except for television, especially the provincial television, did not advertise the program. Newspapers were less involved in the program. Television had a weekly interview and gave the report or provided guidance." (M 23)

## **Main category 6: Facilities and equipment**

### **Subcategory 1: Physical space and facilities**

The physical space, facilities and equipment necessary for the implementation of family physician program were among the infrastructures that, according to the program implementers, had been provided, especially in the public sector and before the implementation of program.

"We had no problem with the hardware ..... There was no problem with the location and physical space." (M 23)

"We had no problem at the city level in terms of hardware infrastructure in the government sector ... We easily prepared these kind of facilities even before the official implementation of program." (M 22)

## **Discussion**

The family physician policy to establish a referral system has been the second major pivotal reform in the health system. According to the findings, despite the positive steps taken to strengthen the service leveling system in the country, this program still faces challenges that can be classified in two main categories, including underlying / contextual factors, and challenges of establishment and implementation of program.

### **Underlying factors of family physician program**

As Greendale and Thomas stated in their study, underlying factors play a limiting or facilitating role in the development, implementation and expansion of urban family physician program(27). The precipitancy in the family physician program has acted as a powerful force for national actors to put the program on the

agenda. The role of contextual factors in putting the program on the agenda has been reported in the study of Koduah et al (28). This precipitancy has caused the urban family physician program to be implemented without provision of infrastructure such as educating and preparing people and service providers. Educating and preparing people to implement any program have been emphasized by the World Health Organization(29). Similarly, the precipitancy in policy-making and planning at the beginning of the urban family physician program has been reported by researchers in Iran(30). Perhaps one of the reasons for the precipitancy has been the government's inability to run a long-term program that extends through the next governments, which happened a year after the start of program (June 2013). The change of government has also been one of the underlying factors affecting the program.

Some researchers have pointed to the factor of government change as an underlying factor in the ups and downs of health policies (31, 32). The change of three ministers in the first four years after the start of urban family physician program created a great deal of conflict of interest between the actors in the program, who had different political views. This issue has been mentioned in a study of Khayat-zadeh and Takian(12, 33).

The economic condition created in the early years of program implementation was another situational factor that influenced the program. The results of present study showed that due to sanctions, the priority of family physician program in the health system has been undermined, but like other studies conducted in Iran that have addressed the impact of sanctions on the country's pharmaceutical market (34), this study showed that the impact of sanctions on the urban family physician program has been prominent in areas such as medication and inflation, however these effects have not been restrictive in other areas.

Findings of this study in relation to structural factors suggest that developmental plans and programs written by one government and submitted to parliament for approval may not be accepted or, even with approval, the implementation of them depends on the political view of the next government. This problem has been reported in a study in Iran(35). This issue has caused the health system to lack any comprehensive plan. This is while the family physician program is a comprehensive and long-term plan that requires the educational, managerial and technical infrastructure to achieve its ultimate goal.

The effect of cultural factors on health policies and the prominent role of these factors have been reported by many researchers (36, 37). As identified in cultural access, in this study, cultural factors such as gender differences and believing in traditional medicine were among these factors, which had little effect on the program. Lack of family physician communication skills and physicians' lack of knowledge about patients' illnesses and past medical history have played a significant role in patients' beliefs about family physicians. The components of physician-patient communication have been identified in a review study by researchers, including the establishment of interpersonal communication and information transfer approaches (38). In another study by Krish et al., the existence of a gap in the communication between physician and patient was also reported as one of the reasons for patient dissatisfaction (39).

Iran's average position in the world ranking has put pressure on health officials and policymakers to solve the problems, and this effect on the family physician program in Iran has also been reported in other

studies (40).

### **Establishment and implementation of urban family physician program**

The results of present study in relation to the establishment and implementation of program showed that the implementation of this program at that time was without complete provision of information sharing, cultural infrastructure and communications, as the common perception was that solving some of these problems depends on the implementation of program (41). The problems that persist in the referral system of Iran health system have also been reported by many researchers (39, 42, 43).

The results also showed that before the implementation of program, sufficient coordination had been made between different levels of referral system, but the communication between these levels was not well established during the implementation of program. The use of low-level capabilities of health system to achieve its goals, such as improving the quality of services, has been reported in previous studies (44).

The results of this study showed that at the beginning of launching and expanding the program, the software infrastructure of the program for creating electronic health records for people was not ready and this problem existed until the first three years of this study. This problem was noted in previous studies that evaluated the urban family physician program (45). It seems that one of the national measures taken in the health system at the end of 2016, which has played a significant role in resolving this shortcoming, has been an integrated health system for Iranians.

This study showed that the establishment and implementation of program has been affected by the education and training of treatment-oriented general practitioners in the country's education system, who found it difficult to understand the concept of family physician principles (health-centered). Lack of material motives for physicians was another result of this study. The lack of family physicians' involvement in decisions related to the program is caused by this lack of motives (3).

The results of this study in relation to information sharing and culture building showed that due to the previous behaviors of people in the health system, which are derived from the previous system, they tended to refer directly to a specialist for any disease, and this behavior has created wrong habits in them. Factors such as the lack of trust in the family physician, excessive referral to the family physician, and dissatisfaction with the referral system have been the consequences of this culture for people. It can be said that perhaps part of dissatisfaction with the urban family physician program reported in previous studies (46) and in this study are due to this issue. Of course, awareness-raising and training programs have also been important for program providers. The cultural and social component in the study of Siddiqui et al., was the main reason for physicians' withdrawal from the rural family physician program in Iran(47).

This study showed that the required physical space, facilities and equipment were ready for the establishment and implementation of program. The readiness of PHC infrastructure in public sector and

the significant participation of private sector in cities seem to have been the main reasons for this success.

## Conclusion

Various underlying factors affected the pilot program of the urban family physician and caused the program to have many ups and downs. Finally, despite the impact of underlying factors, the program has continued to this day and is currently limited to two provinces of Fars and Mazandaran, and a plan to expand it to other provinces is not on the agenda. The results of this study showed that there are many underlying factors and challenges that have affected the implementation of urban family physician program in Iran. In regard to underlying factors, the globalization and international pressure for reform to improve Iran's position in the world rankings, precipitancy, change of policymakers and programs, and economic conditions caused by sanctions were influential factors in the implementation and continuation of urban family physician program. Also, in regard to establishing and implementing the program, budget provision, interaction with insurance organizations, referral system, communication between different levels, and electronic health record were among the effective factors. It is suggested that in order to expand the program to other provinces, policymakers and planners should focus more on the above factors and reformulate the program.

## List Of Abbreviations

MHM= Mohammad Hossein Mehrolohasani

VKJ= Vahid Kohpeima Jahromi

RD= Reza Dehnavieh

MI= Mahla Iranmanesh

## Declarations

### Ethics approval and consent to participate

All participants voluntarily participated in this study. A study information sheet containing sufficient details about the present study was given to all participants before setting the interview schedule. They were assured that the anonymity and confidentiality of any information would be maintained. In this study, an informed consent form was sent to the interviewer. After receiving informed consent, the interviewees were contacted to coordinate the appointment time. In order to record audio digitally, informed consent was obtained from all participants before conducting the interviews. The present study was approved by the Ethics Committee of Kerman University of Medical Sciences (No. 940656). All methods were carried out in accordance with relevant guidelines and regulations by Ethics Committee. No

personal information was reported here and no personal information would be presented in any publications arising from the present study.

### **Consent for publication**

Not applicable

### **Availability of data and materials**

The transcribed interviews and open coding are available from the corresponding author on a reasonable request. It should be noted that all interviews were conducted, transcribed, and are accessible in the Persian language.

### **Competing interests**

The authors declare that they have no competing interests

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### **Authors' contributions**

VKJ conducted the interviews with participants, analyzed the data, and prepared the manuscript. MI and MHM provided mentoring for the implementation of the study and assisted in the preparation of the manuscript. MI and RD designed the study, supervised its implementation, assisted in data analysis and preparation of the manuscript. All authors read and approved the final version of the article.

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## Tables

**Table1:** Demographic characteristics of the participants

Level	Interviewees	Number of interviews
National	Minister of Health	3
	deputy Minister	5
	Member of Parliament	3
Provincial	University President	2
	Vice Chancellor	8
	University expert	5
	Heads of non-academic organizations	6
	Family doctor and team	10
	specialist	2
total	44	

**Table 2: Underlying and contextual factors of urban family physician program in Iran**

Dimension	Main category	Subcategory	Code
Underlying factors	Situational factors	Managerial factors	Precipitancy
			Change of government
		Economic conditions	Sanction on medication
			Economic sanction
	Structural factors	Political factors	Inflation
			Politicization
		Economic factors	Change of policymakers
			Employment and immigration of graduates
			Material motives
	Structural disorganization	Lack of plan	
	Cultural factors	Religion	Gender differences
		Beliefs	Believing in traditional medicine
			Believing in the expertise of previous physician
People's belief in the status of family physician			
External factors	World Health Organization program	World ranking of countries	

**Table 3: Factors that affect the establishment and implementation of urban family physician program in Iran**

<b>Dimension</b>	<b>Main category</b>	<b>Subcategory</b>	<b>Code</b>
Establishment and implementation of urban family physician program	Financial resources	Insurance	Diversity of insurance organizations
			Interaction between health system and insurance organizations
			Payment and service purchase system
		Budget	Budget provision
			Budget allocation
	Structures and communication	Communication between levels and organizations	Reference system
			Intra-sectoral and inter-sectoral communication
	Information technology	Software	Electronic file
		Electronic networks	Internet
	Human resources	Education and empowerment	The education system
			Motivation
	Information sharing and culture building	Education and people preparation	The experience of ministers
			Culture building
	Facilities and equipment	Physical space and facilities	Information sharing