Iran J Public Health, Vol. 54, No.9, Sep 2025, pp.1831-1841

Review Article

Challenges of the Referral System in Family Medicine Program in Iran: A Scoping Review

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(Received 08 Apr 2025; accepted 12 Jul 2025)

Abstract

Background: Since its inception in 2005, Iran's Family Medicine Program has faced persistent challenges in implementing an effective referral system, limiting its potential to optimize healthcare delivery and reduce hospital overcrowding. This scoping review synthesized evidence from 31 studies (2005–2022) to identify and categorize systemic challenges within Iran's referral system.

Methods: In 2023, a systematic search of English and Persian databases (e.g., PubMed, SID, Magiran) identified studies on referral system challenges. Data were thematically analyzed and mapped to six WHO domains: governance, financing, human resources, equipment, information systems, and service delivery.

Results: Key challenges include: Governance: Fragmented policies, weak oversight and lack of enforceable referral protocols. Financing: Delayed payments to physicians and restrictive insurance tariffs disincentivize compliance. Service Delivery: Public distrust in family physicians, low reverse referral rates, and poor specialist feedback. Technology: Reliance on paper-based referrals and fragmented electronic records. Human Resources: Rural specialist shortages (0.5 per 10,000 in Iran vs. 4.2 in urban areas) drive bypassing of primary care.

Conclusion: Iran's referral system struggles reflect systemic deficiencies in governance, financing, and infrastructure. Successful reforms require multi-level interventions: digitizing referrals, incentivizing compliance through blended payment models, and rebuilding public trust via awareness campaigns. Lessons from countries like South Korea (differential copayments) and the UK (Shared Care models) highlight pathways for integration. Without urgent action, the Family Medicine Program risks perpetuating inefficiencies and inequities in Iran's healthcare system.

Keywords: Referral system; Family medicine; Healthcare challenges; Health system reform; Iran

Introduction

Today, in many countries, including North America, Western Europe, and Canada, family physicians are responsible for providing healthcare services. The national healthcare system is based on a referral system and family physicians in countries such as the UK, Canada, South Korea, and Chile (1). Referral systems are relatively straightforward in design but challenging to implement (2). Family physicians commit to providing a defined range of healthcare services as a minimum for all individuals under their coverage and refer individuals beyond this technical scope to other levels for specialist care (3).

DOI: https://doi.org/10.18502/ijph.v54i9.19852

Although Iran has made significant progress since 1985 with implementing the Health Network Plan and service categorization into three levels in all counties, the lack of a proper referral system remains a prominent weakness. Since 2005, with the implementation of the family physician plan in rural areas and cities with populations of less than 20,000, reforming and strengthening the referral system has been emphasized as the basis for organizing the necessary services for the population (4).

Despite various studies emphasizing the importance and necessity of a suitable referral system in different healthcare systems and the significant efforts and costs invested in this area, the referral system still lacks the required efficiency. The World Health Organization's expert committee identifies problems in the referral system, such as excessive workload on healthcare staff, long distances, lack of trust in primary healthcare services, inadequate information flow between referral sources and hospitals, and lack of access for those in need, lack of communication between hospitals and community healthcare services, absence of a well-designed and efficient referral system, inadequate management support and commitment to implementing this system, insufficient training, lack of referral criteria guidelines at different levels of healthcare service provision, and lack of support services for healthcare service units provided by hospitals (5).

Some evidence suggests that the main weaknesses of the family medicine program in Iran include deficiencies in the referral system (2). Various studies have highlighted different strengths and weaknesses of the referral system in the family medicine program in cities across the country.

We aimed to identify and categorize challenges in the referral system in Iran.

Methods

In 2023, English and Farsi databases (e.g., PubMed, Scopus, Science Direct, SID, Magiran, ISC) and Google Scholar search engine were searched using keywords such as family medicine, family practice, family doctor, family physician, general practitioner, referral system, Gatekeeper, and related MeSH terms individually or in combination. The study included all articles that provided information about the implementation of the family medicine program in Iran from 2005 to 2022. Additionally, it examined the challenges of the referral system in this program. Studies about other aspects of the family medicine program, such as structure, equipment, and similar topics, as well as documents in languages other than Farsi and English, were excluded. The screening process involved evaluating titles and abstracts, followed by full-text screening and data extraction.

The available literature is outlined in a data flow diagram, which details how to summarize and report the results (Fig. 1). Throughout the process, two of the authors regularly held meetings to discuss the findings and come to an agreement on how to manage them.

Each study was evaluated for quality using a modified version of the Critical Appraisal Skills Programme (CASP) checklist, ensuring consistency and rigour in the analysis

The challenges mentioned in the studies were extracted and were classified using the content analysis method. Due to the similarities between the extracted themes and components of the health system from the perspective of the WHO (Governance and leadership, financing, equipment, information system, human resources, and service provision)(6)The challenges (21 challenges) were classified accordingly.

Results

As illustrated in Fig. 1, 8361 studies were identified, 8315 studies were screened, and 31 studies that met the inclusion criteria were included in our analysis.

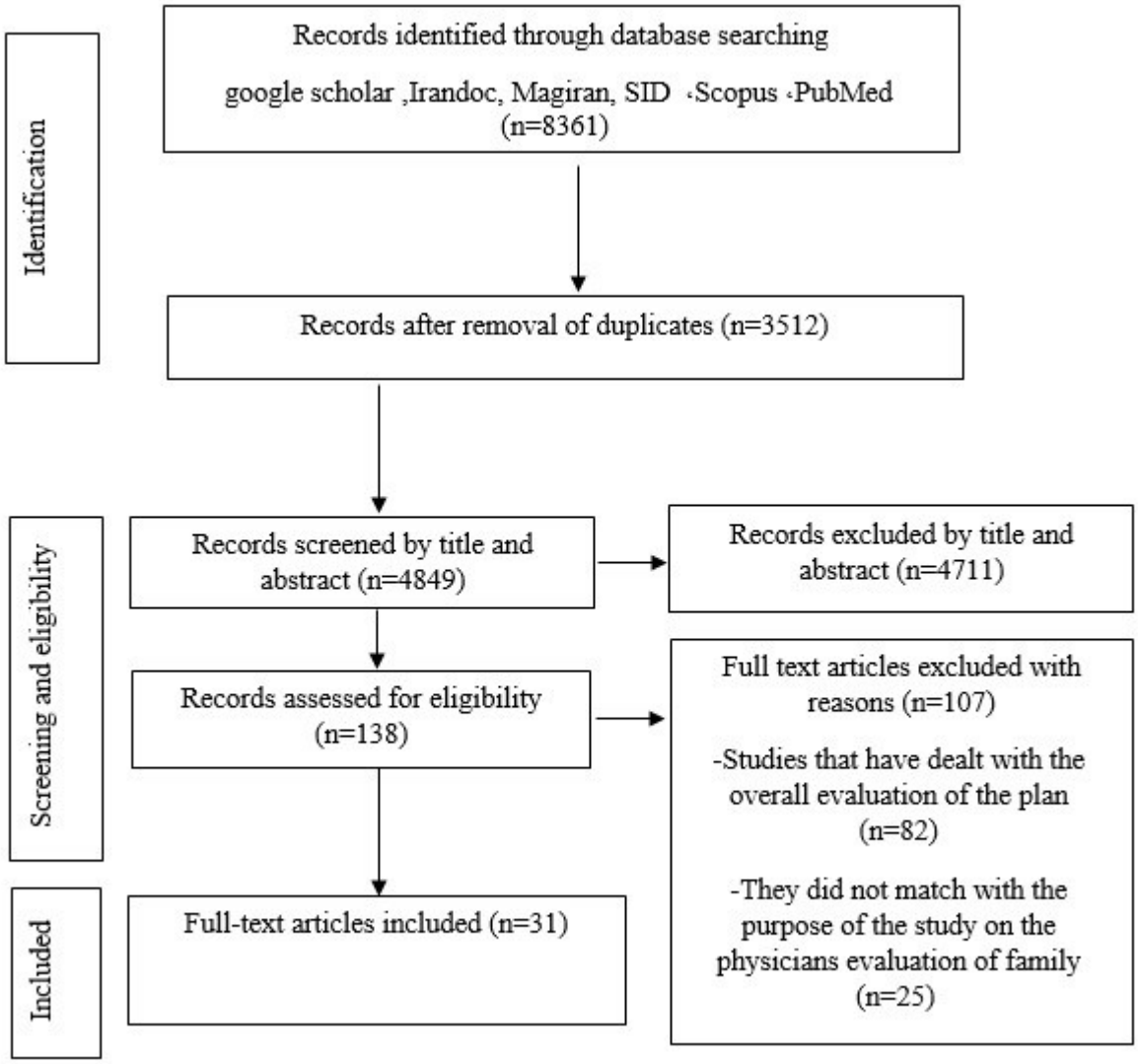

Fig. 1: Flow diagram for the study selection process

In this study, referral system challenges were classified into six components, including financing, equipment, information systems, human resources, and service delivery (6). Due to the high volume of challenges, the service delivery section was subdivided into three subcategories. These subcategories include challenges of referred patients, referring physicians, and receiving specialists (Table 1).

Table 1: Challenges in implementing the referral system in the family medicine program

Main theme	Subthemes	Challenges	The number of articles that have mentioned this challenge
Governance and leadership		Lack of appropriate laws	5
		Weakness of monitoring	3
Financing		Insurance	1
		Weakness of payment	5
Information system		Electronic Health Record	2
Human resources		Manpower shortage	4
Technology, medicine, and equipment		Insufficient equipment	1
Service provision	referred (patients)	Public unawareness of the referral system	5
		People's neglect of the referral system	7
		Reverse referral	2
		lack of trust in the family physician	6
		Problems faced by rural residents in the city before their visit	1
		Patients' financial inability to refer to higher levels	1
	Referrer (family physicians)	Percentage of referrals made out of all patients visited	1
		Completing Referral Forms	4
		Follow-up on Referrals	2
		Number of visitors	3
	Referral recipient (specialists)	Feedback rate	12
		Feedback Quality	3
		Referral Back to the Primary Level	2
		Timely patient acceptance and provision of necessary services	6

Governance and leadership

- Lack of appropriate laws: Studies have highlighted the challenges within the referral system, such as the selection of doctors as health managers without considering their management skills and duties (7). The need for a legal framework within the referral system has been emphasized (8). Additionally, the absence of restrictive laws in referrals to specialists has been identified as a challenge (9). Improvement in policies, strategies, and appropriate planning is suggested as a solution (10). The comprehensive nature of laws, guidelines, and their proper implementation has been recognized as a challenge in family medicine practices (11).
- Weakness of monitoring: Inadequate supervision by responsible organizations (12), lack of follow-up actions, and insufficient expertise among supervisors and monitors have been noted as issues within the referral system (7). Limited effectiveness and inefficiency of oversight bodies have also been highlighted (4).

Financing

- Insurance: Non-cooperation of insurance companies regarding tariffs has been identified as a challenge within the referral system (7).
- Payment issues: Inappropriate and late salary payments have been acknowledged as challenges in family medicine practices (4, 7, 8, 10, 11, 13).

Health Information System

- Electronic Health Record: Some studies have pointed out that the electronic health record is a weakness in the referral system (7, 13).

Human Resources

- Manpower shortage: Some researchers identify the insufficient availability of specialist doctors and family physicians as one of the challenges in implementing the referral system (4, 5, 11). In a study, most patients expressed satisfaction with the operating hours of family physician centers (80%). However, meeting with family doctors during holidays and non-working hours was rarely feasible (14).

Technology, Medicine, and Equipment

- Insufficient Equipment: On average, 30 out of 45 medical equipment items were available to family doctors in the provinces of Fars and Mazandaran (14). Some individuals and interviewees in a study considered inadequate facilities, services, and poor primary care as reasons for bypassing primary care services (7).

Service Provision

A) Referred patient

- Public unawareness of the referral system: Several articles have addressed the lack of awareness and low public understanding about the referral system (4, 7, 12, 15-17). According to the research by Shams and colleagues conducted in Isfahan, there is no significant difference between urban and rural populations in terms of awareness of the referral system, but city residents have slightly more awareness in this regard (18).
- People's neglect of the referral system: Negligence of the referral system was evaluated by Nasrollahpour and colleagues in the Family Physician Program in 5 counties of Tehran. The study, conducted through questionnaires with patients referred to level 2, showed that only 35% of patients had a referral form from health centers (19). About 33% and 26% of patients had referral forms from health centers (2, 20). Moreover, other research has indicated that the public is not complying with the referral system (4, 11, 17, 21).
- Reverse referral: If a patient initially seeks higher-level services and is accepted for that purpose, but only goes to a family physician to take advantage of the financial benefits of the referral system and requests a referral to a higher-level service provider, it creates a problem for family physicians and makes it difficult to deal with it logically. Because surrendering to the patient's request essentially undermines the referral system and resistance to it may evoke the concept of confrontation in patients' minds. Therefore, some physicians did not consider resisting the patient's request as undesirable and did it as a help and collaboration with the patient (7, 8, 12).
- Lack of trust in the family physician: The lack of trust in family physicians by the public was highlighted in a qualitative study in Mazandaran Province, indicating that patients do not trust their family physician's capability. Many family physicians have felt the issue of people turning away from them (7, 10-12, 14, 16).
- Problems faced by rural residents in the city until the time of visit were mentioned in the referral system-related challenges in a study in Mazandaran Province (4).
- Financial inability of patients to seek higher levels of care (4).

B) Referrer (Family Physicians)

Percentage of referrals made out of all patients visited: According to the national guideline for the Family Physician Program, a standard referral rate of up to 10% was considered (22). The referral rate was within the 10% range, complying with the guidelines of the Family Physician and Rural Insurance (15, 23, 24).

- Completing Referral Forms: A study by Janati et al. examined the quality of referral letters written by general practitioners to specialists in gynecology and cardiology. The referrals to Gynecologists had better quality compared to those referred to cardiologists, and the readability of the introduction letters was 73% (25).

In the study by Faramarzi et al., two Otolaryngologists evaluated referral letters written by family physicians. The results indicated that 74% of the ENT specialist referral letters contained insufficient information in various aspects. Symptoms, diagnosis, and signs were reported in only 28.3%, 28.9%, and 6.3% of the letters, respectively (26). A significant percentage of referral forms are completed in a non-standard and incomprehensible manner by family physicians, often being completed by individuals other than physicians (27).

In the study by Golalizadeh et al., challenges related to family physicians in patient referrals were highlighted, including incomplete completion of the referral form, incomplete completion of the insurance booklet by family physicians, and failure to specify the actions taken at the referral level (4).

- Follow-up on Referrals: Some studies have shown that family physicians do not effectively follow up on referrals.(20, 28)
- Number of visitors: A challenge highlighted in certain studies is the high population-to-physician ratio.(5, 8, 15)

C) Referral Recipients (Specialist Physicians)

- Feedback rate: Most family physicians expressed dissatisfaction with the lack of feedback, leading them to be uninformed about the conditions of their referred patients and sometimes resorting to unconventional methods to gather information about their status (2, 4, 5, 7, 12, 15, 16, 20-22, 24, 27).
- Feedback Quality: Research indicates that the majority of feedback forms lack good quality (5, 20, 28)
- Referral Back to Primary Level: In the articles by Nasrollahpour et al., the return of patients from level two to level one was reported as 25% and 15.5%, respectively, with the reason for not returning to the referring physician being attributed to patients' lack of awareness in both studies (20, 21).
- Timely patient acceptance and provision of necessary services: Nasiripour and colleagues expressed dissatisfaction with the collaboration of specialist physicians stationed at level two family physician programs in Kashan in their article (18). Motlagh and colleagues also reported a low rate of timely patient acceptance and provision of necessary services by specialists in the northern provinces of the country in 34% of cases (29). Additionally, many specialist physicians do not accept referrals (13). In Arak Province, family physicians were dissatisfied with the level of collaboration, timeliness of patient acceptance, referral process, and provision of necessary services by level two specialists (30). Golalizadeh and their team have pointed out several challenges that specialists face. These include a lack of collaboration, unprofessional behavior towards referred patients, insufficient time spent at specialized clinics, and failure to follow scheduled programs (4). In Golestan Province, one of the primary challenges in the family medicine program was found to be the long waiting time for patient appointments. Additionally, the delays and irregular attendance of specialists at the clinic were identified as further problems (5).

Discussion

This scoping review synthesizes evidence from 31 studies to map challenges within Iran's Family Medicine Program referral system. The findings reveal systemic, multi-layered barriers undermining the program's potential to streamline care delivery, reduce hospital overcrowding, and improve equity. Three overarching themes emerge:

1. Governance Deficits and Structural Fragmentation

The absence of robust legal frameworks and accountability mechanisms (e.g., vague referral criteria, lack of penalties for non-compliance) mir-

rors challenges in other low- and middle-income countries (LMICs) adopting family medicine models, such as India and Nigeria (31, 32). For instance, Iran's reliance on physicians as health managers without formal training in health system governance echoes Nigeria's struggles with decentralized primary care (33, 34). Weak monitoring further exacerbates inequities, as seen in rural-urban divides where rural patients face logistical barriers (e.g., travel costs) to accessing specialists. Unlike Chile's centralized referral protocols, Iran's fragmented governance allows bypassing primary care, undermining the gatekeeper role of family physicians (35).

2. Financial Misalignment and Incentive Gaps

Inadequate reimbursement for family physicians and specialists creates perverse incentives. Family physicians, burdened by high patient loads (up to 3,500 patients per physician), lack motivation to prioritize quality referrals, while specialists prioritize private practice over public sector duties. This aligns with Egypt's experience, where underfunded referral systems struggle with provider retention (36). Iran's insurance bottlenecks—such as delayed payments and restrictive tariffs—contrast starkly with South Korea's integrated National Health Insurance system, which mandates compliance with referral pathways through differential copayments (37).

3. Service Delivery Breakdowns: A Triadic Failure

- Patient-Level: Low public awareness of the referral system (reported in 16 studies) and distrust in family physicians' competence (highlighted in Mazandaran and Isfahan) reflect cultural preferences for specialist care, akin to challenges in Brazil's Family Health Strategy (4, 7, 12, 16-19, 38). It is essential to provide necessary information to the population receiving services so they are informed about the benefits of referrals through family physicians. The responsibility of informing lies with the family physician team, the county health network, the medical university, the Ministry of Health, the local media, municipalities, governorates, and other relevant institutions.

Another topic related to the patient referral system and mentioned in the studies is the concept of reverse referral (7, 12). Reverse referral occurs when a patient initially goes to a secondary level and then returns to the primary level to benefit from the referral system. Reverse referral can result from patients' lack of awareness, negligence towards the referral system, and distrust in family physicians. The patient's experience in this regard is significant; if the patient has previously used the referral system effectively or if another individual has had a positive experience with the referral system and conveyed it to the patient, it can influence the patient's behavior.

- Family Physician-Level: Incomplete referral forms (e.g., 74% of ENT referrals lacked critical data) and poor follow-up signal inadequate training in referral protocols. Similar issues plague Pakistan's Lady Health Workers, who lack standardized referral guidelines (39).
- One of the challenges related to family doctors in terms of referrals is the percentage of referred patients to specialists compared to the total number of patients visited, which is acceptable according to conducted studies (15, 23-25). Family doctors' decisions to reduce the rate of patient referrals to specialists significantly correlated with two variables based on the theory of subjective norms and perceived behavioral control, rather than motivation. Psychological variables of the planned behavior theory can explain a significant proportion of the variance in family doctors' decisions to reduce referrals of patients with respiratory diseases to specialists. Normative and control factors mainly influence the decisions made (40). According to conducted surveys, family physicians have also shown poor performance in following up on referred cases (29, 41). Given the importance of patient follow-up in controlling their diseases, especially in the realm of non-communicable and chronic disease control and treatment (42-44), the necessity of educating family physicians in this area is felt.
- Specialist-Level: The near-universal lack of feedback (reported in 12 studies) and low rates of reverse referrals (15%–25%) indicate systemic

disrespect for primary care, contrasting with the UK's "Shared Care" model, where specialists and GPs collaborate via integrated electronic records (45). The importance of the referral system has not been fully understood by specialists, as per Adam's Equity Theory, which suggests that the perceived rewards compared to our sense of contribution influence our motivation. Individuals seek a fair relationship between inputs and outputs (46). Specialists in this program feel that the time and actions required (in line with the referral system) do not necessarily result in the desired outcomes or rewards; hence, to engage them, the perceived desirability should increase to the perceived cost in this program.

4. Technological and Human Resource Shortfalls

Iran's reliance on paper-based referrals and fragmented electronic health records (EHRs) lags behind Estonia's nationwide EHR system, which enables real-time data sharing (47). Meanwhile, shortages of specialists in rural areas—a problem also seen in Bangladesh—force patients to bypass primary care, perpetuating urban hospital overcrowding (4, 7, 8, 11).

Psychological variables of the planned behavior theory can explain a significant proportion of the variance in family doctors' decisions to reduce referrals of patients with respiratory diseases to specialists. The decisions made are mainly influenced by normative and control factors (40).

Conclusion

This review identifies the referral system's challenges as symptomatic of broader health system weaknesses in governance, financing, and human resources. To strengthen Iran's Family Medicine Program, the following measures are critical:

1. Governance Reforms:
   - Enact binding referral protocols with penalties for non-compliance.
   - Establish regional oversight bodies to monitor referral quality and equity.
2. Financial Restructuring:
   - Implement blended payment models (e.g., capitation + performance-based incentives) to align family physicians' priorities with referral quality.
   - Mandate insurance reimbursements for reverse referrals and feedback loops.
3. Capacity Building:
   - Train family physicians in referral documentation and communication.
   - Expand rural specialist quotas and teleconsultation networks to reduce urban-rural disparities.
4. Public Engagement:
   - Launch nationwide campaigns to rebuild trust in family physicians.
   - Simplify referral processes (e.g., SMS reminders for appointments) to enhance compliance.
5. Digital Integration:
   - Accelerate adoption of interoperable EHRs with mandatory feedback fields for specialists.

Implications for Policy and Practice

Iran's experience underscores the need for LMICs to address referral systems as part of holistic health system strengthening, not as standalone interventions. Future research should evaluate pilot interventions (e.g., digital referral tracking in Fars Province) and explore stakeholder perspectives (e.g., specialists' resistance to feedback mechanisms). Without urgent reforms, the Family Medicine Program risks becoming another well-intentioned but underutilized pillar of Iran's healthcare system.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

Funding: The authors did not receive support from any organization for the submitted work.

Conflict of interest

The authors declare that there is no conflict of interests.

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