J Anal Res Clin Med, 2016, 4(4), 182-95.
doi: 10.15171/jarcm.2016.032, *http://journals.tbzmed.ac.ir/JARCM*

Review Article

Nine years of publications on strengths and weaknesses of Family Physician Program in rural area of Iran: A systematic review

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Article info
Article History:
Received: 10 Oct 2016
Accepted: 31 Oct 2016
ePublished: 24 Dec 2016

Keywords:
Family Physician,
Referral System,
Strength,
Weakness,
Rural Areas,
Urban Area

Abstract
Introduction: One of the most important duties of a family physician is to provide primary health care. This is completely considered in the Family Physician Program for a target population. The aim of this study was to systematically review the Family Physician and Referral System strength and weakness in rural area of Iran.
Methods: In this systematic review, Scientific Information Database (SID), Science Direct, and PubMed databases were searched and Google search engine was employed using key words such as family medicine, family physician, and referral system for the period of January 2005 to June 2013, both in English and Persian. For identifying duplicated references, Endnote Software was used and for summarizing results of fully assessed articles extraction table was employed.
Results: Strengths and weaknesses of Family Physician Program and referral system in rural areas of Iran were extracted from 28 studies. In total, 115 weaknesses (3.96 per study) and 103 strengths (3.55 per study) were obtained. Content analysis was used and 218 items were summarized into 29 items. Strengths of Family Physician Program were: access of villagers to health services, filling health document for clients, improving services for pregnant mothers, and family planning; while its obvious weaknesses included repeated unnecessary referral of clients as well as lack of providing job stability.
Conclusion: Results of studies conducted in Iran showed that Family Physician and Referral System in rural area of Iran could not be successful enough and has many shortcomings. Therefore, a growing body of effective changes must be made for a better performance and to obtain better outcomes.

Citation: Azami-Aghdash S, Tabrizi JS, Mohseni M, Naghavi-Behzad M, Daemi A, Saadati M. **Nine years of publications on strengths and weaknesses of Family Physician Program in rural area of Iran: A systematic review.** J Anal Res Clin Med 2016; 4(4): 182-95. Doi: 10.15171/jarcm.2016.032

Introduction

The final goal of health system is to improve people's health to an acceptable health status, therefore, enabling them to contribute into social and economic activities.[1] The Family Physician Program in Iran is considered as a key strategy to provide health services to people and also as the best way to implement the rural insurance scheme included in referral system. To be responsible for people's health needs, it seems inevitable for government to implement family physician. The program also looks useful in confronting irrational raise of health costs and protecting people's health. The Ministry of Health and Medical Education suggested the program for developing referral system and for preventing people from wandering between various providers. By then it became a strategy in The Fourth Development Plan of the country.[2]

In 2005, the program began to be executed in villages and cities with less than 20000 0f

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population, with emphasis on referral system.[3] Since then many studies have been conducted in the country to evaluate its effectiveness. At first glance, it is understood from these studies that in each study researchers have assessed the program in a region and have looked at it from a special aspect. With respect to economic, cultural, and other differences in regions as well as considering probable differences in the quality of services provided, it seems necessary to conduct a systematic review of studies to analyze, interpret and report their findings to depict a comprehensive landscape of the program's strengths, weaknesses, advantages, disadvantages and, as a whole, of performance of Family Physician and Referral System in Iran. On the other hand, the Ministry has decided to develop the program in urban areas (2012). Therefore, this landscape can play a positive role in successful implementation of urban Family Physician Program. The aim of this study was to systematically review Family Physician and Referral System's strengths and weaknesses in rural area of Iran

Methods

The present study was a systematic review. Scientific Information Database (SID), Science Direct and PubMed databases were searched and Google search engine was further employed using key words of family medicine, family physician, family doctor, and referral system for the period of January 2005 to June 2013, both in English and Persian. The searching strategy also included manual search of journals, gray literature, and references of included articles. Inclusion criteria were: stating at least a strength or weakness of Family Physician and/or Referral System in Iran; and assessing performance of Family Physician and/or Referral System in Iran. Exclusion criteria were: being presented in congress, letter to editor, case report, and intervention studies, and not mentioning any strength or weakness.

The primary search resulted in 306 articles. After excluding inconsistent and duplicated cases, 16 articles were finally included. Manual search revealed 3 articles from published ones and 10 thesis and unpublished articles. The final number of assessed resources was 28 (Figure 1).

For identifying duplicated references, Endnote Software was used and for summarizing results of fully assessed articles extraction table was used as well.

Results

The main results of this study are summarized in the extraction table 1. The table shows that most studies have been conducted during 2009 and 2011.

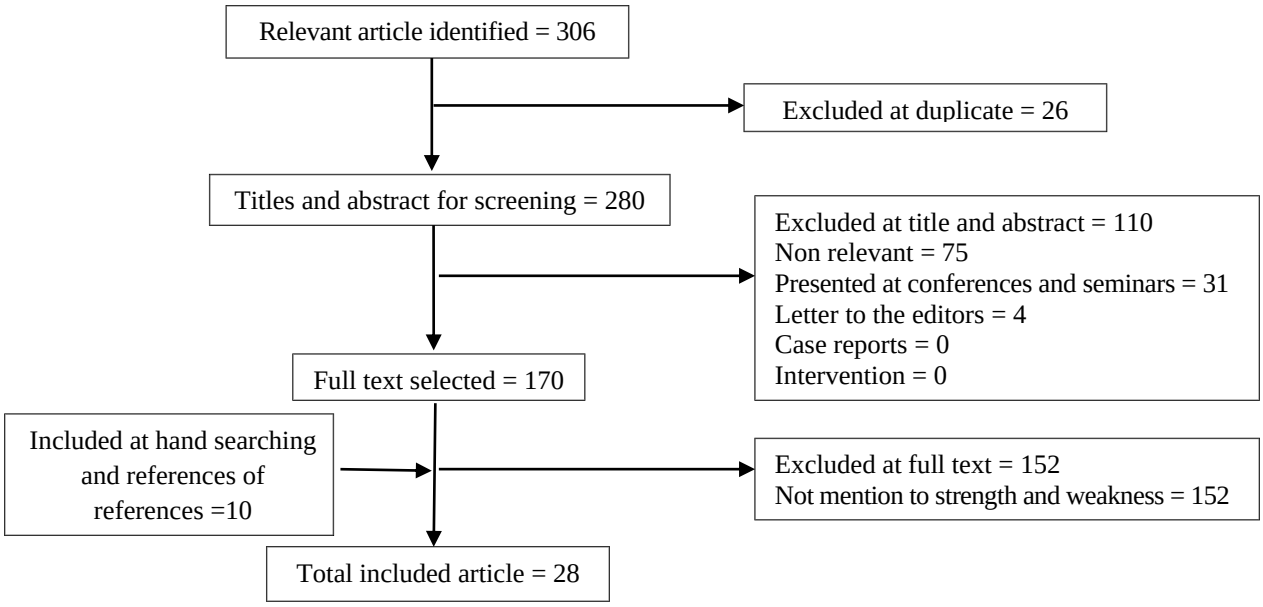

Figure 1. Flow diagram of the searches and inclusion process

Table 1. Summary of results of included studies in Iran

Writer, city	Weakness and challenges	Strength and achievements
Shams et al.[4] Isfahan	Low total satisfaction rate (65%) 53% believed that no continuous and active services are provided	High knowledge (50.6%) High motivation for receiving services through family physician (urban 62.1 and rural 65%)
Jannati et al.[5] Tabriz	Unnecessary referrals and gathering people in health houses Lack of job security for staff Lack of on time payment for health team staff Limitation of access time to family physician	High knowledge (96.8%) Forming health do document Better and more effective care of pregnant mothers and children under 6 Easy access of villagers to doctor and drug Decrease in treatment costs
Ebadi Farde Azar[6] Tehran	Lack of prioritization and making deference between self-referring and referred through referral system Lack of giving feedback to referrer level (no cases) Lack of double-edged information system among referral system levels	-
Chaman et al.[7] Shahroud	Shortage of official and medical facilities and devices Improper referral and follow up (78.9%) Lack of proper information registration and document filling Lack of giving feedback to lower levels Improper emission of death certificate	Establishing board of trustees (84.2%) Appropriate fee payment (100%) Presence of state drug store (100%)
Nasrollahpour Shirvani[8] Babol	Lack of referral form in referring cases (60%) Inadequate following up of referred cases (14%) Not informing people (80%) Not registering medical document (42% of cases referred to level 1) Low quality of total performance of referral system (2.5%)	
Ostovar et al.[9] Babol	Lack of satisfaction about amount and time of payment and fees (more than 70%) Lack of satisfaction about quality and quantity of feedbacks from higher levels (about 70%) Low satisfaction about performance of headquarter of city health center (73% lower than average)	High satisfaction about quantity of meetings (about 90%) Efficiency of trainings (about 80% average and higher)
Alidoosti et al.[12] Shahr-e-Kord	Low knowledge (about 32% average and higher) Low satisfaction (about 8% full satisfaction and 48% relatively satisfied)	-

Writer, city	Weakness and challenges	Strength and achievements
Raeisi et al.[13] Mashhad,	Lack of effect on mothers' mortality	Improving indicators of mother and child (Although they were not statistically significant)
Ostovar and et al.[9] Boyer Ahmad	Lack of justifying doctors and health workers about referral system (95% of doctors and 61% of health workers were not justified) Drug shortage in centers (95% of centers) Lack of referral form (75% of centers) Negative attitude of physicians and health workers (70% doctors, 38% health workers) Lack of prioritization in referred and self-referring patients (90% of physicians and 51% of health workers) Lack of following up referred cases (75% of health workers)	High familiarity of physicians with referral system (90% of physicians)
Golalizadeh et al.[10] Kerman	Lack of information registration and documents completion Lack of feedback to lower levels Lack of following up referred cases Low knowledge of people and providers Improper payment system Shortage of facilities (drug, referral form, transportation devices…) Weakness in supervision and control	Current study deals with challenges and disadvantages and there is no mention to achievements and advantages
Taheri et al.[14] Arak,	Improper behavior of personnel Low skills and competence of personnel Inadequate instruments Inadequate satisfaction about personnel	Better access Low service prices Low waiting time Guidance and consultation
Hafezi et al.[15] Yazd	Unfair payments Weak management	Satisfaction of the most people Decrease in costs Circadian care Forming health file Proper performance Proper contracts and instructions Proper cooperation of society
Motlagh et al.[11] Fouman	Lack of significant improvement in measuring weight and height Lack of significant improvement in immunization Lack of significant improvement in Iron consumption	Increase in number of services Increase in intensive cares Increase in examination of mouth and teeth

Writer, year, city	Weakness and challenges	Strength and achievements
Raeissi and Hashemi[16]	Lack of significant improvement in overall coverage for mothers	Increase in ultrasound
Fouman		Increase in physical examinations
		Increase in trainings and consultations
Khiabani Tanha and Mazloom	Weakness in operational planning	Effective management
Razavi[17]	Weakness in implementing current plans	Relatively successful performance in family health
Mashhad	Weakness in analyzing current situation	Effective performance in prognosis
	Weak technical performance in mental health	
	Weak technical performance in environmental health	
	Weak inter-level cooperation	
	Low satisfaction of people	
Khadivi et al.[18]	Low knowledge	Relatively positive attitude toward family physician
Shahr-e-Kord		
Tavasoli et al.[19]	Low knowledge of people	-
Shahrekord		
Nasrollahpour	Lack of referral form in referring cases	Referring due to doctor's decision
Shirvani et al.[20]	Low feedback (30%)	
Tehran,	Low quality of feedbacks (18% proper)	
	Low following up of referred cases (25 cases were followed up)	
	Low knowledge of people	
Jabari Barami et al.[21]	-	Duplication of ergometry
Tabriz,		Microbial sampling became 1.5 times
		Increase in quality of drinking water
Azami et al.[22]	Putting intervals between pregnancies	Family planning coverage
Tabriz	Abortion cases	Improvement in CYP indicator
	Number of received tablet packs	Average of family members
	Number of vials of injected ampoules	Marriage age
	Unwanted pregnancies	Number of alive children
	Lack of continuation of services	Periodical examinations of women
		Pap Smear sampling

Writer, year, city	Weakness and challenges	Strength and achievements
Azami et al.[23]	Height	Supplementation
Tabriz	Weight	Age of start of the first care
	Breastfeeding	Referral numbers
		Hospitalization
Jabari Barami et al.[24]	-	Innovations and affairs of public incorporations
Tabriz,		Executed innovations
		Frequency of held intersectional meetings
		Frequency of agreements
Adib And Noori[25]	Shortage of physician	Improvement in quality of care of pregnant mothers and children
Gohlestan	Lack of on time fees of family physician	Access of people to medical services
	Decrease of drug items	Decrease in treatment costs
	Referring non urgent cases out of working times of family physician	Forming Electronic file for families
	Omission of health house from referral system	Improvement in the indicator of rural population to physician ratio
	Direct patient referral to physician	(4075 to 1)
Vahidi et al.[26]	Unpreparedness	Proper service
Ajabshir	Improper facilities	Efficiency
		Effectiveness
		Access
		Respecting right of choice
		Continuity of services
Vahidi et al.[27]	Decrease of preventive services	Improving health indicators
Tabriz	Decrease in medical services	Access
	Weakness of referral system	Decrease in infant mortality rate
	Increase of pocket payment	Prognosis
	Lack of increase in life expectancy	Increasing relationships with society
	Lack of decrease in drug consumption	Accordance with social and economic policies
	No effect in disability	
	Unnecessary and frequent referring	
	Weak communication with university	
	Weakness in providing mental health services	

Writer, year, city	Weakness and challenges	Strength and achievements
Vahidi et al.[28]	Lack of improvement in disability rate	Better response to basic needs
Tabriz	Unnecessary and frequent referring	Accordance with social and economic policies
	Lack of total health improvement	Improving preventive services
	Weakness of referral system	Improving medical services
	High drug consumption	Access
	Lack of monitoring and supervising	Employment of physicians
Vahidi et al.[29]	Lack of decrease in addiction	Proper services
Tabriz	Low financial support	Efficiency
	Absence of physician in off days	Effectiveness
		Access
		Respect
		Proper time of providing services
		Availability
		Continuity
Vahidi et al.[30]	Irregular refer of physician	Positive attitude toward referral system
Sanandaj	Weak training and supervising	
	Drug shortage	
Jannati et al.[31]	Lack of job stability	Decrease in costs
Ramsar;	Delay in payments	Employment
	Decrease in preventive services	Access
	High workload of health staff	Prognosis
	Low knowledge of people	Training people
	Lack of facilities	Forming health documents
	Lack of regular presence of physician	Serving justice
	Unnecessary bureaucratic affairs	Improving mother and child care
	Lack of improvement in health indicators	
	Not accepting midwife stamp in insurance booklet	

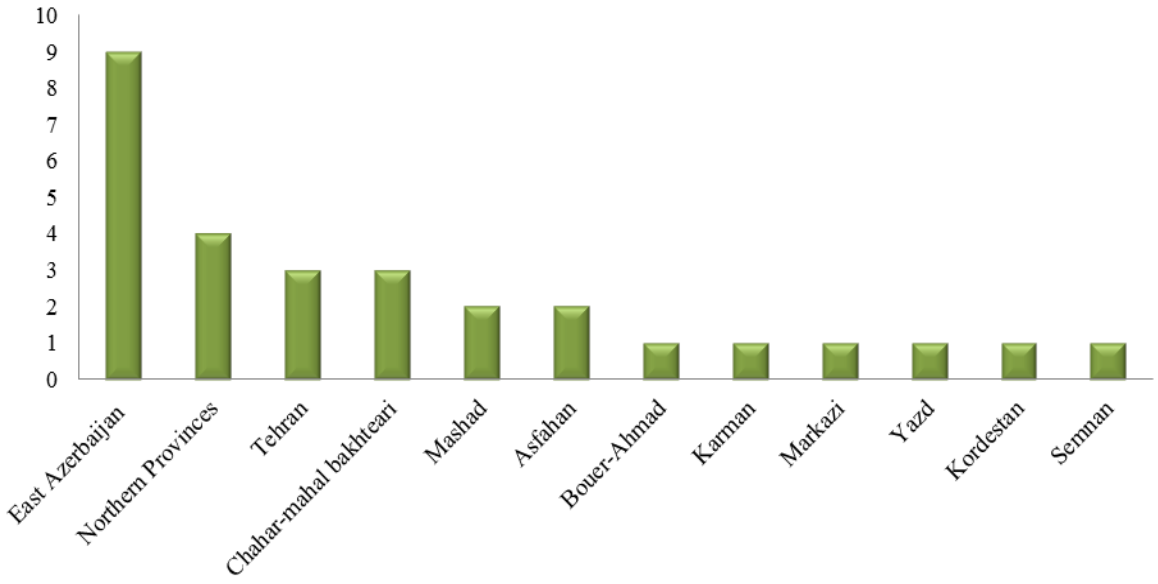

Figure 2. Frequency of the conducted studies according to the province

The studies were performed in 14 provinces which by integrating 3 of them as "Northern Provinces" we categorized them in 12 provinces. Frequency of the conducted studies is shown in figure 2.

Most of the studies (86%) were descriptive, a study was performed in qualitative method, and study design was not mentioned in 3 cases.

Strengths and weaknesses of Family Physician Program and Referral System in rural areas of Iran were extracted from 29 studies. In total, 115 weaknesses (3.96 per study) and 103 strengths (3.55 per study) were attained. Content analysis was used and 218 items were summarized into 30 items which are shown in table 2.

Table 2. Strengths and weaknesses of Family Physician and referral system in rural areas of Iran

Strength and advantage	Weakness and disadvantage
Developing health record for each person	Low satisfaction of people
Decrease in costs of health services	Lack of communication with people
Increase in access to services	Pessimistic view toward program among people and providers
Improvement of maternal and child services	Frequent and unnecessary recourses
Active case finding	Lack of job stability and proper payment
Improvement of family planning services	Self-referral of patients
People's participation	Lack of follow-up in referral case
Efficiency of services	Lack of feedback for referral cases
Effectiveness of services	Indistinguishable referral cases and self-referred ones
Employment of physicians and midwives	Shortage in accessories (drug, referral form, space, transportation etc.)
Increase in equity of service provision	Weakness of database system and imperfect completion of health records
	Low total quality of services
	Managerial inefficiencies
	Lack of cooperation between levels of provider organizations
	Inefficiency in supervision and monitoring
	No effect on health indicators of population
	Decrease in preventive measures and over emphasizing on curative services
	Unnecessary administrative work
	Lack of knowledge

The most important ones among these 29 items were increase in access to services, increase in equity, as well as decrease in costs as advantages; and decrease in preventive services, low communication with people, lack of follow up and feedback in referral, and managerial problems such as lack of supervision and inappropriate payment mechanism, as disadvantages.

Discussion

World Health Organization (WHO) considers Family Physician Program as a basic step for improving the quality of services, decreasing costs, increasing effectiveness, and maintaining equity in health system. Family Physician and Referral Systems are among programs to which attention was paid in the field of health service management in Iran since many years ago, where it was put into practice in 2005. After 9 years of executing family physician program in Iranian rural areas, it is now possible to suggest reformative strategies to develop its execution procedure by studying its advantages and disadvantages. This study determined advantages and disadvantages of the program by investigating results of the conducted studies on performance of Family Physician Program and Referral System and finally proposes some suggestions for resolving deficiencies and gaining successful performance in urban areas.

In this study, obvious advantages of Family Physician Program were: access of rural settlers to health services, filling health document for clients, and improving services for pregnant mothers and family planning, while its obvious disadvantages included: repeated unnecessary referral of client, lack of providing job stability, etc. which have been mentioned in the study of Jannati et al.[31] about evaluating advantages and disadvantages of family physician program in Ramsar City, Iran. The only difference between results of this study and our study could be in the item of higher knowledge of people on family physician program and improvement of children's health indices and cares.[32] However, in most of the conducted studies of the field, as well as in this study, low knowledge of people and lack of significant improvement in children's health indices have been mentioned as disadvantages of the program. It could be due to the better execution of the program in this city or due to fairly literate people in this city.

In a study on evaluating performance of referral system in Family Physician Program, disadvantages of the program included fairly literate people, lack of referral follow-up and proper feedback, and lack of facilities such as having no referral form.[7] These results were in line with the findings of the present study and with those of some studies about performance of national Family Physician Program, the status of executive centers, and performance quality.[8]

In the study of Ostovar et al.[9] in Boyer Ahmad, Iran, and qualitative study of Golalizadeh et al.[10] in Kerman Province, Iran, the major weaknesses of family physician plan were listed as low satisfaction of people about family physician services, lack of follow up and adequate feedback in referrals, lack of facilities, direct and unnecessary referring of people, improper information registration, and lack of prioritization in self-referral and referral by physician, all of which were mentioned as the main challenges and weaknesses of family physician plan and all were also the weak points found in the current study.

Benjamin and Haendel[33] in their study on Cuba concluded that employing family physician had positive role in decreasing children mortality. In addition, another study on Cuba showed that people were satisfied by executing family physician plan.[34]

Sans-Corrales et al.[35] in a systematic review of 19 articles showed that there is a positive relationship between execution of family physician plan in one hand and improvement of satisfaction indicators, health indicators, and costs in the other hand. Comparing the results of conducted studies

in Iran and Cuba,[33] it is possible to point that there is a consistency in both countries in terms of improving mother and child services, decreasing costs, and increasing accessibility. However, it seems that family physician plan in Cuba acted better and more efficient compared to that in Iran in terms of people satisfaction and total improvement of health indicators.

In a study in Slovenia[36] one of the disadvantages of family physician plan was mentioned as low satisfaction of people about long waiting time in doctors' offices. However, in the current study the decrease in waiting time has been one of the advantages of family physician plan. Another study in Pakistan[37] listed lack of belief in referral system, low knowledge of people, lack of following up referred cases, and managerial weaknesses of family physician team as reasons for failure of referral system in Pakistan which are in line with the findings of the current study. The reason for this fact could be the similarities in concepts of social, cultural, and economical status of Pakistan and Iran.

Results of an study in Poland[38] showed that the main concern of people and patients on performance of family physicians are about relationship between patient and doctor, and ability and qualification of family physicians, while in studies conducted in Iran these two items were not mentioned and people did not mention them either, which could be due to the differences between the levels of expectations and knowledge of people in the high income countries (HIC) and low and middle income countries (LMIC). In developed countries moral issues are more important than developing countries.

In a study using Delphi technique in Alberta province of Canada,[39] 8 achievements and 9 main challenges were identified for family physician plan. Some achievements of family physician plan in this province which were different from achievements of Family Physician Program in Iran were as follows: increase in prevention services which was decreased in Iran; continuous services and proper feedbacks in referred cases but in Iran feedbacks were so limited and weak; job security of personnel and physicians that was of the most noted complaints of physicians and family physician team in Iran; and information exchange and improvement in the competence of low-educated doctors and personnel while in Iran lack of communication between referral levels and lack of a comprehensive and efficient communicative system were among the major weak points of Family Physician Program. However, family physician challenges in these two countries were nearly similar and mostly including: high workload of family physician team, insufficient income for doctors and family physician team, lack of accountability and on time and proper access to specialist doctors, lack of resources, and unnecessary bureaucracy affairs. Difference in achievements could be due to the better performance and proper infrastructure in Canada. Low number of challenging cases and provided achievements in the study above could be a result of study type and its analyzing method and also could be a result of researchers' perspective who may categorize challenges and achievements in a general form or more detailed way.

A point which had been ignored in studies conducted in Iran was the issue of the effect of family physician plan and referral system execution on hospitalization cases or on the amount of decrease or increase in hospital referrals. In a study in Saudi Arabia[40] results showed that implementation of referral system in this country led to 40% decrease in outpatient visits and increase in amount of receiving care from primary care system. Although it was mentioned that these amounts are so low comparing with that of developed countries but it could be acceptable as a base in a developing country, a point that has been ignored in Iran. In a study in Italy[41] about behavior and performance of family physicians in family planning, it was mentioned that performance of doctors about family planning was not acceptable and they need to be trained in

special courses. It is in spite of our country where studies showed improvement in family planning services.

Results of a study in London, United Kingdom,[42] showed that smoking cessation interventional programs were more cost-effective than other interventional programs when implemented by family physicians. However, in family physician plan of Iran smoking cessation and some other preventive activities have been neglected. By inspecting problems and weaknesses of Family Physician, we found that some of these problems and weaknesses were due to training weakness and working abilities of family physicians in rural regions. The origin of this problem was traced back in differences of training environment and type of trainings for physicians with their working environment, since they have been educated in medical departments and have passed their practical courses in hospitals and clinical environments while their working environment was society and rural regions and conditions of these environments are too different. It is a subject mentioned by Norris[43] who pointed that one of the challenges for family physicians is the type and environment of their trainings. So it seems necessary to modify and revise training courses and provide social-oriented training courses in these programs in order to train more successful and efficient family physicians.

In a study in Turkey,[44] positive points of family physician plan were listed as: providing proper consultations, receiving proper services through telephone, and easy access to services. In our study, receiving services through telephone has not been investigated. Disadvantages of family physician plan in Turkey were long waiting time, lack of rapid pain removal in urgent cases, and lack of patients' involvement in decision makings. We should be aware that improvement in waiting time and satisfaction about it has been mentioned as an advantage in our country while this was one of disadvantages of the plan in many countries. This should be specially investigated since it could be due to waiting time standards among other countries or low level of expectations of people in our country. It seems that lack of paying attention to the issues of patient's cooperation and patient-oriented services has been neglected in developing countries.

One of the fundamental subjects in this field, which was not mentioned in the articles investigated in this study, is the cultural differences and traditions of people in different rural areas, the obvious example of which is local healers. Since people trust on these persons, they avoid referring to family physicians. However, this was completely reversed in the studies conducted in Iran, for people even were referring to physicians and hospitals in unnecessary cases which resulted in crowded hospitals and problems in providing services. Lack of referring to family physicians as a result of trust on traditional healers was mostly noted in countries such as Indonesia, India, China, and countries where superstitions run in society.[45] However, considering cultural similarities of Iran and these countries, it seems necessary to investigate the effect of health cultures of people in different regions on providing services by family physicians.

Problems and challenges of referral system in WHO experts' point of view[46] are: high workload of health staff, long distance between villages and cities, lack of trust on low level cares, communicative and informative weaknesses among referral levels, improper usage of hospitals, lack of proper design for referral system, lack of support and managerial responsibility, and inadequate training.

In Palmer's view[47] disadvantages of referral system are as follows: low quality of primary services, inadequate proficiency of personnel, transportation problems, medication shortage, and high cost of some services which are in accordance with the results of current study. In the study of mother and child referral system in Armenia,[48] following points were mentioned: inadequacy of resources specified to family

physician plan, lack of understanding referral philosophy or lack of justification, unwillingness or lack of public welcome to referral system, and shortage of transportation devices for patients as the major problems of referral system. In studying the problems of patients' referral system in Honduras,[49] the major problems of referral system were mentioned as low referral cases, direct referral of people, weakness of information system, and lack of proper justification of people and providers, which are in line with the results of the current study.

Of the major weaknesses of this study was lack of access to some thesis and unpublished resources in some universities of the country. However, this study provides a comprehensive and clear vision about advantages and disadvantages of family physician plan and referral system in Iran by comprehensive summarizing and investigating of all published articles on this subject, some unpublished resources, as well as different thesis on this subject. The results of this study could be effective in successful execution and elimination of possible defects in family physician program of urban areas.

Conclusion

Although several years have passed from the implementation of the family physician plan and referral system; the results of studies conducted in Iran showed that despite important and significant achievements, this plan could not be successful enough and has some problems. Moreover, efficiency and satisfaction degree of services and other aspects of Family Physician Plan was low in Iran.

Acknowledgments

This study was supported by Tabriz University of Medical Sciences, Tabriz, Iran.

Authors' Contribution

Saber Azami-Aghdash, Mohammad Saadati, Jafar-Sadegh Tabrizi developed the concept of the study. Saber Azami-Aghdash, Mohammad Saadati, Jafar-Sadegh Tabrizi and Mohammad Naghavi-Behzad designed the study. Mohammad Mohseni and Amin Daemi defined the intellectual content. Mohammad Mohseni, Mohammad Naghavi-Behzad and Jafar-Sadegh Tabrizi performed the literature review, Mohammad Mohseni performed the clinical studies and Saber Azami-Aghdash and Mohammad Mohseni performed the experimental studies. Jafar-Sadegh Tabrizi and Mohammad Naghavi-Behzad collected the data. Mohammad Naghavi-Behzad and Jafar-Sadegh Tabrizi analyzed the data. Amin Daemi performed the statistical analysis. Saber Azami-Aghdash, Mohammad Mohseni, Mohammad Naghavi-Behzad, Mohammad Saadati and Jafar-Sadegh Tabrizi drafted the first copy of manuscript. Mohammad Naghavi-Behzad, Amin Daemi, Mohammad Saadati, Jafar-Sadegh Tabrizi edited the manuscript. Saber Azami-Aghdash, Mohammad Naghavi-Behzad, Mohammad Saadati, Jafar-Sadegh Tabrizi finalized and revised the manuscript.

Funding

There were no sources of funding.

Conflict of Interests

Authors have no conflict of interest.

Ethic Approval

The study protocol was approved by the Ethics Committee of Tabriz University of Medical Sciences (TUMS), which was in compliance with Helsinki Declaration.

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