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The study of urban family physicians performance and its related factors in the south of Iran

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ABSTRACT

Introduction: The Family Physician Program is one of the most important plans for increasing the equitable access and affordable health services. This study aimed to examine the performance of Urban Family Physicians and associated factors in the third year of its implementation.

Method: A cross-sectional study was conducted on all Family Physicians (31 persons) working in the private and public polyclinics and clinics in the Firoozabad, from October to December 2014. The population of the study consisted of all the physicians (31 persons) who were involved in the Family Medicine Program. The main instrument for data gathering was a standard questionnaire developed by Ministry of Health and Medical Education (MOHME). Validity and reliability of the questionnaire have been confirmed by MOHME. The questionnaire had four parts including medical equipment, informing the patients, referral system rules, and protocols. The data were analyzed using SPSS statistical software, version 16, through appropriate statistical tests including Independent T-test, Pearson Correlation, One sample T-test, in a significance level of<0.05.

Results: Findings of the study showed that there was not a significant association between performance of physicians and equipment (77.20 ± 22.80). Their performance based on informing patients (81.59±16.69), protocols (82.42±12.05), and total performance (82.41±13.42) was good. Their performance in terms of referral system (69.35 ±16.15) was weak. There were not any association between the performance and marital status, age, career, and sex. In contrast, there was a significant relationship between nativity and performance so that the performance of native physicians was better.

Conclusion: The Urban Family Physician is an outstanding step for improving the public health but its successful implementing needs to develop an appropriate solution for employing the native physicians. It seems that applying various incentives and employing the native physicians in terms of their ability and training them about the importance of referral systems in public health will be helpful.

Keywords: Family medicine, Performance, Urban family physician, Referral system

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Introduction

A health system includes all the organizations, institutions and resources dedicated to provision of health services. Establishment of referral system and family medicine program is one of the major plans of health systems worldwide, aiming to increase the community access to health care and improve efficiency in the health care processes (1). Consequently, World Health Organization (WHO) assumed the Family Medicine as the center of global efforts to improve the quality, effectiveness and equity, and reduce the costs in the health care systems (2). Family physician is a community oriented doctor who is responsible for the care of non-selective patients with undifferentiated problems (3, 4). While achieving more efficiency and effectiveness, health systems are organized in the most countries in such a way that poor people could have access to specialized services through a referral system (5).

Countries with national medical system have a comprehensive referral system (6). Furthermore, family medicine is the most appropriate strategy for referral system (7).

A study in the USA suggests that weakness of the trained staff, shortage of medicine and medical equipment in health centers have resulted in decrease in the Bed Occupancy Rate (8). Colman indicated that 55% of patients that referred to emergency units could be treated by General Practitioners (9). If the decision makers do not apply appropriate solutions for efficient implementation of

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the referral system, it doesn't work efficiently (10). Global and regional findings suggest that the major proportion of health care tasks would be delegated to GP as a primary basis for reforming the health system (11). WHO recommends that to meet the people's needs and achieve the goals of health system reform, the Family Medicine Program should be considered as a major policy (12).

Since 1985, health care network system was established in the health system of Iran and, subsequently, the health care services were regionalized , but the desired goals were not achieved completely (13).

In addition to providing feedback information, investigating the performance has other important functions, one of which is determining the training needs and developing the human resources (14). Another function of performance investigation is that the organization can modify its way according to changing circumstances and also make it dynamic (15). There are some concerns about preparation of young general practitioners as a Family Physician because of their low motivation and experience (16). Moreover, the Iranian health system, like many other developing countries, is confronted with emerging problems such as non-communicable diseases and traffic accidents as the major causes of mortality.

Hence, the objective of this study was to examine the performance of Urban Family Physicians in Firoozabad, Fars province. The results of the study can help the policy makers and managers to promote the quality of decision making and planning in the national level for improvement of heath status of the public.

Methods

This cross-sectional study was conducted on all Family Physicians working in the private and public polyclinics and clinics in the Firoozabad from October to December 2014.The subjects of the study consisted of all of the physicians (31 persons) who were involved in the Family Medicine Program in the Firoozabad, from Fars province; in other words, the sample size consisted of the total number of family physicians. The research settings included four public health care centers and polyclinics and three private polyclinics. Data collection was carried out via observation of some medical files of patients, questionnaires filled out by family physicians, and review of the documents, referral, and feedback forms by the main researcher. She collected all the data by attending the polyclinics and clinics. Necessary information about the purposes of study was given to physicians and after their agreement, the questionnaires were delivered to them. The main instruments for data collection were the standard questionnaires developed by Ministry of Health and Medical Education (MOHME) which have been used for evaluating the urban family physician's performance recently. Validity and reliability of the applied questionnaire in this study have been confirmed via MOHME and other qualified experts by using Cronbach alpha statistic (92%). The questionnaires of the clinics and polyclinics had the same approach but the number of questions was different based on the equipment and rule of private and public clinics. The first section of questionnaires contained questions about the physician's demographic information (age, sex, shift, workplace, marital status, years of working status of residence). The questionnaire of clinics contained 23 questions and the other one had 32. The second section of each questionnaire had four parts evaluating the average performance of physicians based on medical equipment (seven questions), informing the patients (20 questions), considering the referral system rules (four questions), and implementing the guideline (24 questions). The main researcher collected all of the data. Necessary information about the purposes of study was given to physicians. Total score of the questionnaires was100 and the score of 75 and upper were scored "good", and those less than 75 were considered "bad".

After collecting the data, they were entered into Excel software (because of easy managing the data) and then analyzed via Statistical Software SPSS 16 using appropriate statistical tests (Independent T-test, Pearson Correlation, one sample T-test; $p<0.05$ was considered significant. Independent T-test, one way ANOVA and Pearson correlation were used to analyze the association between performance scores and demographic characteristics and other factors.

The study was approved by the ethics committee of Islamic Azad University of Marvdasht. Information about thestudy was presented to family physicians verbally and after obtaining their consent, the questionnaires were filled out.

Results

In this study, 31 physicians aged 26 to 56 years were studied. Their mean age was 41.68 ± 7.26 years. The majority (87.1%) of them were male. Most of them (64.5%) were working in 2 shifts. Table 1 represents the frequency distribution of demographic characteristics and some context variables of the respondents. According to the results, all of the physicians were General Practitioners. Their years of experience in practicing medicine years were between 1 and 20 years with the mean ± SD career was 9.55 ± 5.63 years. The population was between 1700 and 3535 and every physician covered an average of 2677 people.

Table 1. Socio–demographic characteristics in family physicians of Firoozabad in 2014

Demographic Variables		Mean ±SD
Age		41.68±0.726
Sex	Male	27±0.871
	Female	4±0.129
Shifts	Single-shift in the morning	8±0.258
	Single-evening shift	3±0.970
	Two shifts morning and evening	20±0.645
The workplace	Clinic	11±0.355
	Office	20±0.645
The status of residence	Native	16±0.516
	Non- Native	15±0.484
Marital status	Single	6±0.194
	Married	25±0.806
Career		9/55±0.563

The physicians' score in the equipment part was between 26 and 100; the mean±SD score was 77.20±22.80 out of 100. (Table 2) To compare the performance of physicians based on equipment, one sample T-test was used; Table 2 shows the analysis results. As the Table presents, despite the fact that the physicians' mean score in the equipment part was higher than good but their performance in terms of equipment does not show a significant difference with good condition.

The physicians' score in the informing part was between 39 and 100; the mean ± SD score was 81.5 ± 16.69 out of 100. (Table 2) To compare the performance of physicians based on informing, one sample T-test was used; Table 2 shows the analysis results. As the Table shows, the performance of physicians in terms of informing shows a significant difference with good condition.The score of physicians in the referral system part was between 22 and 89; the mean ± SD score was 69.35 ± 16.15 out of 100. (Table 2) To compare the performance of physicians based on the referral system, one sample T-test was used; Table 2 shows the analysis results. As the Table shows, the physicians' performance in terms of the referral system does not show a significant difference with good condition. In addition, the mean score of the referral system was lower than that of good performance, indicating the undesirable situation of the referral system. The physicians' score in the protocols part was between 58 and 100; the mean ± SD score was 82.42 ± 12.05 out of 100. (Table 2)

To compare the physicians' performance based on the protocols, one sample t-test was used; Table 2 shows the analysis results. As shown in the table, the physicians' performance in terms of protocols shows a significant difference with good condition.

And finally, the physicians' score in the total performance part was between 50 and 98, and the mean ± SD score was 82.41 ± 13.42 out of 100. (Table 2) To compare the physicians' performance based on the total performance, one sample T-test was used; table 2 shows the analysis results. As shown, the physicians' performance was significantly good. This means that the total performance of urban family physicians is satisfactory in Firoozabad. Predicted range of changes was between zero and 100 for all parts.

As shown in Table 3, there was not a significant difference between the variables; also, no significant difference was observed between the performance of males and females (Table 4).

As Table 4 presents, except for the informing part, there was a significant difference among the various dimensions of performance. In other words, the mean score of native physicians was more than that of non-native ones. There was no significant difference in the scores of the informing part. As Table 4 presents, there was a significant difference only in the dimension of equipment, so that the performance score of single physicians was significantly lower than that of married physicians.

Table 2. A Comparison of the performance score based on the equipment, informing, referral system and protocols and Total performance in family physicians of Firoozabad in 2014

Dimensions of performance	Mean	SD	The optimal situation	P value
The equipment	77.20	22.80	75	0.594
Inform	81.59	16.69	75	0.036
Referral system	69.35	16.15	75	0.061
Protocols	82.42	12.05	75	0.002
Total performance	82.41	13.42	75	0.004

Table 3. The correlation between age and career with dimensions of performance in family physicians of Firoozabad in 2014

Dimensions of performance	Age		Career	
	r-value	P-value	r-value	P-value
The equipment	0.214	0.247	0.313	0.089
Inform	-0.014	0.941	0.071	0.706
Referral system	0.295	0.107	0.266	0.148
Protocols	0.154	0.407	0.249	0.177
Total performance	0.218	0.238	0.255	0.167

Table 4. Comparison between physicians' performance score in terms of sex, nativity and marital status

		The equipment	Informing patient	Referral system	Protocols	Total performance
Sex	Male	82.21±77.48	16.01±81.53	16.46±70.16	12.11±82.47	12.69±82.83
	Female	32.67±75.32	23.76±82	14.69±63.88	13.47±82.06	19.85±79.62
	P-value	0.863	0.959	0.478	0.950	0.663
Native/ Non- Native	Native	26.02±63.65	21.10±77.87	16.46±59.62	12.57±75	14.36±74.23
	Non- Native	7.23±89.91	10.71±85.08	9.26±78.47	10.71±85.08	6.18±90.09
	P-value	0.002	0.249	<0.001	0.249	0.001
Marital status	single	28.27±59.13	27.61±77.77	13.14±61.11	13.33±78.54	18.72±75
	Married	19.55±81.54	13.60±82.51	16.40±71.33	11.83±83.35	11.63±84.20
	P-value	0.028	0.542	0.168	0.390	0.134

Discussion

One of the most important and effective plans for increasing the public access to and fair utilization of health services is the Family Medicine Program. Now, the purpose of the Family Medicine Program and referral system is to improve the health status of people and also meet the goals of Iranian 1404 vision (17). Although numerous studies about Family Physicians have been performed in the rural areas of Iran and even in the world, this study was conducted to examine the performance of Urban Family Physicians and also determine the association between their performance. According to our findings, urban family physicians' performance was different based on various factors and dimensions. For instance, the association between the performance and equipment was not significant. The results of Chaman (18) and Nasrollahpour Shirvani (19) are almost in line with our findings. It seems that the reason of similarity in results in former studies is the necessity of equipment and facilities for good service delivery, so that Palmer (20) and Ali Babayi (21) have confirmed this result, as well.

Informing the population was the other dimension of physicians' performance. The mean score of physicians' performance showed a significant difference and was good. Residents as the most important source of information and the connecting bridge between the doctor and patient had a major role in this issue. In other words, residents were familiar with native population needs and behaviors and they could communicate easily. The results of Najimi (22) in Isfahan are in to the same line with our findings, too. Also, Walker (23) represents the health staff as an important factor for informing the other people in the health organizations. Furthermore, other studies have suggested the health care personnel and public media as the most important source of information (24, 25).

The results of this study showed that the performance of urban family physicians based on protocols was good. In contrast, Mehrolhasani et al. (26) concluded that weakness in the implementation of protocols and deficiency in the regulations were the challenges of family medicine policy. The most important challenges are the lack of legal requirements for specialists to collaborate in implementing the policy, completing referral forms and giving feedback to the first level. Also, Golalizadeh et al. (27) stated that the limiting regulations were the weakness of Family Medicine Policy.

The mean score of physicians' performance based on referral system was lower than good and also that was not significant statistically ($0.05<p$). Based on the physicians responses, some reasons for undesirable referral system include: insistence, self-referential, in appropriate collaboration of specialists with others, weak coordination between GP and specialist, lack of regular archive for referral feedbacks, inappropriate strengthening of culture and weak public participation, lack of follow-up for needy patients, lack of a positive attitude in GP towards the referral system, inadequate coordination among different parts of the community, inadequate medical education or lack of training the specialist family physician, inappropriate management of referrals, having the treatment-oriented approach, and having the materialistic approach among specialists. The findings of Mehrolhasani et al. (26) are consistent with the results of previous studies; they concluded that weakness in referral system was one of the challenges in the Family Medicine Program. Moreover, other studies demonstrated that the weakness of the health care team in managing the patients from up to bottom is the other deficiency in the program (27-31). Nasrollahpour Shirvaniet al. (31) showed that patients' requests were the reason of two thirds of referrals in Northern provinces. Studies in other provinces of Iran have indicated the undesirability of the referral system (18, 29, 32-34).

This study showed that demographic characteristics of the physicians such as age, sex, career, and marital status did not have a significant effect on the performance of physicians while only the factor of native/non-native had an effect on their performance (the performance of native physicians was significantly better than exotic ones). It seems that some factors like durability, easy access, high safety and convenience, easy communication, appropriate office equipment and facilities, common language, and culture affected the performance of native physicians. Also, Khosravi et al. (35) showed that there was no significant association between the durability and sex, localness and marital status. Our findings are in the line with their results. In contrast, Hafezi et al. (36) suggested that physicians with long time career (between 10 and 20 months) had the best performance while those with short term career (under than 10 months) had the weakest performance. In fact, we can conclude that the experience and career have a positive effect on the performance of physicians.

Torabian et al. (37) concluded that weaknesses of Family Medicine Program included constant change in laws, non-appropriate laws, failure in obeying the law and abuse of them by people, inconsistency of MOHME laws with health insurance regulations, imparting sufficient information to people, and not respecting to referral law. Results of this study are in the same line with our findings in terms of referral system, but they are in contrast with our results in terms of informing and protocols.

Our study had some limitations such as insufficient access to non-native physicians, high number of patients in the clinics and polyclinics, inadequate cooperation of physicians for filling the questionnaire, and inadequate number of participants. Obviously, further national and provincial research is needed to study the performance of family physicians in Iran.

Conclusion

According to our finding, the performance of urban family physicians in terms of total score and some factors like patient informing, consideration of protocols and nativity was good, but their performance based on other factors like referral system and equipment was weak. Moreover, demographic characteristics like sex, age, career and marital status did not affect the performance of physicians. The Urban Family Medicine is an outstanding step for improving the public health but its successful implementation needs development of an appropriate solution for employing the native physicians. It seems that applying various incentives, employing the native physicians and training them about the importance of referral systems in public health are helpful.

Abbreviations

MOHME: Ministry of Health and Medical Education

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Declaration

First, the authors declared that they had no conflict of interests. Second, it should be noted that this paper has been extracted from a MSc thesis that had approval of Islamic Azad University of Marvdasht, Emam Reza Complex (former, Fars Science and Research Branch).

Authors' contribution

Ozra Nourafkan: Performer, Corresponding Author and Preparing and editing the article. Abbas Yazdan Panah: Tips on all stages of the project. Erfan Kharazmi: Consulting in all stages of the project

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