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The performance of rural family physicians in Fars province, Iran

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Abstract

Background: Family physician (FP) program is a complete health-care system whose most important results are elimination of individuals’ confusion when going to the doctor and increase in their satisfaction with health services. This study aimed to evaluate the performance, strengths, and weaknesses of FP program. Materials and Methods: In this cross-sectional study, 52 FPs in Fars province were selected via stratified sampling and their performance was investigated. The data were collected using FPs performance questionnaire that included five domains, namely, management, performance, contract guidelines, community involvement, and outcomes. Then, the data were entered into the SPSS statistical software, version 19, and were analyzed using t-test, ANOVA, and Pearson’s correlation coefficient. Results: Among the 52 FPs under study, 56.9% were male and 43.1% were female. The lowest and highest scores were related to community involvement (3.93 ± 0.81) and outcomes (23.52 ± 3.04), respectively. The results showed significant relationships between most domains (P < 0.05). However, no significant correlation was found between gender and different domains (P < 0.05). Conclusion: Considering diverse activities done by FPs, the wide area of our country, and issues related to increasing satisfaction among physicians and individuals covered by the program, further researches are required in this area.

Keywords: Evaluation, family physician, performance

Introduction

One of the most important events in evolution of production and supply of health-care services is international communities’ decision to accept primary health care (PHC) system in order to achieve objectives, such as social justice in access to PHC services and reduction of health-care costs.¹ PHC includes essential health care accessible to all individuals and families. It is the principal of the health-care system and socioeconomic development. It is also the first contact point between people, families, and society one the one hand and the health-care system on the other.¹ In the past few decades, positive relationships have been observed between the PHC-based health-care system and promotion of the overall quality of care, evaluation, and cost control.²

Referral system (RS) is one of the sublime systems among health-care systems in the world, which has been proved to be cost-effective in several studies.³ A study conducted in Saudi Arabia showed that use of RS caused a 40.6% reduction in the number of outpatients, a 19.6% increase in the number of individuals referring to health centers, and a 19.2% increase in the number of referrals.³ Moreover, some studies have disclosed that if the level of services is organized based on RS, 80–90% of health-care needs can be satisfied at the first level. A study conducted by Morrel reported that out of every 1000 individuals, 750 had a history of a health problem in last 2 weeks. Among

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these individuals, 500 had tried self-care, 250 had gone to a general practitioner, 9 were referred to a specialist, and 5 were sent to a community hospital for hospitalization. Only one patient was referred to a university-specialized hospital for hospitalization.⁸

RS is organized such a way that patients whose diseases cannot be diagnosed by lower level practitioners are referred to higher levels with eligible employees who are able to provide more specialized services in a broader scope using advanced technologies.⁷ On the one hand, different levels of services prevent frequent and unnecessary referrals to specialty levels and waste of human and material resources. Thus, it is an appropriate approach to control the costs and increase alignment between general practitioners and specialists. On the other hand, overlooking the RS can break down the chains of the health-care system, increase the costs, and damage the quantity and quality of services.⁸

Health system reforms in various countries, including Iran, are always inevitable to encounter new and changing needs and expectations in the area of health.⁹ In our country, design and application of family physician (FP) and RS were considered as the foundation for the process of reforming the health system with the aim of maximizing health status, increasing health-care coverage, reducing unnecessary costs, reforming payment systems, and increasing accountability in the health market.¹⁰ In the FP program, medical activities are health oriented and the general objective of the project is protecting and promoting public health and providing health services in defined limits to individuals and families.⁸¹⁰ Perhaps the simplest form of evaluating the FP program is measurement of service recipients’ satisfaction that should be considered in planning, implementation, and evaluation of rural programs as the most pivotal indicator of success of rural medical services and insurance.⁸

FP program is a comprehensive health and treatment system whose most important outcomes include elimination of individuals’ confusion when referring to the doctor and increase in their satisfaction with health services. It also minimizes the waste of resources and is thus economically viable. It seems that in order to respond to individuals’ health needs and to cope with the steep rise in health-care costs and prevent its adverse effects on people’s health, the government has no choice but to continue implementation of the rural FP program and pilot it at the urban level.

According to what was mentioned above and given the dearth of studies in this area in Fars province since the beginning of the FP program, the present study aims to evaluate the performance of the province’s rural FPs. The results can be used to help achieve the goals of this program.

Materials and Methods

The present cross-sectional (descriptive-analytical) study was carried out to assess the performance of FPs in 2013. The study population consisted of all general practitioners working in the FP program in rural areas under the supervision of Shiraz University of Medical Sciences (n = 260). A sample of 52 general practitioners was selected using stratified random sampling. Since specific subpopulations were to be studied, each city was considered as a class. Then, a number of participants were selected from the list of available doctors at each city’s development headquarter proportional to the size of that class. The sample size was determined based on the previous studies conducted on the issue, considering standard deviation of 3.4, confidence interval of 95%, and estimation error of 0.5, and using the following formula:

\[
n = \frac{z^2}{d^2}
\]

The inclusion criteria of the study included more than a year’s experience, tendency to participate in the study, and accurate completion of the questionnaires.

The study data were collected using FPs evaluation questionnaire that included the following domains: (1) performance with subscales of performance management and technical performance (Are there any attempts to solve the problem of shortage of personnel via the city’s health officials? Are the personnel doing their job based on the division of labor?); (2) management with subscales of situation analysis and action plan (Is vital horoscope information being collected? Are the health problems of the region prioritized?); (3) regulations (Does the physician observe working hours according to the contract? Is the physician present at the center as scheduled on holidays?); (4) community involvement (Does the physician try to satisfy the needs of the center (space, equipment, car, etc.) through community involvement? Does the physician hold monthly Board of Trustees meetings (rural/urban?)); and (5) outcome including technical, support, and satisfaction indicators with subscales of public satisfaction, city health center satisfaction, and staff satisfaction. The questionnaire was developed, piloted, and corrected by the Ministry of Health, Treatment, and Medical Education. The data were collected by interviewing experts at health centers. Scores 1 and 0 were given to positive and “no problem” items and negative items, respectively. Then, the score of each area was obtained by calculating the sum of scores for that area.

As a part of ethical considerations, the study participants were ensured about the researchers’ attempt to preserve human dignity, protect privacy and confidentiality in relation to their information, and not to use the information for other purposes.

After all, the collected data were entered into the SPSS statistical software, version 19, and were analyzed using descriptive statistics, paired sample t-test, ANOVA, and Pearson’s correlation coefficient. \( P < 0.05 \) was considered to be statistically significant.
**Results**

This study was conducted on 52 physicians covered by Shiraz University of Medical Sciences. Among the participating physicians, 56.9% (n = 29) were female and 43.1% (n = 22) were male. The highest and lowest mean scores were related to outcomes (23.52 ± 3.04) and community involvement (3.93 ± 0.81), respectively [Table 1]. Indeed, individuals' satisfaction with the FPs and health teams was more than 90% in the domain of outcomes.

The study results revealed a significant relationship between most of the domains [Table 2]. However, the results of *t*-test indicated no significant relationships between gender and mean scores of different domains (*P > 0.05*) [Table 3].

The mean scores of different domains in different cities have been summarized in Table 4. Accordingly, the results of Kruskal–Wallis test showed a significant difference among different cities in the province regarding the total score of the questionnaire (*P = 0.003*). However, no significant difference was found among different cities with respect to the domains of management (*P = 0.062*) and performance (*P = 0.192*). On the other hand, significant differences were found among different cities concerning contract and regulations (*P = 0.006*). Accordingly, the lowest (14 ± 0) and highest (25 ± 0) scores were related to Grash and Khonj, respectively. There were also significant differences among different cities with regard to the domains of community involvement (*P = 0.005*) and outcomes (*P = 0.03*)

**Discussion**

FP program is one of the most effective ways to improve individuals' equitable access to health services. In addition to providing individuals with required services, this program prevents abuse of these needs by health-care providers.[12]

The findings of the present study demonstrated that among different domains of FP performance, the highest and lowest mean scores were related to outcomes (23.52) and community involvement (3.93), respectively. Indeed, individuals' satisfaction with FPs and health teams was more than 90% in the domain of outcomes.

The results of *t*-test showed no statistically significant relationships between gender and the five different domains (*P > 0.05*). However, significant relationships were found between the cities where FPs worked and their mean scores in the domains of contracts and regulations, and community involvement (*P < 0.05*). However, the relationship was not significant in the domains of management and performance (*P > 0.05*).

In a previous study by Hafezi *et al.*, the highest and lowest mean scores were related to performance (34.37) and community involvement,[9] respectively.[8]

A study published by Iran's Ministry of Health, Treatment, and Medical Education showed that 65% of physicians were not satisfied with their payment and 52% were not satisfied with performance-based payment and requested changes in their payments. This can have a significant impact on physicians’ performance. In this case, due attention should be paid to payment mechanism, which plays a significant role in service providers’ behavior. To achieve the optimal condition in FP program, maxed payment method should be used.[10] Of course, financial investment without regard to efficiency is a waste of resources and can even lead to serious complications in the health system. Despite the need for more investment in health-care systems of poor countries, the efficiency of those systems must first be promoted so that individuals’ health is enhanced significantly.[13] In Afkar's study on health service providers' attitudes, the most important weakness was physicians' low salary.[14]

The findings of the present study indicated that the FPs gained low mean scores in the domain of management. It should be noted that they had not passed management courses during their academic studies and had not received the training required for management. Therefore, as mentioned by Martin, necessary modifications have to be made in this area in the program.[11] Management training courses are needed to maintain and improve the competence (i.e., a combination of knowledge, skills, and attitude) of health-care teams in the related domains.

**Table 1: The mean scores of family physicians in five different domains**

| Domains                  | Mean score | SD  | Minimum | Maximum |
|--------------------------|------------|-----|---------|---------|
| Management               | 17.29      | 1.87|         | 12      |
| Performance              | 18.11      | 3.82|         | 11      |
| Contract and regulations | 19.49      | 3.18|         | 14      |
| Community participation  | 3.93       | 0.81|         | 2       |
| Outcomes                 | 23.52      | 3.04|         | 15      |
| Total                    | 86.44      | 9.29|         | 55      | 100 |

**Table 2: The correlation among the mean scores of five different domains**

| Domain                  | Performance | Contract and regulations | Community participation | Outcomes | Total  |
|-------------------------|-------------|--------------------------|-------------------------|----------|--------|
| Management              | *r*-Value         | 0.573*                   | 0.513*                  | 0.311*   | 0.214* |
| Performance             | *r*-Value         | 1                        | 0.448*                  | 0.272*   | 0.389* |
| Contract and regulations| *r*-Value         | -                        | 1                       | 0.193**  | 0.229* |
| Community participation | *r*-Value         | -                        | -                       | 1        | 0.297* |
| Outcomes                | *r*-Value         | -                        | -                       | -        | 1      | 0.638* |

*P < 0.05, **P < 0.01*
In Hafezi’s study, satisfaction of individuals and personnel with FPs and health-care teams was more than 95%. Nonetheless, Khiyabani et al. found that individuals were 36% satisfied with FPs.

The results of the study by Afkar revealed that from the perspective of service recipients, the strengths of FP program included reduced treatment costs, free services, and easy access to physicians. On the other hand, its weaknesses included poor performance of hospitals and lack of service delivery by hospitals on 24/7 basis.

The findings of the research by Azizi showed that when asked to rate their satisfaction with various aspects of FPs’ performance, 9.47%, 20.04%, 33.09%, 15.12%, and 22.28% of rural people selected very high, high, medium, low, and very low, respectively. People's satisfaction can be attributed to full-time presence of health-care teams, keeping health records, better and more effective care, reduced health-care costs, and easier access to physicians and pharmacists. On the other hand, their dissatisfaction can be due to lack of trust in FPs and restrictions in FPs’ prescriptions.

The current study findings revealed statistically significant differences among different cities with respect to community involvement rates. Accordingly, the lowest score was related to Zarrindasht, while the highest score belonged to Grash and Rustam. Generally, rural health centers have more contact with people and rural councils and, thus, can involve people in elimination of health problems in the related area. As a result, cities with more rural health centers have better performance in community involvement.

Our study findings also demonstrated statistically significant differences among different cities regarding the mean score of “contract” domain. This can be attributed to the wide variation among the cities concerning salaries and welfare benefits for physicians. These results are not consistent with those obtained by Hafezi et al. in Yazd, except for the domain of community involvement.

However, our results indicated no significant differences among the cities regarding the total score of the questionnaire, which is not in agreement with the findings of similar studies. In this respect, the highest and lowest scores belonged to Khonj (99) and Zarrindasht (55), respectively. Such a big difference might be due to the cultural context of Khonj, its people's high levels of social solidarity, their desire for community involvement, their frequent travels to countries in the Persian Gulf area, and their higher familiarity with social affairs.

### Conclusion

If FP is considered to be one of the main factors in the health pyramid and various levels of this pyramid are evaluated comprehensively with higher focus on rural health centers, rural FP program can proceed with a better order and lower problems. Of course, this depends on promotion of public awareness and public involvement in health care. Compliance with referral rules and accountability in this area can also help expand the FP program. In order to improve services, all problems and shortages of health-care centers should be documented so that they will be easier to prioritize. Moreover, in order to solve the health problems in this area, planning should be done for current processes in health centers, evaluation of health team members, control of expenditures and incomes, provision of support for units and activities, etc. To make such planning more accurate and principled, training workshops and courses are suggested to be held for physicians to improve their performance in all areas.

### Table 3: The mean scores of various domains based on gender

| Domains                  | Male Mean±SD | Female Mean±SD | P    |
|--------------------------|--------------|----------------|------|
| Management               | 17.8±1.56    | 16.89±2.02     | 0.583|
| Performance              | 22.09±3.66   | 22.13±4.00     | 0.966|
| Contract and regulations | 19.5±3.39    | 19.48±3.08     | 0.985|
| Community participation  | 4.06±0.76    | 3.83±0.84      | 0.342|
| Outcomes                 | 23.73±2.29   | 23.36±3.54     | 0.676|
| Total                    | 87.37±8.51   | 85.73±9.93     | 0.537|

### Table 4: The mean scores of five different domains based on city

| Cities/Domains | Management | Performance | Contract and regulations | Community participation | Outcomes | Total |
|----------------|------------|-------------|--------------------------|-------------------------|----------|-------|
| Lar            | 17.2±2.38  | 23.5±2.92   | 19.75±2.1                | 4.38±0.051              | 24.38±1.76| 89.12±6.17|
| Darab          | 17.8±1.16  | 21±4.28     | 17±1.7                   | 3.5±0.83                | 22.63±2.71| 82.16±6.04|
| Zarrindasht    | 12±0       | 11±0        | 15±0                     | 2±0                     | 15±0     | 55±0  |
| Rostam         | 18±0.4     | 24.5±1.22   | 23.3±1.96                | 5±0                     | 26±0     | 98.33±2.58|
| Grash          | 15±0       | 24±0        | 14±0                     | 5±0                     | 23±0     | 81±0  |
| Bavanat        | 15±0       | 20±0        | 15±0                     | 3±0                     | 23±0     | 76±0  |
| Neyriz         | 17±1.4     | 24.5±0.7    | 22±4.24                  | 3.5±2.0                 | 22±5.6   | 89±1.41|
| Khonj          | 19±0       | 25±0        | 25±0                     | 4±0                     | 26±0     | 99±0  |
| Eghlid         | 17±0       | 24±0        | 22±0                     | 5±0                     | 21±0     | 89±0  |
| Shiraz         | 17.8±1.64  | 24±1        | 20.4±3.28                | 3.6±0.54                | 22±2.91  | 87.8±4.76|
| Mamasani       | 16.6±2.15  | 22.37±2.17  | 19±2.39                  | 3.6±0.51                | 25.31±1.33| 87±3.77|
| Ghir           | 17.75±0.95 | 20.25±1.25  | 17.5±2.08                | 4±0.81                  | 25±1.41  | 84.5±0.57|
Furthermore, physicians should increase the communication between health teams and public and local authorities to solve the problems of community involvement in health care. They can also use rural health communicators to increase satisfaction. Last but not the least, distribution of payments among health centers personnel should be fair and performance-based.

One of the strengths of this study was participation of FPs in rural areas of Fars province that do important activities in the most context-specific level of services. On the other hand, the weakness of this study was its small sample size ($n = 52$) that could limit the generalizability of the results to larger societies.

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**Conflicts of interest**

There are no conflicts of interest.

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