Original Article

Five Years after Implementation of Urban Family Physician Program in Fars Province of Iran: Are People's Knowledge and Practice Satisfactory?

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Abstract

Introduction: Urban family physician program (UFPP) was launched in Fars province of Iran in 2012. We aimed to assess the knowledge and practice of people toward this 5-year-old program. **Methods:** In this population-based study, through a multistage random sampling from 6 cities of Fars province, 1350 people older than 18 years were interviewed. For data collection, a questionnaire consisting of sociodemographic characteristics and items about knowledge and practice toward UFPP was used. **Results:** The mean age of the interviewees was 42.4 ± 14.2 years; male (674; 49.9%)-to-female (651; 48.2%) ratio was 1.03. Mean score of knowledge was 4.2 ± 1.7 (out of 14), while 961 (71.1%) had <50% of the desirable knowledge. Mean score of practice was 4.4 ± 1.3 (out of 9), while only 443 (32.8%) had a good performance toward this program. Knowledge and practice did not show a significant correlation (r = 0.06, P = 0.05). Among cities, the highest and the lowest mean of knowledge belonged to Pasargad (5.6 ± 2.1) and Lar (3.0 ± 1.0) (P < 0.001), respectively. Pasargad (4.8 ± 1.4) had also the highest level of practice compared to Farashband (3.8 ± 1.4) which had the lowest score (P < 0.001). Multivariable analysis showed that supplemental insurance coverage (odds ratio [OR] = 2.5, %95 confidence interval [CI]: 1.6–3.9), female gender (OR = 1.9, %95 CI: 1.2–2.9) and higher level of education (OR = 1.7, %95 CI: 1.1–2.5) were the significant determinants of knowledge, while practice in those who were not covered by supplemental insurance was better (OR = 1.6, 95% CI: 1.2-2.5). **Conclusions:** After 5 years of implementation of UFPP, knowledge and practice of people toward UFPP are not satisfactory. This finding calls for a serious revision in some aspects of UFFP.

Keywords: *Family physician program, knowledge, practice, urban population*

Introduction

According to the World Organization of Family Doctors (WONCA) Europe, family physicians (FP) are primarily responsible for the comprehensive and continuing care provision to everyone irrespective of age, sex, and illness.[1] In other words, FP program (FPP) is a comprehensive health program with a preventive, continuing, and cost-effective approach, to facilitate providing health-care services.[2,3] WONCA supports FPP in many countries to achieve primary health-care targets.[2] Accordingly, many countries have positive and negative experiences toward implementation of this program.[4] In Iran, FPP was launched in rural areas and cities with a population <20,000 in 2005.[5,6] Following that and due to Iran's fifth development program (I5DP) in health sector[7] and considering positive experiences from FPP in rural areas,[8] urban FPP (UFPP) was planned and has been piloted in Fars and Mazandaran provinces of Iran, since 2012.[5] According to evidence, knowledge and practice of people toward FPP have a key role in achieving its goals.[9,10] The knowledge of people toward rural FPP was poor to moderate in >80% of participants in studies.[9,10] Up to the best of our knowledge, there is no report about knowledge and practice of people toward UFPP at province level. Therefore, this population-based study was the first study to assess the knowledge and practice of people of Fars province toward UFPP after 5 years of its implementation.

Methods

Study design and participants

This population-based study, through a multistage random sampling, was conducted in Fars province of Iran from October 2016 to January 2017. The 4.8 million population of Fars

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province is distributed across 29 cities with a range of population from 50,000 to 18,00,000. Fars province has 4.5 million population and 1230 FPs. The sample size was calculated as 1000, expected level of knowledge of people toward FPP as 10%, dropout rate of 30%, design effect of 2, precision of 5% and a confidence level of 95%. Multistage (stratified, proportional, and cluster) randomized sampling was used. Six cities were selected by simple randomization, including 3 cities with population over 2,00,000 (Lar, Abadeh, and Kazeroon), 2 cities with population between 80,000 and 2,00,000 (Estahban and Farashband) and one city with population < 8,00,000 (Pasargad). In the next step, the proportion of sample in each city was determined as Lar 300, Abadeh 150, Kazeroon 330, Estahban 100, Farashband 70, and Pasargad 50). Then, each city was divided according to postal code areas, and several clusters were selected by randomization in each area. Afterward, head clusters were chosen by simple randomization and 10 postal codes in each head cluster were selected. In the following, in each address, the breadwinner was asked to answer face-to-face interview questions. In cases where the breadwinner was absent, the second oldest person above 18 years was asked to participate in the study and in cases where we could not interview anyone, we replaced the postal code by the next one. Those who were not willing to participate in the study or were living in the city for < 2 years were excluded from the study.

Study instruments and variables assessment

The questionnaire included a brief introductory paragraph about this study emphasizing voluntary participation and preserving privacy.

Demographic and socioeconomic information was collected including age, gender, marital status, level of education, position in the family employment status, monthly income, UFFP coverage, and coverage by main and supplementary insurance systems. The questionnaire also contained questions about knowledge and practice of people toward UFFP program. In the knowledge section, we asked 14 questions under the topics of choosing and changing the FP, condition of clinic, FP working hours in weekdays and weekends, place of referral or the phone number for complaints or getting information, electronic record form, and visit charge. Nine questions were also allocated to practice of people including referring to FPs and non-FPs, phone consultation with FPs and practice in the case of complaints, need to get information or in the case that the FP is absent. Reliability (Cronbach's alpha for knowledge section = 0.65 and Cronbach's alpha for practice section = 0.63) and validity (UFFP managers' opinion were applied, and indeed a kind of expert opinion was the basis to provide content validity) of the questionnaire was measured and reported by another study.[11]

Statistical analysis

All data were entered into IBM SPSS software version 20 (SPSS, Chicago, IL, USA) statistics 20. The accuracy of data entry in the SPSS software was checked. Descriptive analysis (mean, standard deviation, median, maximum, minimum, and frequency), independent *t*-test (for comparing two groups of continuous variables) and Chi-square (for comparing categorical variables), Pearson correlation (for detection the correlation between two continuous variables), and logistic regression analysis (Backward Wald) for multivariable analysis were used. Acceptable or satisfactory level of knowledge and practice was considered ≥50% of total scores and the $P < 0.05$ were considered statistically significant.

Ethics statement

Voluntary participation in this study, designing an anonymous questionnaire, possibility of access to researchers of this study, and preserving privacy in all aspects of research were among ethical aspects of the study. Furthermore, the research protocol was approved by the Ethics Committee of University of Medical Sciences, Iran, by registry number 1394165.

Results

The mean age of 1352 participants in this study was 42.4 ± 14.2 years, while 651 (48.2%) were female, 1075 (79.5%) were married, 382 (28.3%) held a university degree, and 657 (48.6%) were employed. Moreover, 620 (45.9%) of interviewees were breadwinners of their families and their mean reported income was 340 ± 235 dollars/month. One thousand and three hundred four (96.4%) were under the coverage of one of the main insurance systems and only 266 (19.7%) had supplemental insurance coverage. The total coverage of UFFP was 1281 (94.7%) [Table 1]. Mean score of knowledge about UFPP was 4.2 ± 1.7 (out of 14) and 961 (71.1%) had low level of knowledge about this program. Eight hundred and fourteen (60.2%) said that FP selection should be based on the nearest address. However, 73 (5.4%) knew that every family member over 18 years can select FP by him/herself, 610 (45.1%) knew that every person can change his/her FP, and 136 (10.1%) correctly answered that FP can be changed twice a year. Sixty-five (4.8%) had correct information that FPs should provide both preventive and medical services for their clients and 27 (2%) knew about the phone number of UFFP's investigation center. Sixty-one (4.5%) also knew about electronic health record and 488 (36.1%) knew that the FP should fill the files by her/himself. About 942 (69.7%) explained about the conditions of FPs' clinics should have and 139 (10.3%) had knowledge about where they should refer if their FPs were absent. Forty-nine (3.6%) said that FP visit should be free of charge [Table 2].

Univariate analysis showed that knowledge about UFPP was higher in females (4.5 ± 1.8) comparing to

Table 1: Sociodemographic characteristics of people in a study to assess their knowledge and practice toward urban family physician program in Fars province of Iran

Item		Item	
Age (year)		Insurance coverage *n* (%)	
Mean±SD	42.4±14.2	Yes	1304 (96.4)
Minimum-maximum	18-90	No	23 (1.7)
Gender *n* (%)		Supplemental insurance *n* (%)	
Male	676 (49.9)	Yes	266 (19.7)
Female	651 (48.2)	No	1060 (78.4)
Level of education *n* (%)		FPP coverage *n* (%)	
≤12 years	944 (69.8)	Yes	1281 (94.7)
>12 years	382 (28.3)	No	44 (3.3)
Marital status *n* (%)		City of study *n* (%)	
Single	252 (18.6)	Lar	496 (36.7)
Married	1075 (79.5)	Kazeroon	319 (23.6)
Job status *n* (%)		Abadeh	180 (13.3)
Employed	667 (49.3)	Farashband	129 (9.5)
Unemployed	657 (48.6)	Estahban	129 (9.5)
Income (dollars/monthly)		Pasargad	74 (5.5)
Mean±SD	340±235		

FPP=Family physician program, SD=Standard deviation

males (4 ± 1.6) ($P < 0.001$), people with an academic degree ($P < 0.001$), unemployed people ($P = 0.004$), and those covered by supplemental insurance system ($P < 0.001$). Multivariable logistic regression showed that coverage by supplemental insurance (odds ratio [OR] = 2.5, 95% confidence interval [CI]: 1.6–3.9), being female (OR = 1.9, 95% CI: 1.2–2.9), and higher level of education (OR = 1.7, 95% CI: 1.1–2.5) had a significant effect on knowledge of people toward UFFP [Table 3].

Moreover, regarding studied cities, the highest mean score of knowledge belonged to Pasargad (5.6 ± 2.1), Farashband (5.6 ± 2.0), and Estahban (5.5 ± 1.5) and the lowest mean score of knowledge belonged to Lar (3.0 ± 1.0) ($P < 0.001$). Mean score of Knowledge in Kazeron and Abadeh was 4.8 ± 1.5 and 4.81 ± 1.5, respectively.

On the other hand, mean score of practice toward UFPP was 4.4 ± 1.3 (out of 9), while only 443 (32.8%) had a good performance about this program. Of 1079 (79.8%) that had become sick during 1 year to this study, 982 (72.7%) had at least one time visited their FPs and 530 (50.4%) had at least one time visited physicians out of UFPP. The median number of referrals to FPs was three, and the total person-referrals to FPs was 5366, while these figures for referrals to physicians out of UFPP were 0 and 1860 during 1 year to this study, respectively. Moreover, our findings indicated that 66 (4.9%) had phone consultation with their FPs, while 399 (29.5%) and 458 (33.9%) did correctly in case of any need to receiving information or reporting complaint(s) about UFPP, respectively. In the absence of FPs (for example in the holiday times), 804 (59.9%) referred correctly to alternative physicians that have already been introduced [Table 2].

Univariate analysis showed that people covered by UFPP ($P = 0.02$), those who were not under the coverage of supplemental insurance ($P < 0.001$), younger age groups ($P = 0.01$), and employed people ($P = 0.03$) had a better practice toward this program. Practice score of males (4.4 ± 1.3) and females (4.3 ± 1.3) were not significantly different ($P = 0.4$). However, in multivariable logistic regression, the only factor that was associated with practice toward UFPP was supplemental insurance coverage (OR = 0.59, 95% CI: 0.4–0.8) [Table 3].

Among the studied cities, Pasargad (4.8 ± 1.4) and Lar (4.7 ± 1.3) had the highest mean score for practice, while Kazeroon (3.9 ± 1.0) and Farashband (3.8 ± 1.4) had the lowest mean score for practice ($P < 0.001$). Practice scores of Estahban and Abadeh were 4.13 ± 1.1 and 4.25 ± 1.2, respectively. Our analysis also remarked that knowledge about UFFP had no significant correlation with their performance toward this program ($r = 0.06$, $P = 0.05$).

Discussion

After 5 years of implementation of UFPP in Fars province of Iran, our findings showed that despite 95% coverage, nearly two out of three people did not have a satisfactory level of knowledge toward this program. On the other hand, only one out of three had an acceptable level of practice toward this program. Furthermore, during the 1 year to this study, one out of two persons at least one time visited physicians who were out of UFPP and one of five people did not visit her/his FPs even one time in that year. Furthermore, only one out of 20 people knew that FPs should provide both preventive and clinical services.

This study showed that knowledge of people toward UFFP was nearly two times in females, in those with an academic degree and in those who were under the coverage of supplementary insurance. We believe that most of the women who participated in this study were homemakers and had more time to know about this program. Similarly, more educated people had a better understanding of UFFP and those who were under coverage of supplemental insurance had a higher level of knowledge about this program due to the need for financial supports for their diseases. Alidosti *et al*. concluded that knowledge of rural population toward FPP in shahrekord, west of Iran, was poor to moderate in 84.4% of participants, a significant negative correlation was existed between knowledge and age and a positive association was existed between knowledge and education.[10] Another survey in Shiraz showed that 89.2% of people had

Table 2: Knowledge and practice about urban family physician program in people of Fars province of Iran

Item	Question	*n* (%)	Question	*n* (%)
Knowledge	FP* should be chosen by		Do you know about electronic health record?	
	Family breadwinner	861 (63.7)	Yes	61 (4.5)
	Every person of family for him/herself	73 (5.4)	No	1253 (92.6)
	Health system	312 (23.1)	Filling the information record in the FP office should be done by	
	I do not know	47 (3.5)	FP	488 (36.1)
	Choosing of FP should be based on		FP crews	368 (27.2)
	Proximity to place of living	814 (60.2)	I do not know	193 (14.3)
	Proximity to workplace	49 (3.6)	Is it possible legally to change your FP?	
	It is no matter to be closer to place of living or workplace	285 (21.1)	Yes	610 (45.1)
	I do not know	96 (7.1)	No	234 (17.3)
	Responsibilities of FP should include		How many times is it possible to change your FP annually?	
	Preventive care	2 (0.1)	0 time	4 (0.3)
	Medical care	743 (55)	1 time	216 (16)
	Both preventive and medical cares	65 (4.8)	2 times	136 (10.1)
	I do not know	208 (15.4)	≥3 times	59 (4.4)
			I don't know	11 (0.9)
	FP working time in nonholidays may be at		In the absence of your FP. Where should you refer if have any need?	
	Afternoon	3 (0.2)	I will refer to substituted FP	139 (10.3)
	Both morning and afternoon	440 (32.5)	Other answers	50 (3.7)
	I do not know	874 (64.7)	No	1111 (82.2)
	FP working time in holidays may be at		What is the phone number of FP handing unit	
	Morning	1 (0.1)	Correct	27 (2)
	Afternoon	1 (0.1)	Incorrect	4 (0.3)
	Both morning and afternoon	116 (8.6)	I do not know	1118 (82.7)
	I do not know	1200 (88.7)		
Practice	Did you become sick during the previous year?		How far is your FP office from your home?	
	Yes	1079 (79.8)	<1 km	932 (68.9)
	No	213 (15.8)	>1 km	336 (24.9)
	If you got sick during the previous year, how many times was it?		I don't know	48 (3.5)
	Mean±SD	4.5±4.8	Did you have any phone counseling with your FP during the previous year?	
	Median	3	Yes	66 (4.9)
	How many times did you refer to your FP during the previous year?		No	1203 (89)
	Mean±SD	4.3±5.0	No answer	47 (3.5)
	Median	3		
	How many times did you refer to physicians, who were outside of FP program, during the previous year?			
	Mean±SD	1.5±2.8		
	Median	0		

*FP=Family physician, SD=Standard deviation

a low level of knowledge about UFPP and knowledge was correlated positively with being under the coverage of FPP and being covered by one of the main insurance systems.[11] In our study, the level of practice was nearly half in people who were under the coverage supplemental insurance. It may be due to a kind of self-assurance about financial supportive care by supplemental insurance in the first group and lack of need to FPP. Honarvar *et al*. in their study found that 74%

Table 3: Multivariable logistic regression model for the knowledge and practice of people toward urban family physician program in Fars province of Iran

	Item	ß	OR*	95% CI	*P*
knowledge	Supplementary Insurance	0.93	2.5	1.6-3.9	<0.001
	Gender	0.66	1.9	1.2-2.9	0.003
	Education (>12 years)	0.53	1.7	1.1-2.5	0.01
	Age	−0.01	0.98	0.97-1	0.11
	Job status	−0.37	0.96	0.62-1.4	0.86
Practice	Supplementary insurance	−0.5	0.59	0.4-0.8	0.005
	Age	0.007	0.99	0.98-1	0.15

*OR Compares group with acceptable level of knowledge and practice with nonacceptable counterpart. CI: Confidence interval, OR: Odds ratio

of participants had poor performance toward UFFP, and this index was correlated positively with being under coverage of this program and having higher than 1000$ monthly income.[11] In our study, we found that practice and knowledge of people toward UFPP had no significant correlation with each other. This finding is in line with some studies that mentioned more knowledge did not necessarily cause a better performance in FPP.[11-13] These results show that strategies for increasing people's level of knowledge toward UFFP should be revised and complemented by an improved level of performance to achieve the goals of this program. As a limitation, we did not have the baseline level of knowledge and practice of people at the beginning of UFPP. However, the findings of this study can be the baseline for the future studies. We also measured the knowledge and practice of one person in every house and do not know about the knowledge and practice of other households. Instability of Urban family physician (UFP) regulations and guideline prohibited us from having a longtime applicable questionnaire. Moreover, it is recommended to conduct another study to show the causes of visiting physicians out of UFFP by those who are already under the coverage of UFPP.

Conclusions

UFFP of Iran is in infantile stage. Coverage has reached to an acceptable level, but achievement of targets needs a multidimensional and comprehensive approach in different aspects. As one of the priorities, paying attention to increasing knowledge and practice of people toward this program should be regarded, while the strategies that have been used so should be revised and changed according to observed weaknesses.

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Conflicts of interest

There are no conflicts of interest.

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References

1. The European Definition of General Practice Family Medicine Wonca Europe 2011 edition. Available from: http://www.woncaeuropeorg/sites/default/files/documents/Definition%203rd%20ed%202011%20with%20revised%20wonca%20treepdf. [Last accessed on 2017 Apr 23].
2. World Organization of Family Doctors. WONCA in Brief; 2017. Available from: http://www.globalfamilydoctor.com/AboutWonca/briefaspx. [Last accessed on 2017 Apr 23].
3. American Academy of Family Physicians. Definition of Family Physician; 2017. Available from: http://www.aafp.org/about/policies/all/family-medicine-definitionhtml. [Last accessed on 2017 Apr 23].
4. World Organization of Family Doctors. WONCA Annual Report July 2015-June 2016; 2004. Available from: http://www.globalfamilydoctor.com/AboutWonca/Annualreportaspx. [Last accessed on 2017 Apr 23].
5. Honarvar B, Lankarani KB, Ghahramani S, Akbari M, Tabrizi R, Bagheri Z, *et al.* Satisfaction and dissatisfaction toward urban family physician program: A Population based study in Shiraz, Southern Iran. Int J Prev Med 2016;7:3.
6. Kor EM, Rashidian A, Hosseini M, Azar FE, Arab M. Acceptability of the urban family medicine project among physicians: A Cross-sectional study of medical offices, Iran. Glob J Health Sci 2016;8:56295.
7. Islamic Parliament of Iran. Law of the Fifth Economic, Social and Cultural Development Plan of the Islamic Republic of Iran, 2010-2015 (1389-1394). Available from: http://www.rcmajlisir/fa/law/show/790196. [Last accessed on 2017 Apr 23].
8. Saber AA, Jafar-Sadegh T, Mohammad M, Mohammad NB, Amin D, Mohammad S. 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;4:182-95.
9. Motlagh ME, Nasrolahpour SS, Ashrafian AH, Kabir MJ, Shabestani MA, Nahvijoui A, *et al*. Familiarity of rural people engaged in rural assurance towards principles, facilities, and conditions of rural assurance in family physician (FP) program in northern provinces of Iran-2008. J North Khorasan Univ Med Sci 2010;2:33-8.
10. Alidosti M, Tavassoli E, Khadivi R, Sharifirad GR. A survey on knowledge and attitudes of rural population towards the family physician program in Shahr-e-kord. Health Inform Manag 2011;7:629-36.
11. Honarvar B, Lankarani KB, Rostami S, Honarvar F, Akbarzadeh A, Odoomi N, *et al.* Knowledge and practice of people toward their rights in urban family physician program: A population-based study in Shiraz, Southern Iran. Int J Prev Med 2015;6:46.
12. Haines A, Kuruvilla S, Borchert M. Bridging the implementation gap between knowledge and action for health. Bull World Health Organ 2004;82:724-31.
13. Cochrane LJ, Olson CA, Murray S, Dupuis M, Tooman T, Hayes S, *et al.* Gaps between knowing and doing: Understanding and assessing the barriers to optimal health care. J Contin Educ Health Prof 2007;27:94-102.