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Knowledge and Practice of People toward their Rights in Urban Family Physician Program: A Population-Based Study in Shiraz, Southern Iran

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ABSTRACT

Background: Urban family physician program has been launched as a pilot in Fars and Mazandaran provinces of Iran since 2012. Attitudes of policy makers and people toward urban family physician program have become challenging. This study shows what people know and practice toward this program.

Methods: This cross-sectional population-based study was conducted by a multistage randomized sampling in Shiraz, Southern Iran. Knowledge and practice of adults toward urban family physician program were queried through filing the questionnaires. Single and multiple variable analyzes of data were performed.

Results: Participation rate was 1257 of 1382 (90.9%), and the mean age of the respondents was 38.1 ± 13.2 years. Of 1257, 634 (50.4%) were men and 882 (70.2%) were married. Peoples' total knowledge toward urban family physician program was 5 ± 2.7 of 19, showed that 1121 (89.2%) had a low level of knowledge. This was correlated positively and in order to being under coverage of this program ($P < 0.001$), being under coverage of one of the main insurance systems ($P = 0.04$) and being married ($P = 0.002$). The mean score of people's practice toward the program was 2.3 ± 0.9 of total score 7, showed that 942 (74%) had poor performance, and it was correlated positively and in order to being under coverage of this program ($P < 0.001$) and having higher than 1000$ monthly income ($P = 0.004$). Correlation of people's knowledge and practice toward the program was 24%.

Conclusions: Current evidences show a low level of knowledge, poor practice and weak correlation of knowledge-practice of people toward urban family physician program.

Keywords: Family physician program, knowledge, people, population, practice, right

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INTRODUCTION

Iran by a population of 78 million, 30 provinces, 400 districts and more than 65,000 villages comprises of a 65% of the population that are living in urban areas.

According to the 4th 5-year national development plan the family physician reform should be extended to the

whole country.[1,2] Therefore, family physician program was launched for the first time in 2005 in rural areas and cities with a population below 20,000.[3] After that and toward extension of this program in urban areas, two provinces of Fars, in the south of Iran with a population around 4.4 million, and Mazandaran, in the North of Iran with an approximate population of 3 million, were selected for pilot this program from 8th of July 2012.

Similar to any other project, family physician program has its advantage and disadvantages which have to be evaluated in order to get an optimum result.[4,5]

This study as the first population-based study in this issue, aimed to measure the knowledge and practice of people lives in Shiraz toward family physician program to present an evidenced-based feedback to national and regional policy makers to improve planning and management of this program.

METHODS

This cross-sectional, questionnaire-based study was conducted from October to December 2014 in Shiraz, South of the Iran. The 1.5 million population of Shiraz is distributed in seven main postal zones. The sample size was calculated as 1382, supposed level of knowledge of people toward family physician program as 50%, dropout rate of 20%, design effect of 3, 5% precision level and a confidence level of 95%. Multistage randomized and proportional to size sampling was used. In each address, one person who was at least 18 years and was a resident at Shiraz for at least 2 years was asked to fill the questionnaire. The coded anonymous questionnaire comprised of a brief introductory paragraph about title, aims identification and phone call number of the executor of this study, followed by consent form that emphasized on voluntary participation and keeping confidentiality. They asked about their demographic and socioeconomic information including age, gender, level of education, marital status, job status, position in the family (as breadwinner of family or other family member), number of family members and monthly income. Being under the coverage of main and supplementary insurance systems and also family physician program was queried. The questionnaire contained questions about knowledge and items about practice of people regarding urban family physician program. In the knowledge section, participants were asked about choosing and changing family physician, family physician addresses, tasks of family physician, work time of family physician in holidays and nonholidays, address of reference and proper action in cases of having complaints or need to more information, electronic record form, referral form and visit-fee. In the practice section, reference to family physician and nonfamily physician, waiting time in the family physician's waiting room, phone counseling with family physician, average of payment upon each referral to family physician, having problem in obtaining prescribed drugs by family physician, having problem in accessing the specialist family physician and being interviewed and examined completely by family physician in each visit were queried. The questionnaire was validated by two experts in family physician program and its reliability according to Cronbach's alpha was calculated as 0.64 through pilot testing of the questionnaire. All data were entered into SPSS version 20 software (SPSS, Chicago, IL, USA). The accuracy of data entry was ensured by randomly selecting and checking completed questionnaires against their corresponding data in the SPSS software. Chi-squared, *t*-tests, Pearson correlation and stepwise linear regression model were used. $P < 0.05$ were considered significant.

Ethics statement

Voluntary participation in this study, designing of an anonymous questionnaire, possibility of access to executives of this study via two exclusive phone lines and keeping confidentiality in all aspects of research were some ethical aspects that were applied. Furthermore, the research protocol as described here was approved by the Ethics Committee of the Health Policy Research Center affiliated with Shiraz University of Medical Sciences.

RESULTS

Participation rate of participants was 1257 of 1382 (90.9%) and 997 (79.3%) filled the questionnaire at home addresses [Table 1]. Mean age of participants was 38.1 ± 13.2 years and of total 1257, 634 (50.4%) were men, 882 (70.2%) were married and 474 (37.7%) had associate or bachelor degree of education [Table 1].

Six hundred seventeen (49.1%) had job with mean income 1000$/month [Table 1]. The mean family member was 3.9 ± 1.5 and 539 (42.9%) were breadwinners of their families. One thousand hundred nineteen (89%) and 479 (38.1%) were under the coverage of one of the main and supplementary insurance systems respectively [Table 1].

One thousand fifty-eight (84.1%) of respondents and 1012 (80.5%) of their families members were under the coverage of urban family physician program [Table 1].

Peoples' total knowledge toward urban family physician program was 5 ± 2.7 of 19, showed that 1121 (89.2%) had a low level of knowledge [Table 2].

Of total, 879 (69.9%) of people knew about family physician choosing rules but 880 (69.9%) did not know that, it is possible to change their family physician

Table 1: Social and demographic characteristics of participants in the population-based study aimed to determine correlates of knowledge and practice toward urban family physician program in Shiraz, Southern Iran (*n*=1257)

Characteristics	Amount or *n* (%) of total	Characteristics	Amount or *n* (%) of total
Age (year)		Median	4
Mean±SD	38.1±13.2	Minimum	0
Median	35	Maximum	13
Minimum-maximum	18–90	95% CI	3.83±4
95% CI	37.4±38.9	Position of respondent in family	
Gender		Breadwinner	539 (42.9)
Male	634 (50.4)	Other family member	651 (51.8)
Female	540 (43)	Living alone	32 (2.5)
χ^{2*} (*P* value)	7.5 (0.006)	χ^{2*} (*P* value)	534.1 (<0.001)
Marital status		Type of main insurance coverage	
Single	295 (23.5)	Social security	764 (60.8)
Married	882 (70.2)	Iran health	262 (20.8)
Divorced	26 (2.1)	Ministry of defense	47 (3.7)
Widowed	25 (2)	Others	46 (3.7)
χ^{2*} (*P* value)	1593.6 (<0.001)	No insurance	108 (8.6)
Education		χ^{2*} (*P* value)	1496.4 (<0.001)
Illiterate	34 (2.7)	Supplementary insurance coverage	
Primary school	92 (7.3)	Yes	479 (38.1)
Secondary school	167 (13.3)	No	743 (59.1)
High school	402 (32)	χ^{2*} (*P* value)	57 (<0.001)
Associate or Bachelor degree	474 (37.7)	Place of inquiry	
Master or Ph.D. degree	55 (4.4)	Home	997 (79.3)
χ^{2*} (*P* value)	868.2 (<0.001)	Work place	193 (15.4)
Job status		χ^{2*} (*P* value)	543.2 (<0.001)
Self-employed	405 (32.2)	Family physician coverage	
Employed	212 (16.9)	Yes	1058 (84.1)
Jobless†	514 (40.9)	No	131 (10.4)
χ^{2*} (*P* value)	124 (<0.001)	Unclear	68 (5.4)
Income per month ($)		χ^{2*} (*P* value)	1159.1 (<0.001)
Mean±SD	1065.4±1232.7	Family physician coverage of family's members	
Median	800	Yes	1012 (80.5)
Minimum-maximum	0–20,000	No	165 (13.1)
95% CI	961±1169	Un-clear	80 (6.3)
Family size		χ^{2*} (*P* value)	2809.8 (<0.001)
Mean±SD	3.9±1.5		

*Chi-squared test, †Including homemakers, students, soldiers. SD=Standard deviation, CI=Confidence interval

and 59 (4.6%) stated that family physicians should present both preventive and medical services to their clients. Four hundred seventy-fours (37.7%) knew about their family physicians' substitutes and 58 (4.6%) were informed about where they should refer in the absence of their family physician. Three hundred and fifty-three (28%) and 2 (0.1%) knew correctly about how much they should pay to general and specialist family physician in each visit, respectively. Of 1257, 22 (1.8%) knew that where they should refer if need any information or have any complaint about family physician program while 1173 (93.2%) did not know or could not correctly tell the 4 digits phone number of unit responding to complaints about family physician program. A few of people were informed about referral form (233; 18.5%), about what they should do with filled referral forms (154; 12.3%) and about electronic health record (11; 0.8%). Family physician office distance to home was less that 1 km in 538 (42.8%) of the responders [Table 2].

Univariate analysis showed that knowledge toward family physician program was lower in younger than 30 and older than 60 years people, in males, in singles, in whom with <8 years of education, in whom that were not under

Table 2: Knowledge of people toward urban family physician program in Shiraz, southern Iran (*n*=1257)

Question	*n* (%)	χ^2 (*P* value)	Question	*n* (%)	χ^2 (*P* value)
Family physician should be chosen by			Do you know about referral form?		
Family breadwinner	665 (52.9)	585 (<0.001)	Yes-completely	233 (18.5)	1019.5 (<0.001)
Every person of family for him/herself	199 (15.8)		Yes-incompletely	78 (6.2)	
Health system	97 (7.7)		No	944 (75)	
I do not know	296 (23.5)		Do you know about electronic health record?		
Address of chosen family physician is based on			Yes-completely	11 (0.8)	2407.1 (<0.001)
Proximity to place of living	879 (69.9)	1407.9 (<0.001)	Yes-incompletely	7 (5.5)	
Proximity to workplace	52 (4.1)		No	1239 (98.5)	
It is no matter to be closer to place of living or work place	96 (7.6)		Filling the information record in the family physician office should be done by		
I do not know	230 (18.2)		Family physician	565 (44.9)	200 (<0.001)
Responsibilities of family physician include			Family physician crews	185 (14.7)	
Preventive care	17 (1.3)	1792.1 (<0.001)	I do not know	507 (40.3)	
Medical care	232 (18.4)		What must you do with filled referral form by specialists family physicians?		
Both preventive and medical cares	59 (4.6)		Returning it to my family physician	154 (12.3)	1225.1 (<0.001)
I do not know	949 (75.4)		Other answers	99 (7.9)	
Family physician working time in nonholidays may be at			I do not know	1002 (79.7)	
Morning	57 (4.5)	1011.2 (<0.001)	Is it possible legally to change your family physician?		
Afternoon	43 (3.4)		Yes	377 (29.9)	206.9 (<0.001)
Both morning and afternoon	717 (57)		No	235 (18.6)	
I do not know	437 (34.7)		I do not know	645 (51.3)	
Family physician working time in holidays may be at			How many times is it possible to change your family physician annually?		
Morning	156 (12.4)	679.8 (<0.001)	1 time	96 (7.6)	2186.7 (<0.001)
Afternoon	63 (5)		2 times	93 (7.4)	
Both morning and afternoon	372 (29.5)		≥3 times	37 (2.9)	
I do not know	663 (52.7)		No answer	1031 (82)	
In the absence of your family physician, where should you refer if have any need?			How far is your family physician office from your home?		
I will refer to substituted family physician	58 (4.6)	1169.5 (<0.001)	<1 km	538 (42.8)	220.7 (<0.001)
Other answers	379 (30.1)		More than 1 km	546 (43.4)	
No	1234 (98.2)		I do not know	170 (13.5)	
Do you know about your substituted family physician?			Do you know how much should you pay in every general family physician visit?		
Yes	474 (37.7)	75.9 (<0.001)	Yes	408 (32.5)	154.7 (<0.001)
No	783 (62.3)		No	849 (67.5)	
What is the phone number of family physician's handling unit			Do you know how much should you pay in every specialist family physician visit?		
Correct	84 (6.6)	1843 (<0.001)	Yes	117 (9.3)	832.5 (<0.001)
Incorrect	37 (2.9)		No	1140 (90.6)	
I do not know	1136 (90.3)				

coverage of main or supplementary insurance systems and in whom were not under the coverage of family physician program [Table 3].

Stepwise linear regression model showed that peoples' total knowledge toward their rights in urban family physician program by adjusted R^2 0.18 and constant ß = 8.5 (95% confidence interval [CI] = 7.6–9.4, $P < 0.001$) was in order correlated to being under coverage of urban family physician program (ß = 2, 95% CI = 1.4–2.5, $P < 0.001$), being other family member (s) under the coverage of urban family physician program (ß =1.1,95% CI = 0.7–1.6, $P < 0.001$), being under the

Table 3: Single variable analysis of correlates of knowledge and practice of people toward urban family physician program in Shiraz south of Iran

Characteristic	Knowledge					Practice					
	Mean±SD*	Statistic (*P* value)	Characteristics	Mean±SD	Statistic (*P* value)	Characteristic	Mean±SD†	Statistic (*P* value)	Characteristics	Mean±SD	Statistic (*P* value)
Age (years)			Family size			Age (years)			Family size		
18-29	4.8±2.7	$F=4$, $P=0.003$	≤2	4.7±2.7	$F=0.5$, $P=0.8$	18-29	2.4±0.9	$F=2$, $P=0.05$	≤2	2.2±1	$F=0.5$, $P=0.7$
30-39	5.3±2.6		3-4	5.3±2.6		30-39	2.3±0.9		3-4	2.4±0.9	
40-49	5±2.7		≥5	4.8±2.7		40-49	2.2±0.9		≥5	2.2±0.9	
50-59	5.5±2.8		Position of respondent in the family			50-59	2.4±1		Position of respondent in the family		
≥60	4.6±2.5		Bread winner	5±2.7	$t=0.09$, $P=0.9$	60≤	2.1±1		Bread winner	2.3±1	$t=-1.4$, $P=0.1$
Gender			Other family member	5±2.7		Gender			Other family member	2.3±0.9	
Male	4.9±2.7	$t=-2$, $P=0.03$	Type of main insurance coverage			Male	2.2±0.9	$t=-2$, $P=0.04$	Type of main insurance coverage		
Female	5.2±2.7		Under insurance coverage	5.2±2.6	$t=7.4$, $P<0.001$	Female	2.4±0.9		Under insurance coverage	2.4±0.9	$t=7.1$, $P<0.001$
Marital status			No insurance	3.2±2.6		Marital status			No insurance	1.5±1	
Single	4.4±2.8	$t=-4.9$, $P<0.001$	Supplementary insurance coverage			Single	2.3±0.9	$t=-0.7$, $P=0.4$	Supplementary insurance coverage		
Married	5.3±2.6		Yes	5.2±2.6	$t=2$, $P<0.04$	Married	2.3±0.9		Yes	2.3±0.8	$t=1.1$, $P=0.2$
Education			No	4.9±2.8		Education			No	2.3±1	
≤8 years	4.5±2.6	$F=7.2$, $P=0.001$	Place of inquery			≤8 years	2.3±1	$F=0.8$, $P=0.5$	Place of inquiry		
9-12 years	5.2±2.7		At home	5.1±2.6	$t=2.8$, $P=0.005$	9–12 years	2.3±0.9		At home	2.3±0.9	$t=1.3$, $P=0.1$
>12 years	5.1±2.7		Work place	4.5±3		>12 years	2.3±0.9		Work place	2.2±1	
Job status			Being under coverage of family physician program			Job status			Being under coverage of family physician program		
Having job	5±2.7	$t=0.1$, $P=0.8$	Yes	5.5±2.5	$t=15.8$, $P<0.001$	Having job	2.3±0.9	$t=-1.2$, $P=0.2$	Yes	2.6±0.7	$t=29.9$, $P<0.001$
Jobless	5±2.6		No	2.4±2.4		Jobless	2.3±0.9		No	0.7±0.6	
Income per month ($)			Being of family member under coverage of family physician program			Income per month ($)			Being of family member under coverage of family physician program		
≤1000	5.1±2.7	$t=-0.7$, $P=0.4$	Yes	5.5±2.5	$t=14.5$, $P<0.001$	≤1000	2.2±0.9	$t=-1.2$, $P=0.2$	Yes	2.6±0.7	$t=25.9$, $P<0.001$
>1000	5.3±3		No	2.9±2.5		>1000	2.4±1.1		No	1±0.7	

*Of total score 19, †Of total score 7. SD=Standard deviation

coverage of one of the main insurance systems (ß =0.5, 95% CI = 0.01–1, P = 0.04) and being married (ß =0.4, 95% CI = 0.1–0.8, P = 0.002).

Peoples' practice toward urban family physician program has gained mean 2.3 ± 0.9 of total score 7 in this study, showed that 942 (74%) had poor performance while 86 (6.8%) had moderate and 3 (0.2%) had expected level of practice. Of total 1257, 882 (70.2%) stated that they became sick during previous year of this study and 700 (55.6%) referred to their family physician, showing 700 of 882 (79.3%) referral rate to family physicians. Eighty (6.4%) had phone counseling with their family physician in the similar period [Table 4]. Mean number of references to family physicians in whom that were under the coverage of family physician program was 2.4 ± 3.6 in the previous year of this study while mean number of references to nonfamily physicians in whom that were not under the coverage of family physician program was 2.4 ± 4.3 in the same year (P = 0.3) [Table 4]. One hundred seventy-eight (14.2%) had changed their family physicians during last year of this study and 152 (20.6%) paid higher than legally approved visit-fee to their family physician. Two hundred twelve (16.9%) had problems in providing drugs that were prescribed by their family physicians and 342 (27.2%) had problems in access to specialist family physician [Table 4]. Correlation of

Table 4: Practice and problems of people toward urban family physician program in Shiraz, Southern Iran (n=1257)

Question	n (%)	χ^2 (P value)	Question	n (%)	χ^2 (P value)
Did you become sick during the previous year?			What did you do with referral forms that filled by specialists family physicians?		
Yes	882 (70.2)	258.1	I returned them to my family physician	95 (7.6)	1392.7
No	324 (25.8)	(<0.001)	Other answers	119 (9.5)	(<0.001)
If you got sick during the previous year, how many times was it?			I do not know	1042 (82.9)	
Mean±SD	3.1±4	372	Have you had any phone counseling with your family physician during the previous year?		
Median	2	(<0.001)	Yes	80 (6.4)	1320.8
1-4 times	408 (53)		No	1025 (81.5)	(<0.001)
5-8	115 (14.9)		No answer	152 (12.1)	
≥9	54 (7)		Did you change your family physician during the previous year?		
How many times did you refer to your family physician during the previous year?			Yes	178 (14.2)	954.5 (<0.001)
Mean±SD	2.2±3.8	499.1	No	935 (74.4)	
Median	1	(<0.001)	No answer	144 (11.5)	
None	419 (41.4)		Compared to the legal limit, how much was the mean of your payments in referrals that you had to your family physician during the previous year?		
1-4 times	440 (43.5)		Lower	222 (30.1)	94
5-8	98 (9.7)		Equal	363 (49.3)	(<0.001)
≥9	54 (5.3)		Higher	152 (20.6)	
How many times did you refer to physicians, who were outside of family physician program, during the previous year?			Have you had any problem in providing the prescribed drugs by your family physician?		
Mean±SD	2.2±3.9	508	Yes	212 (16.9)	1037.5
Median	1	(<0.001)	No	804 (64)	(<0.001)
None	498 (48.3)		I do not need to any drug	122 (9.7)	
1-4 times	365 (35.4)		No answer	118 (9.4)	
5-8	110 (10.7)		Have you had any problem in access to specialist family physician?		
≥9	58 (5.6)		Yes	342 (27.2)	301
What did you do with referral forms that filled by specialists family physicians?			No	697 (55.4)	(<0.001)
I returned them to my family physician	95 (7.6)	1392.7	No answer	213 (16.9)	
Other answers	119 (9.5)	(<0.001)			
I do not know	1042 (82.9)				

SD=Standard deviation

people's knowledge and practice toward urban family physician program was 24%.

Univariate analysis showed that practice toward family physician program was lower in men, in whom which were not under the coverage of main insurance systems and in whom that were not covered by family physician program [Table 3].

Stepwise linear regression model showed that total practice of people toward their rights in urban family physician program by adjusted R square 0.54 and constant (ß = 4.6, 95% CI = 4.3–4.8, $P < 0.001$) was in order correlated to being under coverage of urban family physician program (ß = 1.2, 95% CI = 0.9–1.4, $P < 0.001$), being other family members under coverage of urban family physician program (ß = 0.9, 95% CI = 0.7–1.1, $P < 0.001$) and having higher than 1000$ income monthly (ß = 0.2, 95% CI = 0.05–0.3, $P = 0.008$).

DISCUSSION

After 9 years of establishment and modest achievements in rural family physician program in Iran, thought and policy of extension of this system to urban settings has been dominating in recent years as evidenced in health sector reform of this country. Therefore, as the pilot, this national project was launched in 2012 in two provinces of Iran, including 4.5 million populated Fars provinces in the south of the Iran. In Shiraz, the capital city of Fars province, with a population 1.5 million, 650 general family physicians and 300 specialist family physician were included in the family physician program.

Considering that urban family physician program is a complex and multi-disciplinary structure, it is necessary to monitoring its performance periodically from different aspects.[6,7] One of the important aspects of the monitoring could be regarded as the assessment of the trend of knowledge and practice of the people toward this program and before and after implemented interventions. Therefore, after 2.5 years of starting this program and as the first official report, this study was conducted to evaluate the knowledge and practice of the people toward family physician program. Present study demonstrated that the knowledge of the people about their rights in this program is generally low. The results also showed that only few people knew about what to do when they had any question or any complain about the program. This should be considered as an important obstacle toward improvement of the program since the policy makers may hardly get access to the voice of the people.[8,9] Furthermore, most of the people did not know what to do when their family physicians are absent and how to find an alternative one. This leads to ignore or delay to visit by the family physician and gradually results in mistrust to and outgoing from the program.[10,11] The results of the present study revealed that the lack of knowledge was more common among those who were not under coverage of any health insurance system and also among single people. Furthermore, results remarked that the practice of the people toward urban family physician program was so weak. A significant portion of the people had problems with providing drugs that were prescribed by their family physicians and also to access specialist family physicians. Furthermore, about one fifth of the people complained that they had paid higher that legally approved visiting fees. This matter could be solved if people get more informed about their rights meanwhile teach them how send their feed backs and complains.[12,13] However, establishment of an effective and continuous supervision system may also come to help in this regard. Another achievement of this survey was that, poor practice is common among those with lower outcome. We found that low knowledge toward this program was not related to level of income, therefore above result pointed that low economics may suffer from weaker infrastructures of family physician system in their areas although other studies are needed to prove such claim. Another finding was that practice of people toward urban family physician system had a poor correlation with their knowledge as it was endorsed in previous studies with emphasis on that educating alone may not lead into a better good level of practice.[14,15] Hence, strengthening the software and hardware resources are mandatory for the sake of good performance of this system. Present study marked that the reference rate of the patients to family physicians is high in the current system. However, this was not so different from those who were not under coverage of family physician and were referred to out of the family physician system doctors. There are few studies that demonstrate that the number of unnecessary patients' referrals to pharmacies, laboratories, and radiology centers has been increased as a result of running family physician program, it is needed to perform other studies about the cost effectiveness of the urban family physician program in our setting, as well as the efficiency of monitoring-evaluation system.[16,17]

Saying about limitations in this study, it should be clear that despite our effort to design the questionnaire simple and user friendly and also providing prepaid envelope for resending the filled questionnaires, approximately 10% of the people did not answer the questionnaire. It was half of dropout rate of 20% that we assumed for estimation of sample size and we also noticed that the nonrespondents did not show statistically difference among different postareas, therefore it is unlikely that it could have influence on the results and their representativeness. Another point was that this study was conducted in Shiraz, the most populated city of the Fars province that does not have exactly the same situation as the small cities of this province. However, by choosing participants

randomly and from different socioeconomic classes, the possible discrepancy may be faded.

CONCLUSIONS

This study showed that the knowledge and practice of the people toward family physician program are weak. Therefore, continuous education and effective training of people about their rights in this program could lead to a better performance of them and come into play for future outcome of this program. Howbeit, any intervention in this system needs a multidimensional plan. Last but not least, lessons from this project could help policymakers at national level before any decision to extension this program to whole the country or even may be, followed by neighboring and regional countries that look to Iran as a hub for regional health sector reforms.

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