

Acceptability of the Urban Family Medicine Project among Physicians: A Cross-Sectional Study of Medical Offices, Iran

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Abstract

Introduction: It is essential to organize private physicians in urban areas by developing urban family medicine in Iran. Acceptance of this project is currently low among physicians. The present research determined the factors affecting acceptability of the Urban Family Medicine Project among physicians working in the private sector of Mazandaran and Fars provinces in Iran.

Methods: This descriptive-analytical and cross-sectional study was conducted in Mazandaran and Fars provinces. The target population was all physicians working in private offices in these regions. The sample size was calculated to be 860. The instrument contained 70 items that were modified in accordance with feedback from eight healthcare managers and a pilot sample of 50 physicians. Data was analyzed using the LISREL 8.80.

Results: The response rate was 82.21% and acceptability was almost 50% for all domains. The fit indices of the structural model were the chi-square to degree-of-freedom (2.79), normalized fit index (0.98), non-normalized fit index (0.99), comparative fit index (0.99), and root mean square error of approximation (0.05). Training facilities had no significant direct effect on acceptability; however, workload had a direct negative effect on acceptability. Other factors had direct positive effects on acceptability.

Conclusion: Specification of the factors relating to acceptance of the project among private physicians is required to develop the project in urban areas. It is essential to upgrade the payment system, remedy cultural barriers, decrease the workload, improve the scope of practice and working conditions, and improve collaboration between healthcare professionals.

Keywords: acceptability, family medicine, project, physicians, medical office

1. Introduction

All Iranians are entitled to free health care at the point of use in accordance with Islamic principles and article 29 of the Iranian constitution. Central principles of the ideology of the Islamic Republic of Iran include “healthcare for all” and “social justice” (Zarenejad et al., 2009); thus, improving the health care system has been a priority for almost 40 years. This was part of a healthcare development program in West Azerbaijan province prior to the Alma-Ata Declaration in 1978. The Iranian primary health care (PHC) network was devised in 1981 by creating health houses in rural areas and health posts in urban areas to provide services before the recent introduction of family medicine (Takian, 2009; Tavassoli, 2008).

The health posts catered to about 12,000 people per post with health technicians trained at the university level providing the services. The health posts referred patients to an urban health center that covered a population of 40-60 thousand people. There are currently 2182 urban health centers; however, the PHC in urban areas are fragile and unstable compared to those in rural areas (Takian, 2009).

The Alma Ata Declaration advanced the Family Medicine Project as a permanent and practical strategy for all constitutional reforms that strove to meet the challenges of the health system (Esmaeili et al., 2015). Articles 81, 90, 91, and 96 of the Fourth Development Plan emphasized implementation of the Family Physician Project in Iran (Islamic Consultative Assembly, 2006; Zarenejad et al., 2009). Implementation of family medicine nationally began in August 2005 in rural areas and in towns with less than 20,000 people (Islamic Consultative Assembly, 2006). The Urban Family Physician Project has been implemented in cities with populations of 20-50 thousand in Fars and Mazandaran provinces since 2011, but has not been developed in other provinces (Majdzadeh, 2012). The Medical Insurance Organization, the Ministry of Welfare and Social Security, and the Health Ministry have contributed to the program (Islamic Consultative Assembly, 2012; Ministry of Health and Medical Education, 2009; Zarenejad et al., 2009).

Policymakers believe that implementation of the Family Medicine Project could strengthen the PHC model in urban areas of Iran (Esmaeili et al., 2015; Ministry of Health and Medical Education, 2011). Family medicine (FM) is a model of primary care in which a family physician (FP) is the first level of public contact. The core of family medicine is gate-keeping, which functions to refer patients for specialist care when necessary. The FP is a general physician with a medical degree who is officially entitled to practice. The FP is responsible for providing services without discrimination for gender, age, socioeconomic status, or risk of disease. If necessary, the FP refers patients to a specialist and is responsible for follow-up of the case and continuing to provide services. The FP is the manager of the health care team and refers patients to them and monitors their movement within the referral system (Ministry of Health and Medical Education, 2011).

Health care strategic planning has two goals: (1) elimination of the shortage of physicians; and (2) improving the distribution and retention of physicians (Starkiene et al., 2005). Development of the Urban Family Medicine Project in other provinces faces many challenges. For example, it is necessary to consider how to attract private physicians as employees and to discern their motives for participation. Physicians have opinions about their work when they are recruited for a job and choose a workplace. Meeting their expectations is the major challenge to the health care system (Gooran et al., 2015).

The health care system of Iran is currently dual public and private. The private sector is the oldest section that provides healthcare services; about 15% of physicians work in the private sector (Gooran et al., 2015). This sector is powerful in urban areas and a large percentage of outpatient services are provided by this sector. About 80% of demand for outpatient services is met by private medical offices in cities (Ministry of Health and Medical Education, 2009). Because families are attended to at medical offices in urban areas, it is essential to organize private physicians to participate in the Urban Family Medicine Project (Gooran et al., 2015; Zarenejad et al., 2009). There are 23 thousand physicians in the private sector who work in their own offices. The project employs 6,600 physicians, 2,856 of which (43.27%) are from the private sector. Managing the recruitment and retainment of private physicians is the most important challenge to organizing human resources in the Urban Family Medicine Project (Gooran et al., 2015).

The health care system is affected by physicians. They are responsible for advancing change (Cochran et al., 2014). The role of policymakers is to create policies that employ adequate numbers of physicians in the FM project to provide adequate services and results in a well-functioning health care system. The health care system must respond to the growing needs and demands of the population. It requires fundamental appraisal of policies, organization, and working arrangements in which it is necessary to consider the needs of the physicians (Heikkila et al., 2014).

A preliminary survey has shown that acceptance of the FM project is very low among physicians in the private sector. The reasons for their resistance to participation have been highlighted by policymakers and managers and include weakness at the provisional level, problems related to clients/patients, deficiencies in the financing and payment system, and deficiency in policymaking (Gooran et al., 2015). It is necessary to identify the factors affecting the lack of motivation of private physicians to participate in the project. Researchers developed the following questions:

1. Do informational and cultural factors (ICF) affect collaborative behavior of health care professionals (CBHCP) and workload (W)?
2. Do CBHCP and scope of practice (SP) affect W?
3. Does availability of training facilities (ATF) affect SP?
4. Does W affect working conditions (WoC)?

5. Which factors affect acceptability of financial characteristics (AFC), social characteristics (ASC), professional characteristics (APC), and organizational characteristics (AOC) of the Urban Family Medicine Project?

The current research determined factors the affecting acceptance of the Urban Family Medicine Project by physicians working in the private sector of Mazandaran and Fars provinces.

1.1 Literature Review of Similar Projects

Many countries have implemented family medicine projects in which patients enter a health system and the general practitioner refers them to specialized levels of care as needed. One model adopted in the US during the 1990s used a general practitioner as the first point at which patients engage with the health system. They were then referred to a specialist if necessary. This project was not successful because of lack of patient compliance and opposition from specialists. It was revised to consider various capacities for general practitioners (Philips, 2005).

Another example of implementation of family medicine is the system based on general practitioners in Lithuania introduced in the 1990s. The goal of the project was to shift health services to the outpatient level. The challenge was lack of general practitioners; thus, a training project to prepare specialists in family medicine was in place by 2005 (Lovkyte et al., 2001).

The health system established in Portugal between 1979 and 1983 was organized based on a network of health centers staffed by family physicians and nurses. In the current system, patients register with a family physician as a gatekeeper. The Portuguese consider this to be their greatest success in terms of improving access to care and health outcomes (World Health Organization, 2008).

The government of Belgium institutionalized the health system based on the participation of local stakeholders in 2004. A fundamental subject considered in the bottom-up approach in 2008-2013 was access to health care. It currently operates in all cities and villages. This health reform was based on participation of all health care professionals and has significantly improved the way social determinants of health are tackled in the cities (World Health Organization, 2008).

Although the family medicine project was established in the 1970's in Japan, its disciplines are not well-established. About half of physicians work as practitioners or as an employee of a clinic. A clinic is by definition a physician's office with fewer than 20 beds. Some physicians train in teaching hospitals or large hospitals for 5-10 years. About one-third become private physicians in a clinic. These are the same group of physicians that become family physicians, but who have not been specifically trained for this. They do not have the opportunity to gain experience in primary care through continuing medical education (Murai et al., 2005).

2. Methods

2.1 Sample and Setting

This descriptive-analytical and cross-sectional study was conducted in Mazandaran and Fars provinces, the provinces in which the Urban Family Physician Project is exclusively carried out. The target population was all physicians working in the private sector having a Medical Council Registration Number. Researchers considered physicians of both genders working in private offices with more than one year of work experience in the private sector. They excluded the physicians with less than one year of work experience in the private sector.

Cluster sampling was used to estimate the sample size. The confidence level was 0.95, the power of testing was 0.95, and the correlation coefficient was 0.15. In the first level, the sample size was calculated to be 570 physicians. In the second level, the design effect coefficient was multiplied by 570 using cluster random sampling. The design effect coefficient was 1.5; therefore, the final sample size was estimated to be 860. The calculated sample size was divided between the provinces according to the number and distribution of private offices. The proportion-to-size method was employed at this level. The sample size for Mazandaran was estimated to be 440 and for Fars was estimated to be 420.

2.1.1 Mazandaran Province

The sample size calculated for Mazandaran (440) was distributed between cities in two steps.

Step 1: The number and distribution of physicians was not equal in the 21 cities of Mazandaran. It was necessary to specify a cut-off point for classifying the cities; thus, they were classified as:

- **Group 1** having ≤ 30 physicians (low). This included seven cities (33.3%).
- **Group 2** having 30-60 physicians (intermediate). This included seven cities (33.3%).
- **Group 3** having $60 \leq$ physicians (high). This included seven cities (33.4%).

Step 2: Two cities were randomly selected from each group. The sample size (440 physicians) was divided proportionately according to the size of the selected city. The sample size for each group was:

- **Group 1:** 27 physicians
- **Group 2:** 110 physicians
- **Group 3:** 303 physicians

2.1.2 Fars Province

The sample size calculated for Fars province (420) was also distributed among its cities in two steps.

Step 1: The number and distribution of the physicians was not equal in the 33 cities of Fars province. It was necessary to specify a cut-off point for classifying the 33 cities; thus, they were classified as:

- **Group 1** having ≤ 40 physicians (low). This included 11 cities (33.3%).
- **Group 2** having 40-70 physicians (intermediate). This included 11 cities (33.3%).
- **Group 3** having $70 \leq$ physicians (high). This included 11 cities (33.4%).

Step 2: Two cities were randomly selected from each group. The sample size (420 physicians) was divided proportionately according to the size of each city selected. The sample size for each group was:

- **Group 1:** 30 physicians
- **Group 2:** 115 physicians
- **Group 3:** 275 physicians

2.2 Model Instruments and Measurements

The survey instrument was designed based on a review of the literature and qualitative interviews. A systematic review was conducted in December 2014 to identify English-language studies on the factors affecting acceptability of family medicine programs globally. PubMed, Scopus, Science Direct, Elsevier, Ebscohost, and Google Scholar databases were searched for the time period of January 1980 to December 2014. The key terms used in the search strategy were: factors, facilitators, barriers, problems, challenges, acceptability, acceptance, project, program, family medicine, family physician, general physician, and physician. A manual search of reference lists of articles was also performed. The titles and abstracts were screened by one researcher. Full-text screening of articles was conducted by two authors.

All disagreements were resolved through discussion. Inclusion in the study required that: (1) the language of the article is English; (2) the publication date was between January 1980 and December 2014; (3) the article was original; and (4) the full text was available. Review, reports, dissertations, working papers, comments, and letters to the editor as well as non-English language articles were excluded from the study. Figure 1 presents a flow chart of systematic search used in the study.

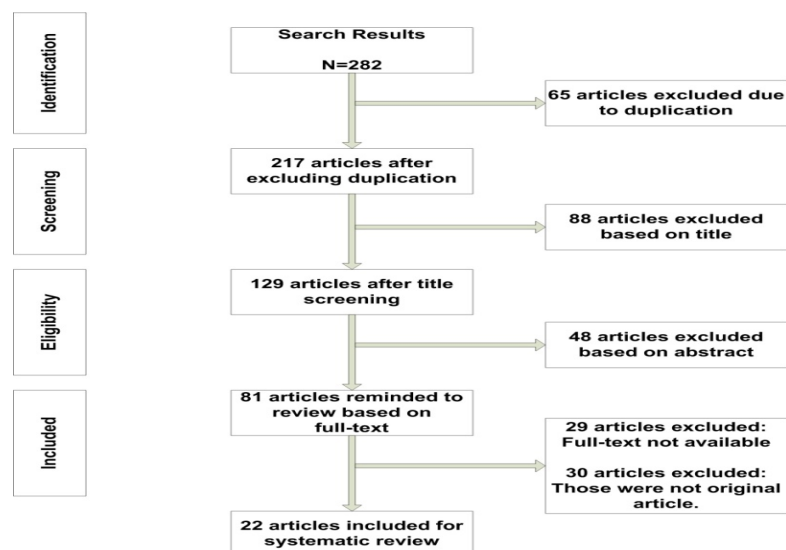


Figure 1. Systematic search and screening flow chart

A total of 22 articles were included for systematic review (Abyad et al., 2007; Al-Khathami, 2012; Avery et al., 2009; Bailey et al., 2005; Buwkamp-Memmer et al., 2013; Clarin, 2007; Curran et al., 2006; Edwards et al., 2006; Grenier et al., 2008; Jones et al., 2003; Kaczorowski et al., 2011; Kersnik, 2001; Kuppersmith et al., 2002; Mistretta, 2007; Morra et al., 2009; Murai et al., 2005; Papic et al., 2012; Pojskic et al., 2001; Sarma et al., 2011, 2012; Sunshine et al., 2010; Wang, 2007). The conceptual model of the research was adopted at this level. Figure 2 shows the conceptual model. The relation between each variable and other variables is delineated by colored lines.

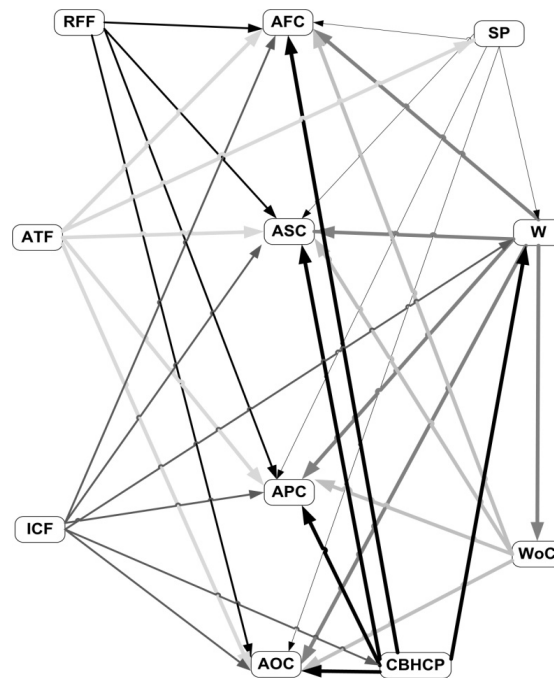


Figure 2. The conceptual model

Note. RFF=Remuneration and Financial Factors, WoC=Working conditions, ATC=Availability of Training Facilities, SP=Scope of Practice, W=Workload, CBHCP=Collaborative Behavior of Health Care Professionals, ICF= Informational and Cultural Factors, AFC=Acceptability of Financial Characteristics, ASC=Acceptability of Social Characteristics, APC=Acceptability of Professional Characteristics, AOC=Acceptability of Organizational Characteristics.

Although many items (102 questions) were adopted during the systematic review, some were not suitable for investigating the challenges of implementing the Family Medicine Project in Iran because they were based on studies in other countries. In the second level, researchers conducted semi-structured qualitative interviews with 34 informed persons at the national level. They chose the qualitative method for this research because it allowed collection of explanatory and detailed information about the attitudes, opinions, and behaviors of the participants (Mack et al., 2005).

Researchers used the content analysis method. The data was gathered during face-to-face interviews with the participants and the knowledge produced contained their perspectives. Codes and categories were derived inductively. Concepts were ordered in terms of properties and dimensions.

The purposeful sampling method was used to select the participants. The experts were selected with maximum variation. The selection criteria were based on first-hand experience, expertise, and willingness to participate in the research. Data collection continued until the research reached data saturation. The 34 experts were chosen from the Ministry of Welfare, public health faculties, health departments of four universities of medical science (Tehran, Shahid Beheshti, Iran, and Alborz), the Ministry of Health, and related organizations. Participation was voluntary. Experts with executive more than three years of expertise in the design and execution of the Family Physician Project and in development of the primary healthcare network were included in the study.

Researchers used semi-structured, in-depth interviews to gather data from experts about their attitudes toward the

factors affecting acceptability of the Urban Family Medicine Project by physicians in the private sector. The main researcher gathered data through interviews from April 2015 to December 2015. The interviews emphasized explanation of experiences, avoided leading questions, and pursued proper questioning. The researcher conducted individual interviews with each participant by means of an interview guide constructed by experts. The interview guide consisted of eight questions relating to the factors affecting acceptance of the Urban Family Medicine Project by physicians.

The final interview guidelines provided the opportunity for further comment. Before beginning each interview, the researcher introduced the aim of the study and obtained informed written consent from the participants. The interviews lasted for 60 to 100 minutes and were tape recorded and transcribed verbatim. Each interview began with a broad question that was asked of each participant. The questions were asked in the same order for each participant. The same interviewer conducted and directly transcribed all interviews. Before beginning each interview, the interviewer obtained permission to record the interviews from the participant.

Researchers used qualitative content analysis to analyze the data. Concurrent analysis was undertaken. The recorded interviews were transcribed verbatim at the first level. At the second level, researchers read the transcribed text several times for familiarization before coding. Induction was used to extract codes and categories. This began with open coding through reading of the text, then the related codes were assigned. Researchers obtained categories through systematic comparison and used a member-check strategy to reach consensus on coding to increase validity. In the final analysis, comments were incorporated. This ensured that the results were harmonious with expert opinion, beliefs, and perceptions. Data gathering and data analysis was concurrent. The different concepts were identified after completion of coding and assuring its precision. MAXQDA 10 was used for data analysis.

The strategy suggested by Lincoln and Guba (1985) was used in which the criteria essential for trustworthiness are credibility, dependability, conformability, and transferability (Lincoln et al., 1985). The researchers' prolonged engagement with data and experts over the course of eight months and conduction of frequent interviews assured the credibility of the data. Member check and peer check were used to assess dependency. Each abstract was shown to each expert during the interviews to assure dependability of the data. Conformability of data was confirmed by considering the background of the researcher. The researchers also reviewed the transcriptions of the interviews, codes, and extracted categories.

In the third level, the final questionnaire was designed using the information attained in the previous levels. The questionnaire contained 70 items and nine parts: (1) Demographic characteristics (13 items); (2) acceptability of the following FM program characteristics (18 items): financial (3 items), social (4 item), professional (5 items) and organizational (6 items); (3) remuneration and financial factors (8 items); (4) working conditions (8 items); (5) workload (3 items); (6) scope of practice (3 items); (7) availability of training facilities (6 items); (8) collaborative behavior of health care professionals (6 items); and (9) informational and cultural factors (6 items).

The following five-level Likert scale was employed for the responses: (1) strongly disagree, (2) disagree, (3) no opinion, (4) agree, (5) strongly agree. The survey instrument was modified and finalized in accordance with feedback from eight health care managers and a pilot sample of 50 physicians in the city of Behshahr in Mazandaran. Cronbach's alpha was greater than 0.7 for all domains.

2.3 Data Collection

This study was conducted over an eight-month period in 2015 (1 January to 1 October). The survey method used to gather data for the study. A list of office telephone numbers and addresses were first attained from the Medical Council and the Ministry of Health. The address list and the specified sample size for each group in the sample and setting section were used to randomly select the physicians. Researchers first contacted the physicians by telephone. The first author personally described the study to the physicians during the study. After obtaining their agreement to participate by telephone contact, the interviewers went to medical offices from the address list. Data was collected by nine trained interviewers by face-to-face interview.

2.4 Analysis Methods

Confirmatory factor analysis (CFA) was performed to determine the structure existing between the observed variables (items) and the latent constructs and to confirm the validity of the model. The measurement model comprised 11 latent variables (acceptability of financial, social, professional, and organizational characteristics, remuneration and financial factors, working conditions, workload, and scope of practice, training facilities, and collaborative behavior of health care professionals, informational and cultural factors) for a total of 57 items. CFA was used to confirm the loading of the 11 constructs and assess the fit of the measurement model.

Five indices were used to assess the model fit: the ratio of chi-square to degree of freedom (χ^2/df), normalized fit index (NFI), non-normalized fit index (NNFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). NFI, NNFI, and CFI values that are greater than 0.95 are indicative of the close fit of a model to the data. An RMSEA value lower than 0.05 indicates a good fit (Hair et al., 2009). Convergent validity refers to the extent to which each item correlates with the other items of a latent construct and was examined using item reliability, composite reliability (CR), and average variance extracted (AVE) (Fornell et al., 1981; Nunnally, 1978). The AVE index is the total amount of variance in the latent construct items (Hair et al., 2009). The structural equations between the latent constructs were examined to test the conceptual structural equation model. All procedures were performed using LISREL 8.80.

2.5 Ethical Considerations

The aim of the study was explained to the physicians and they were assured of the confidentiality of their information. They were free to choose to participate in the study and those who agreed signed informed consent forms. The study was approved by the ethics committee of the Deputy of Research of Tehran University of Medical Sciences (Code: 1394.437).

3. Results

3.1 Descriptive Statistics

The questionnaire was distributed to 860 participants and 707 responses were returned for a response rate of 82.21%. The choice of voluntary participation could explain the high response rate. Acceptability was almost 50% for all domains. Table 1 shows the demographic characteristics of the participants.

Table 1. Participants' demographic characteristics (N=707)

Measure	Category	N (%)
Province	Mazandaran	364 (51.5%)
	Fars	343 (48.5%)
Gender	Male	422 (59.7%)
	Female	285 (40.3%)
Age	≤35 years old	57 (8.1%)
	35-40 years old	191 (27%)
	40-45 years old	252 (35.6%)
	45-50 years old	158 (22.3%)
	50-55 years old	19 (2.7%)
Title	55≤ years old	30 (4.2%)
	General Physicians	473 (66.9%)
	Specialists	234 (33.1%)
Work Experience	≤5 years	144 (20.4%)
	5-10 years	209 (29.6%)
Working Hours per Week	10≤ years	354 (50.1%)
	≤30 hours	281 (39.7%)
	30≤ hours	426 (60.3%)

3.2 Measurement Model

The chi-square ($\chi^2=2861.98$) to degree of freedom ($df=1484$) ratio was 1.93 (<3) for the measurement model. The CFI (0.99), NFI (0.99), and NNFI (0.99) were all greater than the suggested 0.95 benchmark. The RMSEA was 0.036 and within the acceptable level of less than 0.05. The measurement model was a good fit to the data. Table 2 shows the results of the measurement model. The loadings of all items were greater than 0.7 and the t-values of all standardized loadings were significant ($p<0.05$). All items were relevant to their specified constructs; consequently, relationships were confirmed between the indicators and constructs. CR estimates ranged from 0.88 to 0.98 and all were above the acceptable level of 0.7, indicating good reliability (Nunnally, 1978). The AVEs ranged from 0.73 to 0.87 and were above the cut-off value of 0.5 (Fornell et al., 1981); thus, the convergent validity of the measurement model was satisfactory.

Table 2. The results of measurement model

Construct	Factor/Items	Standardized (t-value)	Loading	AVE (>0.5)	CR (>0.6)	Cronbach's α (>0.7)
Acceptability of Financial Characteristics (AFC)	Q1	0.92 (32.16)		0.85	0.94	0.93
	Q2	0.92 (31.78)				
	Q3	0.93 (32.55)				
	Q4	0.91 (31.59)				
Acceptability of Social Characteristics (ASC)	Q5	0.92 (31.71)		0.82	0.96	0.94
	Q6	0.90 (30.66)				
	Q7	0.90 (30.87)				
	Q8	0.90 (30.44)				
Acceptability of Characteristics (APC)	Professional	Q9	0.88 (29.66)	0.76	0.94	0.93
		Q10	0.89 (30.16)			
	Q11	0.86 (28.46)				
	Q12	0.84 (27.61)				
	Q13	0.88 (29.54)				
	Q14	0.89 (30.17)				
Acceptability of Characteristics (AOC)	Organizational	Q15	0.88 (29.45)	0.73	0.94	0.93
		Q16	0.85 (28.04)			
		Q17	0.82 (26.26)			
		Q18	0.83 (26.67)			
		Q19	0.86 (28.59)			
		Q20	0.94 (33.16)			
		Q21	0.95 (33.91)			
Remuneration and Financial Factors (RFF)		Q22	0.95 (33.78)	0.87	0.98	0.94
		Q23	0.95 (33.86)			
		Q24	0.94 (33.39)			
		Q25	0.93 (33.01)			
		Q26	0.93 (32.97)			
		Q27	0.93 (32.43)			
		Q28	0.95 (33.70)			
		Q29	0.94 (33.50)			
		Q30	0.94 (33.55)			
Q31	0.93 (32.57)					
Q32	0.93 (32.88)					
Working Conditions (WoC)		Q33	0.92 (32.26)	0.87	0.98	0.95
		Q34	0.89 (28.79)			
Workload (W)		Q35	0.78 (23.87)	0.70	0.88	0.87
		Q36	0.84 (26.63)			
Scope of Practice (SP)		Q37	0.89 (29.61)	0.79	0.92	0.91
		Q38	0.91 (30.64)			
		Q39	0.87 (28.82)			
Availability of Training Facilities (ATF)		Q40	0.82 (26.03)	0.68	0.93	0.92
		Q41	0.82 (26.22)			
		Q42	0.79 (24.86)			
		Q43	0.82 (26.28)			
		Q44	0.84 (27.32)			
Collaborative Behavior of Health Care		Q45	0.85 (27.72)	0.84	0.97	0.95
		Q46	0.92 (32.07)			

Professionals (CBHCP)	Q47	0.92 (31.73)			
	Q48	0.91 (31.40)			
	Q49	0.90 (31.04)			
	Q50	0.92 (31.86)			
	Q51	0.92 (31.85)			
	Q52	0.90 (30.89)			
	Q53	0.91 (31.44)			
Informational and Cultural Factors (ICF)	Q54	0.88 (29.92)	0.82	0.96	0.95
	Q55	0.90 (30.93)			
	Q56	0.91 (31.49)			
	Q57	0.92 (31.76)			

Table 3 shows the results of squared correlation matrix of the constructs. An accurate method to evaluate the discriminant validity is to compare the AVE values of each individual construct with the squared correlation between that individual construct and other constructs (Hair et al., 2009). The AVE of each individual construct must be higher than the squared correlation between that construct and other constructs. In this model, all AVEs were higher, indicating sufficient discriminant validity.

Table 3. The results of squared correlation matrix of constructs

Variable	AFC	ASC	APC	AOC	RFF	WoC	W	SP	ATF	CBHCP	ICF
AFC	0.85										
ASC	0.76	0.82									
APC	0.72	0.73	0.76								
AOC	0.70	0.72	0.71	0.73							
RFF	0.69	0.67	0.76	0.72	0.87						
WoC	0.70	0.70	0.74	0.71	0.74	0.87					
W	0.57	0.59	0.48	0.49	-0.26	-0.26	0.70				
SP	0.70	0.68	0.55	0.53	-0.35	-0.36	0.66	0.79			
ATF	0.21	-0.24	0.23	-0.25	-0.20	-0.18	0.24	0.17	0.68		
CBHCP	0.49	0.51	0.53	0.59	-0.49	-0.47	0.39	0.41	0.33	0.84	
ICF	0.43	0.43	0.48	0.53	0.52	0.50	0.18	0.24	-0.30	-0.79	0.82

Note 1. The values on the diagonal are average variance extracted.

Note 2. RFF=Remuneration and Financial Factors, WoC=Working conditions, ATF=Availability of Training Facilities, SP=Scope of Practice, W=Workload, CBHCP= Collaborative Behavior of Health Care Professionals, ICF= Informational and Cultural Factors, AFC=Acceptability of Financial Characteristics, ASC=Acceptability of Social Characteristics, APC=Acceptability of Professional Characteristics, AOC=Acceptability of Organizational Characteristics.

3.3 Structural Model

After establishing a valid and reliable measurement model, a structural model was used to test the predicted relationship between the constructs of the study model. The fit indices of the structural model were χ^2/df (2.79), NFI (0.98), NNFI (0.99), CFI (0.99), and RMSEA (0.05) and showed that the structural model had an acceptable explanation for the observed covariance among the constructs. Table 4 shows the results of the structural model. Availability of training facilities had no significant direct effect on the acceptability of the Family Medicine Project. Remuneration and financial factors had no direct effect on the acceptability of social characteristics. The following constructs had direct positive effects on the acceptability of the Family Medicine Project: informational and cultural factors, collaborative behavior of health care professionals, scope of practice, working conditions, remuneration and financial factors. Workload had a direct negative effect on acceptability of the Family Medicine Project. Figure 3 shows the estimated model. The values on the vector show the direct effect.

Table 4. The results of structural model

Path	Estimate	t-value	Result
ICF → CBHCP	-0.90	-27.50	Supported
ICF → W	0.98	10.35	Supported
CBHCP → W	1.24	12.83	Supported
SP → W	0.78	17.54	Supported
ATF → SP	0.19	4.60	Supported
W → WoC	-0.32	-7.63	Supported
ICF → AFC	2.04	6.68	Supported
ICF → ASC	1.85	6.18	Supported
ICF → APC	1.60	5.85	Supported
ICF → AOC	0.93	4.53	Supported
CBHCP → AFC	2.46	6.80	Supported
CBHCP → ASC	2.24	6.33	Supported
CBHCP → APC	1.89	5.85	Supported
CBHCP → AOC	1.03	4.25	Supported
ATF → AFC	0.03	1.11	Non-Supported
ATF → ASC	-0.01	-0.42	Non-Supported
ATF → APC	0.01	0.30	Non-Supported
ATF → AOC	-0.01	-0.42	Non-Supported
SP → AFC	0.98	4.60	Supported
SP → ASC	1.05	5.02	Supported
SP → APC	1.02	5.32	Supported
SP → AOC	0.73	5.00	Supported
W → AFC	-2.00	-7.63	Supported
W → ASC	-1.99	-7.70	Supported
W → APC	-1.73	-7.36	Supported
W → AOC	-1.24	-6.94	Supported
WoC → AFC	0.29	10.56	Supported
WoC → ASC	0.44	15.91	Supported
WoC → APC	0.12	4.32	Supported
WoC → AOC	0.30	10.74	Supported
RFF → AFC	0.21	7.20	Supported
RFF → ASC	0.04	1.45	Non-Supported
RFF → APC	0.53	15.02	Supported
RFF → AOC	0.48	14.35	Supported

Note. RFF=Remuneration and Financial Factors, WoC=Working conditions, AFC=Availability of Training Facilities, SP=Scope of Practice, W=Workload, CBHCP=Collaborative Behavior of Health Care Professionals, ICF= Informational and Cultural Factors, AFC=Acceptability of Financial Characteristics, ASC=Acceptability of Social Characteristics, APC=Acceptability of Professional Characteristics, AOC=Acceptability of Organizational Characteristics.

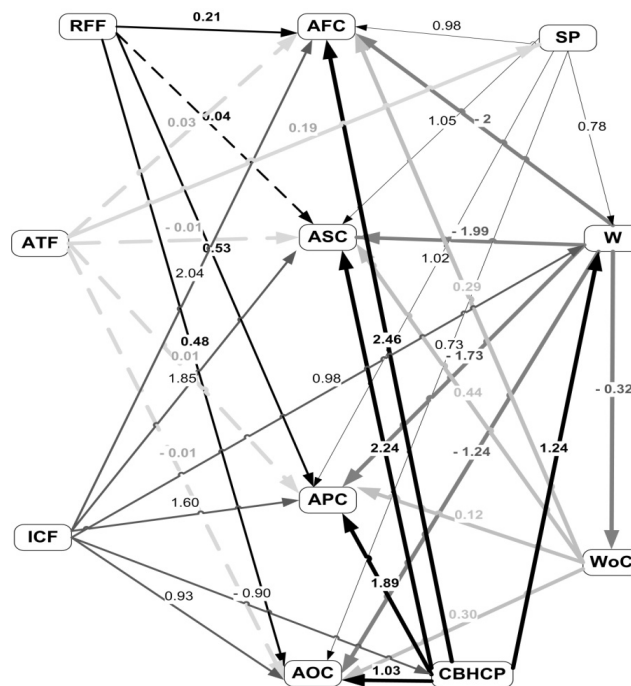


Figure 3. The estimated model

Note 1. RFF=Remuneration and Financial Factors, WoC=Working conditions, ATF=Availability of Training Facilities, SP=Scope of Practice, W=Workload, CBHCP= Collaborative Behavior of Health Care Professionals, ICF= Informational and Cultural Factors, AFC=Acceptability of Financial Characteristics, ASC=Acceptability of Social Characteristics, APC=Acceptability of Professional Characteristics, AOC=Acceptability of Organizational Characteristics.

Note 2. Significant Effect \longrightarrow , Insignificant Effect $\cdots\cdots\longrightarrow$

Note 3. The values on the vector show the direct effect.

Table 5 shows the results of decomposition of the effects. The model estimated that working conditions and remuneration and financial factors had a direct effect on the acceptability of project characteristics. The other antecedents had indirect effects on acceptability. The total effect is the sum of the direct and indirect effects. The informational and cultural factors (-2.13) and workload (-2.09) had the greatest effect on the acceptability of financial characteristics. Workload (-2.13) and informational and cultural factors (-1.77) had the greatest effect on the acceptability of social characteristics. Informational and cultural factors (-1.80) and workload (-1.77) had the greatest effect on the acceptability of professional characteristics. Workload (-1.34) and informational and cultural factors (-1.22) had the greatest effect on the acceptability of organizational characteristics. The results indicated that the estimated model was effective in explaining the relationships between the antecedents and the acceptability of the Family Medicine Project (financial, social, professional, and organizational characteristics).

Table 5. The results of decomposition of structural effects

Path	Direct Effect	Indirect Effect	Total Effect
ICF \rightarrow CBHCP	- 0.90	—	- 0.90
ICF \rightarrow W	0.98	- 1.12	- 0.14
CBHCP \rightarrow W	1.24	—	1.24
SP \rightarrow W	0.78	—	0.78
ATF \rightarrow SP	0.19	—	0.19
W \rightarrow WoC	- 0.32	—	- 0.32

ICF → AFC	2.04	- 4.17	- 2.13
ICF → ASC	1.85	- 3.62	- 1.77
ICF → APC	1.60	- 3.40	- 1.80
ICF → AOC	0.93	- 2.15	- 1.22
CBHCP → AFC	2.46	- 2.48	- 0.02
CBHCP → ASC	2.24	- 2.47	- 0.23
CBHCP → APC	1.89	- 2.15	- 0.26
CBHCP → AOC	1.03	- 1.54	- 0.51
ATF → AFC	0.03	0.19	0.22
ATF → ASC	- 0.01	0.20	0.19
ATF → APC	0.01	0.19	0.20
ATF → AOC	- 0.01	0.14	0.13
SP → AFC	0.98	- 1.56	- 0.58
SP → ASC	1.05	- 1.55	- 0.50
SP → APC	1.02	- 1.40	- 0.38
SP → AOC	0.73	- 0.97	- 0.24
W → AFC	- 2.00	- 0.09	- 2.09
W → ASC	- 1.99	- 0.14	- 2.13
W → APC	- 1.73	- 0.04	- 1.77
W → AOC	- 1.24	- 0.10	- 1.34
WoC → AFC	0.29	—	0.29
WoC → ASC	0.44	—	0.44
WoC → APC	0.12	—	0.12
WoC → AOC	0.30	—	0.30
RFF → AFC	0.21	—	0.21
RFF → ASC	0.04	—	0.04
RFF → APC	0.53	—	0.53
RFF → AOC	0.48	—	0.48

Note. RFF=Remuneration and Financial Factors, WoC=Working conditions, AFC=Availability of Training Facilities, SP=Scope of Practice, W=Workload, CBHCP=Collaborative Behavior of Health Care Professionals, ICF= Informational and Cultural Factors, AFC=Acceptability of Financial Characteristics, ASC=Acceptability of Social Characteristics, APC=Acceptability of Professional Characteristics, AOC=Acceptability of Organizational Characteristics.

4. Discussion

Family medicine developed as a practical strategy to restructure and develop the health system while developing the PHC over the last decade in Iran. There has been a longstanding challenge to expanding the FM program into urban settings, which is the resistance of physicians who work in the private sector. The present study determined the factors affecting acceptability of the Urban Family Medicine Project by physicians working in the private sector of Mazandaran and Fars provinces in Iran.

Acceptability was estimated as average for all domains. The most important factors affecting acceptability of financial characteristics were, in order, informational and cultural factors, workload, scope of practice, working conditions, remuneration and financial factors, and collaborative behavior of health care professionals. The most important factors affecting acceptability of social characteristics were, in order, workload, informational and cultural factors, scope of practice, working conditions, and collaborative behavior of health care professionals. The most important factors affecting acceptability of professional characteristics were, in order, workload, informational and cultural factors, remuneration and financial factors, scope of practice, collaborative behavior of health care professionals, and working conditions. The most important factors affecting acceptability of organizational characteristics were, in order, workload, informational and cultural factors, collaborative behavior of health care professionals, remuneration and financial factors, working conditions, and scope of practice.

Remuneration and financial factors had direct positive effects on the acceptability of the Family Medicine Project characteristics. This finding is in accordance with those of other studies (Heikkila et al., 2014; Kermani et al., 2008; Sarma et al., 2012). One study showed that fee-for-service payment had a negative effect on physician willingness to participate. It is necessary to combine a non-fee-for-service arrangement with another structure to increase participation (Sarma et al., 2012). Salary affects the choice of workplace (Heikkila et al., 2014). Physician willingness to participate was significantly related to mode of remuneration. For example, a monthly salary was considered unsatisfactory because there is usually a delay of several months in payment. Evaluation of performance tends to rely on uncontrollable factors that can disproportionately affect the calculation of salary (Kermani et al., 2008).

Satisfaction with training facilities had no significant direct effect on acceptability of the Family Medicine Project characteristics. Satisfaction with the training facilities increased the scope of practice and had an overall indirect positive effect on acceptability of the Family Medicine Project characteristics. This finding is in accordance with those of other studies (Fodeman et al., 2015; Hafferty, 2009; Lopez-Roing et al., 2010; Rajabi et al., 2011). A starting point is to emphasize primary care through medical education (Fodeman et al., 2015). It is essential to create FM experiences for physicians who have not been trained to favorably perceive their new role in primary care. The policies and strategies of other countries could facilitate policy planning for medical education favorable to implementing the FM project and increasing its acceptability among physicians in urban areas. The experiences of other nations in implementation of an FM project can play a pivotal role in the reform of Iranian medical education (Rajabi et al., 2011). It is important to increase the quality and quantity of outpatient training during medical education to encourage physicians to accept the new PHC system (Fodeman et al., 2015). Family medicine should be developed as an academic field and its reputation should be enhanced. It is necessary to consider it an attractive career path by the medical community students, general physicians, and specialists (Lopez-Roing et al., 2010). Development of a professional identity begins in medical universities and institutions of higher education where the norms, values and professional readiness are internalized. They develop a communal identity for the profession to which physicians aspire to belong (Hafferty, 2009).

Informational and cultural factors had direct effects on the acceptability of the Family Medicine Project characteristics. The direct effect was not negative, but they had an indirect negative effect on acceptability. Informational and cultural factors had a negative effect on the acceptability of the Family Medicine Project characteristics. This finding was in line with those of other studies (Esmaeili et al., 2015; Weldon et al., 2014). For example, physicians encountered cultural challenges to providing health care services in the US health care environment. These included language barriers, lack of familiarity with modern primary health care projects, illiteracy, different cultural practices and etiquette (Weldon et al., 2014).

Collaborative behavior of health care professionals had a positive direct effect on the acceptability of the Family Medicine Project characteristics. This finding was in line with those of other studies (Barrett et al., 2007; Fodeman et al., 2015; Gene-Badia et al., 2008; Khan et al., 2008; Sarma et al., 2012; Tourigny et al., 2010). Interdisciplinary collaboration encourages the formation of healthcare teams comprising general physicians, specialists, and pharmacists to deliver primary care services (Barrett et al., 2007). Collaborative behavior could affect the outcomes of the healthcare system (Gene-Badia et al., 2008; Tourigny et al., 2010). Collaboration is generally viewed positively in the delivery of primary healthcare services to the population. Collaborative behavior is linked to higher levels of satisfaction among providers in healthcare system reform (Khan et al., 2008; Tourigny et al., 2010). For example, the Family Medicine Project is the core of primary care reform in Canada in which general physicians and specialist are encouraged to collaborate with other health professionals. This is based on inter-professional collaboration and a large number of professionals were not satisfied with the collaborative setting (Sarma et al., 2012). Team-based care is a good opportunity for increasing the acceptability of the project and private sector physician willingness to participate in a national primary health care reform. Physicians should work with one or more providers. These providers include general physicians, specialists, nurses, midwives, and pharmacists that provide services such as evidence-based screening, logistical support, counseling, and preventive care (Fodeman et al., 2015).

Satisfaction with training facilities increases the scope of practice; therefore, it had an indirect positive effect on acceptability of the Family Medicine Project characteristics. This is in accordance with the results of other studies. Medical education requires major changes and policymakers should consider the availability of training facilities and education when planning for implementation of the FM Project in urban areas. The goal is to train physicians to promote community health by accepting the wide scope of practices such as treatment, diagnosis, and research (Rajabi et al., 2011).

The scope of practice had a direct positive effect on acceptability of Family Medicine Project characteristics.

This finding is also in accordance with the results of some studies. Beaulieu et al. found that scope of practice was essential to the Family Medicine Project. This is in accordance with the majority of professionals views. Specialization is a real threat to professional survival. It is necessary to integrate functions which, up to now, have been fulfilled to achieve family physicians goals, although this is different in urban areas and rural communities (Beaulieu et al., 2008).

The following factors had positive direct effects on workload: collaborative behavior of health care professionals, informational and cultural factors, and scope of practice. Workload had a negative direct effect on the acceptability of the Family Medicine Project characteristics, which is in accordance with the findings of other studies (Raziq et al., 2015; Tummer et al., 2012). The decrease in acceptability can be explained by fears for personal status, income, and being overburdened (Tummer et al., 2012). Overburden creates physician dissatisfaction and results in negative feedback to the health care system (Raziq et al., 2015).

Increasing the workload decreases satisfaction with working conditions. Working conditions had a positive direct effect on the acceptability of the Family Medicine Project characteristics. This finding is in accordance with the results of other studies. Physician working conditions must shift toward accepting new responsibilities and roles such as consulting with patients, talking with their families, and coordinating care, follow-up, prescriptions, and collaboration with other health professionals. Physicians spend about 50% of their time completing patient care-related tasks (Farber et al., 2007). Physicians have contact with family medicine practices and primary health care in which health care workers are not encouraged and motivated. They work under unsatisfactory working conditions and face restrictions for job development; this decreases their acceptability. It is possible to reconstruct the reputation of the new professional roles, especially for those acting in the aforesaid context, provided that their participation contributes to the valuable background of health care for the target population (McKinlay et al., 2008).

This study was the first to consider the challenge of attracting physicians from the private sector to the Urban Family Medicine Project. A comprehensive instrument and model was developed based on international studies and the viewpoints of Iranian experts. The current study was conducted in the provinces where the Urban Family Physician Project is currently implemented in Iran and where physicians must cope with the deficiencies of the project.

There were two limitations in the current study. Although researchers tried to encourage physicians to participate in the study by telephone contact before visiting their offices to gain initial agreement, some were not willing to cooperate. A total of 153 physicians (19.79%) refused to participate in the study after expressing initial agreement through telephone contact. This decreased the response rate to 82.21%.

Development of the Family Medicine Project in urban areas has been encouraged in previous and the current National Development Plans. It has not been possible to expand the project to the national level since 2009. The results of the current study can help facilitate development of the Family Physician Project in urban areas of other provinces. This article considers the challenges that lie ahead for motivating private physicians and identifies ways in which Iran can narrow the gaps between aspiration and implementation. The Urban Family Medicine Project is an attempt to provide universal coverage; however, much remains to be done in Iran that requires sustained improvement. The Ministry of Health should increase attempts to motivate private physicians in urban areas to provide services instead of expanding governmental provisions, because most physicians have several years of experience. This will increase loyalty among private physicians to the principles of family medicine, which is good in the long-run for the entire health system.

5. Conclusion

It is essential to motivate, recruit and retain physicians from the private sector to participate in the Urban Family Medicine Project. It is necessary to upgrade the remuneration and payment system by reforming the insurance system, increasing financial credits and resources in the health sector, reforming payment methods, and reimbursing physicians in proportion to their level of contribution. On the other hand, cultural barriers should be considered and removed by considering the cultural substructure, establishing a rational outlook for the medical society, and increasing national collaboration of related organizations. An integrated perspective for the health system must be established that encompasses the public and private sectors, public health and medicine, and educates the public about the concept of family medicine and the referral system. Furthermore, it is essential to improve the scope of practice of the physicians, decrease their workloads, and improve their working conditions to increase voluntary participation of physicians in the project. The physician job description must be transparent to motivate them, the population size covered by each physician must be reduced, the burden of patient referrals must be calculated by considering seasonal and other changes, and the hours on-call for each physician must be

reduced. The collaboration of health care professionals must be improved by incorporating their viewpoints into policymaking and decision-making, offering more desirable working conditions, and increasing transparency in the distribution of health services.

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Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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