Original Article

Curative Care Utilization under Family Medicine and Rural Insurance in Amol – Iran

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Abstract

***Background and Purpose*:** Reliable information about utilization of medical services is key for making appropriate decisions of all healthcare systems. Nonetheless, most policy decisions and planning in the rural areas of developing countries are made with the lack of such crucial information. In this article we attempt to reveal the pattern of curative care utilization of rural population in Amol, a county in Northern Province of Mazandaran.

***Materials and Methods*:** In this study 355 patients living in rural area who in the last three month utilized curative care from different providers were interviewed in their doorsteps. All interviewees were heads of family or people age above 15. SPSS software was used for analyzing the data.

***Results*:** About a quarter of patients (24.5%) have referred to their local family physicians. It is noticeable that the proportion of people who referred to GP out of family physicians scheme exceeds the proportion of patients referred to GPs who are working as family physicians in the FMRI scheme. Among the studied variables, only basic insurance, severity of disease, and type of care utilized had significant association with referred or not referred of individuals to their own family physicians.

Conclusions: Family medicine and rural insurance in Iran has increased the overall service utilization of population in rural areas but not in the scale that the government has spent its limited healthcare resources. This raises the concern of inappropriate resource allocation for inappropriate people and inappropriate services.

Keywords: Breast Neoplasms; Breast Self-Examination; Health Knowledge; Attitudes; Practice

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1. Introduction

Reliable information about medical services i.e. health services utilization pattern particularly in pluralistic health systems is key for appropriate local and district decisions such as health resource allocation leading to better planning and management of healthcare system (1-3). Primary healthcare system that is aimed to provide a full coverage of essential healthcare package to the whole population requires a better understanding of healthcare utilization by local population and such information should be used in better management of primary healthcare delivery of operating PHC facilities (2, 4-6). Nonetheless, most policy decisions and planning in the rural areas of developing countries are taken with the lack of such crucial information. Either lack of such information or underutilization of available information should be considered as barriers of improving primary healthcare delivery for remote areas in developing countries in particular (1). Healthcare utilization is determined by many factors, such as those related to individual, environmental, and health systems that have been well explained in the behavioral model of healthcare utilization developed by Andersen and colleagues (7). In contrary to the potential impact of healthcare utilization and its pattern to the health of individuals and health system's resources, the information on the health seeking behavior of population and their utilization of healthcare facilities are limited specifically in developing countries (8, 9). It is more than a decade that Family Medicine and Rural Insurance (FMRI) scheme has been introduced to Iran's primary healthcare network. In this scheme, all individuals living within the catchment area of local rural health centers are entitled to enroll and utilize the services provided by Family Physicians (FP), the General Practitioners (GP) who are based in these facilities and are paid on capitation basis by third party payers. Based on the Act, all rural population who are not covered by any medical insurance could freely enroll with their local FP where their premium is fully paid by government to the rural insurance fund that is a sub-division of Iranian Health Insurance Organization, which itself is a public health insurance institution. Based on different reports, the scheme has been expanded as it was planned covering the whole population of the country living in rural areas and towns with less than 20000 populations which accounted for some 28 million by 2016 (10). In spite of its well expansion, there is no report to show to what extent primary healthcare facilities under FMRI initiative are utilized by enrolled rural population when they seek for curative care. Then, in this article, the researchers attempt to reveal the pattern of curative care utilization of rural population in Amol, a county in Northern Province of Mazandaran.

2. Materials and Methods

The current research was a cross-sectional study carried out in winter 2017. In this study using Krejcie and Morgan's sample size determination table, 355 patients living in rural areas who had utilized curative care from different providers in the last three month were randomly selected and interviewed in their doorsteps. All interviewees were the heads of family or people aged above 15. A self-designed questionnaire was used for data collection. Content validity of questionnaire was checked based on the comments of informed opinions. Before using the

questionnaire in the main study, it was employed among a small number of patients to find any complexity and misunderstanding. After amending the required changes, it was used in the main study. The respondents were free either to participate or reject taking part in the interview. SPSS Software, version 20, was run for analyzing the data using inferential statistics and Chi-Square test.

The research project approval number is 410 and its ethical code is: IR.mazums.rec. 1395.410

3. Results

In this study, 355 individuals living in the catchment area of rural primary healthcare centers under FMRI initiative were interviewed. These were people who had visited their selected family physician or other physician at least once in the past three month. The average age of respondents was 36.3 years (1-82 years). In terms of treatment cost, on average, individuals spent 704370 (Maximum 70000000) Rials (1US$=38000 Rials). The average transport cost of respondents was 277180 (Maximum 500000) Rials. Considering the cost of treatment, the majority (some 90%) of participants had the ability to pay. In the case of using no care for a felt need, the respondents reasoned the cost of care. The interviewees were from people of different background in terms of individual and socio-demographic characteristics. Table 1 presents some of the characteristics of the respondents.

Table 1. Some characteristics of the respondents who had utilized curative care in the past three month in Amol in 2017

Characteristics/Frequency		Frequency	Percent	Total	Percent
Sex	Female	201	56.6	353	99.4
	Male	152	42.8		
Marriage	Single	100	28.2	353	99.4
	Couple	230	64.8		
	Divorced or Widow	23	6.5		
Education	Illiterate	74	20.8	353	99.4
	Up to high school	165	46.5		
	High school	68	19.2		
	Academic	46	13		
Job	Jobless	238	67	344	96.9
	Employed or Pension receiver	31	8.7		
	Farmer, labor, self employed	75	21.1		
Economic Status	Excellent and Gooc	35	9.9	331	93.2
	Average	195	54.9		
	Weak or very weak	101	28.5		
Type of Insurance	Uninsured	6	1.7	350	98.6
	Rural insurance	129	36.3		
	Other insurance	215	60.6		
Supplementary Insurance	Yes	59	17.1	345	97.2
	No	286	82.9		
Benefit Entitlement	Yes	92	25.9	348	98
	No	256	73.6		
Chronic diseases background	Yes	131	36.9	335	94.4
	No	204	57.5		
Follow up care taker	Yes	103	29	330	93
	No	227	63.9		
Severity of recent disease	Low	29	8.2	353	99.4
	Moderate	178	50.1		
	Sever	131	36.9		
	Very sever	15	4.2		
Type of care utilized	Outpatient	309	87	348	98
	Inpatient	39	11		
Care provider	Family physician	87	24.5	355	100
	Other GP	141	39.7		
	Specialist	127	35.8		
Type of facilities	Public hospital	120	33.8	350	98.6
	Private office	142	40		
	Local health center	88	24.8		
Reason for selection	Price	104	29.3	272	76.7
	Quality	88	24.8		
	Distance	34	9.6		
	Past experience	40	11.3		
	Waiting time	6	1.7		

As the above table indicates, the respondents had a diverse background that could potentially influence individual behavior of seeking care. Also, as shown in the table, just about a quarter of patients (24.5%) had referred to their local family physicians.

Among the studied variables, only basic insurance, severity of disease and type of care utilized, level of care providers, and type of facilities had significant association with attending or not attending of individuals to their own family physicians. In this regards, people with rural insurance, people with less sever conditions, and patients seeking outpatients services significantly referred more to family physicians than their counterparts. Also, significantly more people referred to non-family physicians than family physicians, and more people went to public hospitals or even private offices than local health center. Factors associated with referring or not referring to the family physicians among people who had attended to physicians in the past three months is presented in Table 2.

Table 2. The association between attending or not attending to family physicians and some associated factors among people living in rural areas in Amol in 2017

Variable/Attending		Family physician		Nonfamily physician		P value
		Frequency	Percent	Frequency	Percent	
Type of Insurance	Uninsured	1	16.7	5	83.3	.001
	Rural insurance	46	35.7	83	64.3	
	Other insurance	39	18.1	176	81.9	
Severity of recent disease	Low	6	20.7	23	79.3	0.0009
	Moderate	59	33.1	119	66.9	
	Sever	16	12.2	115	87.8	
	Very sever	5	33.3	10	66.7	
Type of care utilized	Outpatient	80	25.9	229	74.1	.012
	Inpatient	3	7.7	36	92.3	
Care provider	Family physician	87	100.	0	0.	0.000 [a]
	Other GP	0	0.	141	100.	
	Specialist	0	0.	127	100.	
Type of facilities	Public hospital	0	0.	142	100.	0.000[a]
	Private office	0	0.	120	100.	
	Local health center	86	97.7	2	2.3	

*exact significant

As Table 2 indicates, even among rural population living in the catchment area of local health centers who are freely covered by rural insurance scheme, about one third of them (35.7%) had referred to their family physicians. It is noticeable that the number of people who attended to GP out of family physicians scheme (141) exceeded the number of patients attended to GPs who are working as family physicians (87) in the FMRI scheme.

4. Discussion

To the best of our knowledge, this is the first study in Iran investigating the utilization of family medicine by rural population and associated factors. In this study as the results have shown, family physicians were less referred to by enrolled population where they were seeking for a cure. People who referred to family physicians were more individuals with rural insurance, as this type of insurance does not cover any services outside the family physician framework. Meanwhile, people with more sever conditions and patients for inpatient care directly referred to non-family physicians. Like previous studies in this province (11), there was no association between socio-economic factors and utilization of family physician's services. The findings of this study was found to be consistent with the other studies in Iran that found an association between health insurance and seeking healthcare in Iran (12, 13) and other healthcare settings (1, 14-16). Low level of reference to family physicians found in this study could be interpreted with moderate to low satisfaction with family physicians as reported by other studies (17, 18). This could also be as a result of ineffective referral system linking family physicians with other healthcare providers as reported by other authors (19-23), or the low quality of such services i.e. its structural quality (24).

In this study, a greater percentage of people with rural insurance who were covered by specific health insurance, that is premium free with highly discounted coinsurance of 10% instead of 30% for other insured, have referred to their own family physicians (35.7%) compared to 18.1% of people in the same community with other types of health insurance. Actually it should be taken as the failure of FMRI in Iran. Looking at this finding from a different perspective, one can say healthcare providers operating out of FMRI by meeting the demands of 64.3 to 83.3% of rural population still play a crucial role in providing curative care to population in rural areas. It means the generous allocation of limited healthcare resources in Iran to the national FMRI did not result in directing rural population to utilize their local facilities as the first point of contact. The findings of the present study concerning more utilization of rural insured of family physicians better explained the previous research in this province, and highlighted the better performance of family medicine in providing different curative cares (25).

As Table 1 indicates, just 24.5% of the respondents had referred to their local FD among all curative care providers with statistically significantly more patients referring to these FDs, and they were covered with rural insurance the use of its benefit package was subject to initiating care from local FDs. In this regard, as Table 2 indicates, just 35.7% of the people covered by rural insurance have attended to their FD, and the majority of them (64.3%) have selected other non-family physicians. This meant that the majority of rural population studied in this study who had rural insurance have selected and expectedly paid to other curative care providers out of their own pocket instead of using the benefit package of rural insurance freely. This is the most crucial point in our study that has policy implication for appropriate decision in better allocation of limited healthcare resources. In another sense, both government (through its capitation payment by third party payer) and the patients themselves (through their

out-of-pocket payment for no-family physicians at service delivery point) spend for curative care in rural area. Accordingly, this situation should be interpreted as misallocation of limited resources in public health sector in Iran. In this point of view, the question of allocating these resources to FDs is: Are they paid appropriately to the right providers and for the right population? Not using of paid FDs by rural population could be due to low quality of these services as perceived by expected population. Further analysis as presented in Table 2 shows that people with severe conditions have significantly utilized services of non-family physicians that can support the low satisfaction of low perceived quality of FDs and its unacceptability by the majority of people for whom the government pays.

The findings of the current study were in contrast with a study that found the probability of seeking care in Iran to be equal to 69.5 % with less application of care by population living in remote areas (12). In this study, the researchers have found that even in rural areas a greater percentage of studied population has utilized curative care. This could be interpreted as the consequences of implementing the FMRI in Iran that have reportedly been able to make outpatient curative care more accessible to rural population with lower cost. The findings of our study support the view of policy makers in Iran who believe that expanding universal insurance coverage will increase health services utilization (26).

Taking into account both of these findings, FMRI and spending for it by government have to some degree increase the accessibility and utilization of curative care in general, but the majority of people for whom the government pays are not using the services. Therefore, keeping this achievement and skipping the misallocation of limited resources in terms of paying for those who do not utilize such services requires a better targeting in the allocation of government funds. Such problem was also pointed out by another authors concerning the capitation payment method for the GP in the circumstances where the provider has limited choice to select its own family physicians (27).

In a study carried out in Zambia (28), researchers found health need was the most prominent factor that influenced the health care utilization. Such finding was reported by other studies, as well (29-32). Taking this point as one of the important determinants of healthcare provider choices, this study revealed that an association between the severity of disease and the utilization of non-family physicians could be a concern of consumers on the quality of care.

In the present study, 56.6% of the service utilizers were female, which shows a higher percentage in comparison with the proportion of male utilizers with 42.8%. Furthermore, The more utilization of health services by females in this study as compared to males was found to be compatible with the finding of other studies (33-36).

Finally, given the findings of this study and discussion provided, it could be concluded that FMRI has generally increased the service utilization of population in rural areas but not in the scale that the government spend its limited healthcare resources for rural population and for the services that are not accepted by majority of them. This case raises the concern of inappropriate resource allocation for inappropriate people and for inappropriate services.

Conflict of interest

The authors declare there is no conflict of interest.

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