



Use of Health Care Services and Associated Factors among Women

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Abstract

Background: To estimate the prevalence and analyze factors associated with both public and private health services utilization in women population in a western district of Iran.

Methods: A cross-sectional study with 1200 individuals aged 18-49 years carried out in different districts of Sanandaj City, western Iran, in 2012. The main outcome variable was use of health service in the previous 12 months. The independent variables were age, education level, place of residence, marital and pregnancy status, household wealth, occupation and duration time of employment, and rating of quality of health services.

Results: The prevalence of public and private health services utilization were 60.8% [95%CI: 57.8, 63.8] and 53.8% [95%CI: 50.8%, 56.8%], respectively ($P=0.001$). After controlling other investigated factors using logistic regression; the academic educational level (OR=1.36, 95%CI: 1.03, 1.80; OR=1.76, 95%CI: 1.33, 2.33), residents of urban (OR=1.65, 95%CI: 1.10, 2.47; OR=1.60, 95%CI: 1.10, 2.42), pregnancy status (OR=2.38, 95%CI: 1.60, 3.55; OR=2.36, 95%CI: 1.61, 3.47), and high level of quality of health services (OR=1.61, 95%CI: 1.15, 2.27; OR=1.70, 95%CI: 1.20, 2.40) were found to be predictors of utilization of both public and private health care respectively. There was also statistically relation between high level of household wealth (OR=3.01, 95% CI: 2.00, 4.57) and private health services utilization.

Conclusions: Prevalence of health services utilization varied according to the individual and social factors of population studied. Present study emphasizes the need to develop care models that focus on the characteristics and demands of the subjects.

Keywords: Health services, Health care, Health services accessibility, Women, Iran

Introduction

As stated in literatures, one of the most important determinants of health status is health service use (1). So that access to health care might reduce inequalities in mortality and self-assessed health (2). Several studies have reported that health service use is a complex type of behavior resulting from a set of determinants including socio-demographic (3) and health characteristics (4), health service

organization (5), and the epidemiological profile (6), which can lead to a greater or lower use of services. Accordingly, the proportion of health service use is different around the world, 76.0% in Brazil (7), 78.5% in Thailand (8), and 69.5% in Iran (9). Numerous studies on health service use performed in Iran (9-11) have provided important information about variables associated with the

health service utilization in the general population. Different social and individual factors in a study on households living in Markazi Province, indicating that the subjects with female sex, higher household wealth index, fewer years of education, higher income level, as well as those who were insured tend to use the outpatient health services more than other subjects (10). Another study, to examine current patterns of health care-seeking behavior among residents in Tehran, showed that increasing social awareness, continuous education, improving health insurance system and universal coverage may help both the health system to be performed appropriately and utilization of health care services (11).

There was a health service transition in Iran after the Islamic revolution. For example, Imdad (Relief) Committee Health Insurance was established in 1979 to provide the basic level of insurance coverage for poor citizens (12). The Medical Services Insurance Organization was created based on the Public Health Insurance Law in 1994 to cover a wide range of uninsured Iranian population (13). In addition, an increased government interest in the privatization of health care services has also shown in recent years (14).

Some epidemiological data such as knowing how often the individuals use health care services as well as the factors associated with these episodes are essential within the health net for planning future programs in the sector and for the establishment of public policies. Therefore, the aim of the present study was to investigate the determinants of healthcare utilization in women population in a western district of Iran.

Materials & Methods

This cross-sectional study was conducted in 2012 in the catchment area of five health centers in different districts of Sanandaj City, western Iran.

For this survey, five health centers were randomly selected using random numbers table. Based on census method, all women who came to the health centers during the period of data collection (Forty days) and consented to participate in the study were enrolled. Totally, 1200 women were interviewed during the study. Of these, 87.5%

agreed to participate. For a detailed description of the study including baseline characteristics of participants see earlier report (15). After explaining the purpose of the study for each participant, the recruitment procedure started with both written and verbal informed consents.

Our data were collected from an anonymous self-administered questionnaire by a single interviewer that was adequately trained. The questionnaire covers a wide range of demographic characteristics including age, education level, place of residence, marital and pregnancy status, household wealth, occupation and duration time of employment, rating of quality of health services, and use of health services. The main outcome variable was use of health services as measured by a question: "Have you used any health services during the past 12 months?" Responses to this question included 'Yes' and 'No'. The types of health services that were assessed included hospital and medical office visits (private or insured).

This study aimed to describe patterns of health service use and examine their relation to the following demographic characteristics: age (divided into 3 groups: 18-28, 29-39 and 40 and over); pregnancy status (Yes/No); education level into 2 categories (Non-academic and Academic); marital status (married and single); occupations (Housewife and Working); place of residence (Urban and Rural), and self reported household wealth status & rating of quality of health services (Responses to these questions included 'Bad', 'Reasonable', and 'Good').

We used simple coding to code the independent variables as each level of variables is compared to the reference level. Bivariate and multivariate analyses were carried out at 95% significant level using STATA Version 11.0 (Stata Corporation, College Station, Texas, USA). In bivariate analyses, a single logistic regression was used to assess variables associated with use of health services during the past 12 months. We constructed multivariate logistic regression and all variables included in the crude analysis were simultaneously entered the adjusted analysis model. The Hosmer-Lemeshow test was applied to assess the model goodness-of-fit.

Results

The government (public) and the private health services utilization rates in the 12 months preceding the interview were reported by 60.8% [95%CI: 58.0, 64.0] and 53.8% [95%CI: 50.8%, 56.7%] of

respondents, respectively ($P=0.001$). Table 1 shows the unadjusted and adjusted odds ratios of all investigated variables associated with government (public) health services use among women.

Table 1: Unadjusted and adjusted odds ratios of all investigated variables associated with public health services use among women

Variable	Coefficient	SE	Unadjusted OR[95% CI]	P-value	Coefficient	SE	Adjusted* OR[95% CI]	P-value
Age group								
18-28 yr	-	-	1.00	-	-	-	1.00	-
29-39 yr	0.21	0.13	1.24[0.95, 1.60]	0.108	0.12	0.28	1.13[0.65, 1.96]	0.668
+ 40 yr	0.57	0.24	1.77[1.10, 2.84]	0.018	0.45	0.30	1.56[0.87, 2.79]	0.133
Educational level								
Non-academic	-	-	1.00	-	-	-	1.00	-
Academic	0.30	0.13	1.35[1.05, 1.74]	0.022	0.31	0.14	1.36[1.03, 1.80]	0.031
Occupation								
Housewife	-	-	1.00	-	-	-	1.00	-
Working	0.21	0.13	1.23[0.96, 1.58]	0.105	0.10	0.45	1.11[0.45, 2.70]	0.822
Duration of employment								
0	-	-	1.00	-	-	-	1.00	-
1-5 yr	0.19	0.14	1.21[0.93, 1.58]	0.163	0.07	0.46	1.10[0.44, 2.61]	0.883
+ 5 yr	0.30	0.20	1.34[0.91, 1.98]	0.137	-0.07	0.48	0.93[0.36, 2.39]	0.885
Marital Status								
Single	-	-	1.00	-	-	-	1.00	-
Married	0.26	0.13	1.30[1.01, 1.66]	0.045	ND	ND	ND	ND
Place of residence								
Rural	-	-	1.00	-	-	-	1.00	-
Urban	0.52	0.17	1.67[1.21, 2.32]	0.002	0.50	0.21	1.65[1.10, 2.47]	0.015
Pregnancy								
No	-	-	1.00	-	-	-	1.00	-
Yes	0.90	0.20	2.41[1.63, 3.58]	<0.001	0.87	0.20	2.38[1.60, 3.55]	<0.001
No answer	-0.05	0.14	0.95[0.73, 1.25]	0.733	ND	ND	ND	ND
Quality of health services								
Bad	-	-	1.00	-	-	-	1.00	-
Reasonable	0.41	0.16	1.50[1.11, 2.04]	0.009	0.43	0.16	1.54[1.12, 2.11]	0.008
Good	0.47	0.17	1.60[1.15, 2.22]	0.005	0.48	0.17	1.61[1.15, 2.27]	0.006
Household wealth								
Bad	-	-	1.00	-	-	-	1.00	-
Reasonable	0.26	0.14	1.30[0.97, 1.72]	0.073	0.10	0.30	1.11[0.62, 1.97]	0.724
Good	0.50	0.17	1.64[1.17, 2.30]	0.004	0.30	0.21	1.34[0.89, 2.02]	0.155

* Adjusted for all other variables in the table; SE: Standard Error; OR: Odds Ratio; CI: Confidence Interval; ND: No Data

The bivariate analysis showed that women with academic education level had a 35% higher prevalence of health services use during the past year. Higher prevalence of public health services use was also found among those aged 40 years or older (compared to the group aged 18 to 28 years) and those who reported an income good status.

Utilization of government health services was also found to be associated with pregnancy and marital status, place of residence and quality of health services. Married respondents were 1.30 more likely to utilize the health services than unmarried ones. Pregnant women were 2.41 times more likely to use government health services. With regard to rating of quality of health services, individuals with reported quality as Good were 1.6 times more likely to visit the health centers than those with reported rating of quality of health services as Bad (Table 1).

Significantly higher proportions of urban residents received public health services than rural [OR=1.67 95%CI: 1.21, 2.32]. Occupation and duration of employment were not statically associated with public health services use.

Even after adjusting for the other variables investigated, the multivariate analysis showed that the prevalence of public health services use remained higher among urban women (65% higher compared to rural women) and those with higher educational level (36% higher in the academic educational level compared to non-academic). The frequency also remained higher among pregnant women and positive self-assessment of quality health services (Table 1).

In Table 2, we present crude and adjusted odds ratios of private health services use in women during the 12 months prior to interview, according to demographic and socioeconomic variables. Based on univariate analysis, the private health services utilization was significantly associated with age, level of education, occupation status & place of residence, pregnancy status, household wealth (family income) and rating of quality of health services. In the adjusted analysis, educational level, pregnancy status, place of residence, household

wealth (family income) and rating of quality of health services were associated with the utilization of private health services.

Discussion

The prevalence of health service use in the public health system of Iran decreased in the last years. A national health survey (9) conducted in a sample of 3,514 households in 2003 found prevalence of 69.5% of utilization of public health services; in the present study, the prevalence of public and private health services were 60.8% and 53.8%, respectively. Another study (10) showed the prevalence of 66.4%.

The prevalence of health service use is the result of processes that involve several factors and requirements. An important modulator of this phenomenon is the individuals' socioeconomic status. In bivariate analysis, our study found an ascending trend in the use of health service in those with higher economic status, as also reported by other studies (7,9,16).

We also found no significance difference between public health services use and economic status, after adjusting for other factors. This indicates that use of public health service is related to other factors.

In contrast, a study (7) to describe the prevalence of medical visits and associated factors in an adult population found that even after adjusting for the other variables, the prevalence of medical visits remained higher among those with higher income. Despite having greater disease load and, therefore, greater need for medical care, individuals in the lowest income distribution deciles show a lower frequency of medical visits and less access to other services in the health area(17).

Among the factors that make the population use the health services, advanced age is well established in the literature. In other words, several studies have found that younger individuals were less likely to use health services than older participants (7,16,18,19).

Table 2: Crude and adjusted odds ratios of private health services use in women during the 12 months prior to interview, according to demographic and socioeconomic variables

Variable	Unadjusted				Adjusted*			
	Coefficient	SE	OR[95% CI]	P-value	Coefficient	SE	OR[95% CI]	P-value
Age group								
18-28 yr	-	-	1.00	-	-	-	1.00	-
29-39 yr	0.28	0.13	1.33[1.03, 1.71]	0.030	-0.05	0.28	0.95[0.55, 1.66]	0.865
+ 40 yr	1.03	0.25	2.80[1.72, 4.54]	<0.001	0.43	0.30	1.54[0.85, 2.80]	0.155
Educational level								
Non-academic	-	-	1.00	-	-	-	1.00	-
Academic	0.52	0.13	1.70[1.31, 2.16]	<0.001	0.56	0.14	1.76[1.33, 2.33]	<0.001
Occupation								
Housewife	-	-	1.00	-	-	-	1.00	-
Working	0.29	0.13	1.34[1.04, 1.71]	0.021	0.06	0.45	1.10[0.44, 2.60]	0.890
Duration of employment								
0	-	-	1.00	-	-	-	1.00	-
1-5 yr	0.31	0.13	1.36[1.05, 1.77]	0.022	0.14	0.45	1.15[0.47, 2.80]	0.756
+ 5 yr	0.28	0.19	1.32[0.91, 1.93]	0.144	-0.21	0.48	0.81[0.32, 2.10]	0.663
Marital Status								
Single	-	-	1.00	-	-	-	1.00	-
Married	0.14	0.13	1.15[0.90, 1.48]	0.261	ND	ND	ND	ND
Place of residence								
Rural	-	-	1.00	-	-	-	1.00	-
Urban	0.40	0.17	1.50[1.10, 2.10]	0.019	0.47	0.21	1.60[1.10, 2.42]	0.026
Pregnancy								
No	-	-	1.00	-	-	-	1.00	-
Yes	0.84	0.19	2.32[1.60, 3.55]	<0.001	0.86	0.20	2.36[1.61, 3.47]	<0.001
No answer	0.07	0.14	1.10[0.82, 1.40]	0.597	ND	ND	ND	ND
Quality of health services								
Bad	-	-	1.00	-	-	-	1.00	-
Reasonable	0.38	0.15	1.50[1.10, 2.00]	0.014	0.40	0.16	1.50[1.10, 2.05]	0.016
Good	0.50	0.17	1.64[1.20, 2.30]	0.003	0.52	0.18	1.70[1.20, 2.40]	0.003
Household wealth								
Bad	-	-	1.00	-	-	-	1.00	-
Reasonable	0.54	0.14	1.72[1.30, 2.28]	<0.001	0.55	0.30	1.73[0.97, 3.10]	0.063
Good	1.21	0.17	3.40[2.39, 4.74]	<0.001	1.10	0.21	3.01[2.00, 4.57]	<0.001

* Adjusted for all other variables in the table; SE: Standard Error; OR: Odds Ratio; CI: Confidence Interval; ND: No Data

Bastos et al.(18) in a study to estimate the prevalence and analyze factors associated with the utilization of medical services in the public health system, reported that in the crude analysis, for the male sex, the health services utilization was associated with increase in age.

Even after adjustment for income, individuals aged 60 to 69 years reported greater utilization of health service. This is also more evident among women, as an inverse tendency between age group and health services utilization is observed. Based on bivariate analysis in present study, higher prevalence of health service use was found among those aged 40 or older, as shown in other studies (7). The expansion of the coverage of healthcare plans for older group may be one of the possible explanations for this relation. It is considerable that in another study in Iranian population age was no significant factor associated with health service utilization (10).

With regards to predisposing factors which include demographic characteristics and schooling (20), our results were consistent with previous findings that married individuals were more likely to use public health services than bachelors (21). It is hypothesized that married people are influenced by their companions to attend more the medical services, but the literature about this association is controversial. For example, Grima et al.(21) found a significant relationship between marital status and utilization of health care services. The authors reported that married respondents were 2.2 times more likely to utilize the health services than unmarried ones. In addition, Goodridge et al.(22) regarding examine rural-urban differences in healthcare utilization, concluded that marital status appears to exert a substantial and independent effect on several types of healthcare utilization. But this significant relation has not found in other studies (9,10,18).

Educational level was associated with both public and private health services utilization, where the subjects with academic educational level were more likely to use the public and private health services. Comparisons between the significant variables in bivariate and multivariate analyses give to us points about the use of health services. In biva-

riate analysis, it is shown that educational level is considered as probably related factor. Interestingly, after adjusting the other variables, a significant relationship was found between health services use (public and private) and educational level. Although in two different studies in Brazil (18,23), inverse association between level of schooling and public services utilization was demonstrated. This issue can be explained by the fact that the choice and use of the type of health service vary according to socioeconomic level. Schooling level was not associated with the prevalence of medical visits in other studies (7,24).

In accordance with results of other studies (9,22), the likelihood of receiving health care was significantly lower for rural women. There may be several probabilities that help to account for the difference in health care utilization. One may be Laditka et al.(25) assertion that there is a disparity between rural and urban settings in terms of the primary care services available. A second possibility is that there is a differential access to healthcare for primary care among rural residents. For example, health network development in Iran guarantees primary health care for 100% of urban population and about 85% of the rural population (26). The implementation of Family Physician program and increasing the coverage of health insurance was also been an effective programs to decrease the differences of personal density between urban and rural areas (27). Improving health care quality and health services access, particularly in the poorest groups may also have played a role in reducing the inequalities in health system (9).

Based on both crude and adjusted analyses, our results showed a significant relationship between both public & private health services utilization and pregnancy status. There are some reasons that led to this concentration of the pregnant women compared to non-pregnant women in both public and private services. First, the WHO recommends at least four antenatal care visits during pregnancy in developing countries (28). Second, pregnant women go to health care centers not only for pregnancy care, but also for their child care. The use of antenatal care varies between different countries among pregnant women. For example,

in northern Nigeria, only 26% of the women had received any antenatal care compared to 85.8% of Canadian pregnant women (29,30).

Present study also found that one of the most important predictor of health services utilization is individuals' perceptions of quality of health services. Poor accessibility of health facilities is the main barrier to use of health services (15,31). A population-based birth cohort study carried out Victora et al.(31) in southern Brazil in 2010 revealed that mean quality scores were significantly higher in the private 9.3 than in the public sector 8.1. The authors concluded that special efforts must be made to improve quality of care in the public sector. In addition, according to the results of survey conducted by Sharifirad et al.(32) to determine women's viewpoint of quality gap in primary health care centers of Isfahan. The least mean quality gap was in assurance and the highest mean quality gap was in the tangible dimension. Rajabi et al.(33) conducted a study with the purpose of explaining the values and principles of health system, and as a pre-requisite to compilation of Iran's health system reform plan at 2025 and reported that the principles of this health system were equitable access (utilization), prevention and health promotion, institutionalizing the ethical values, responsiveness and accountability. Responsiveness is one of the common indicators by WHO to evaluate the performance of health systems on nonmedical expectations of consumers (34). Based on this report, Rashidian et al.(35) in a study to measure the health system responsiveness and its related factors in Iran health system reported that more than 90% of respondents believe that responsiveness issues are very important.

There were a number of study limitations and strengths that should be noted. The high response rate (87.5%) is strength of the present study and there was a single interviewer that unawares of the purpose of the study, reducing the chance of biases. In cross-sectional studies, exposure and outcome are investigated at the same time; therefore an important limitation of these studies is that they are unable to establish causal relationships. Moreover, the proportion of women receiving health services might be underestimated due to

“recall bias” in cross sectional surveys. Finally, the generalizability of these study findings is limited by the use of a non random sample of women.

Conclusion

Despite the fact that the promotion in the national health indices and improvement in the quality and quantity of health care services, there were differences in the prevalence of public and private health services among women. Also, individual and social factors such as household wealth, place of residence, pregnancy, education level and rating of quality of health services have revealed to have impacts on health services utilization. Moreover, the findings of this study are essential to enhance our knowledge regarding the health characteristics of women population. Consequently, this study emphasizes the need to develop care models that focus on the characteristics and demands of the subjects.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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