

## Socioeconomic factors affecting patients' utilization of primary care services at a Tertiary Teaching Hospital in Riyadh, Saudi Arabia

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ABSTRACT

**Background:** Primary care services utilization is dependent on socioeconomic factors. It is proven that variation in socioeconomic factors result in discrepancies in the use of such services. Admittedly, research is limited on the socioeconomic factors affecting the utilization of primary care services in Saudi Arabia. **Objectives:** The aim of this research was to study the effect of the main socioeconomic factors affecting patients' utilization of primary care services at a tertiary teaching hospital, Riyadh, Saudi Arabia. **Materials and Methods:** A cross-sectional study was conducted from January to February 2014 in a primary care clinic of a tertiary teaching hospital in Riyadh city; subjects selected using a random consecutive sampling technique. A self-administered questionnaire in Arabic was given to the participants to collect the data which comprised sociodemographic data, utilization measures, and health needs. The data were analyzed using SPSS version 21. **Results:** A total of 358 subjects participated in the study. The main factors that best determine the utilization of primary health care clinic in a tertiary teaching hospital were the possession of a health insurance ( $P = 0.046$ , odds ratio [OR] = 8.333), and bad self-health-perception ( $P < 0.014$ , OR: 2.088). Chronic illness was also associated with higher utilization (OR = 2.003). **Conclusion:** Our results reveal that chronic health problems, self-health-perception, and health insurance are the most significant socioeconomic factors affecting the utilization of primary care services.

**Key words:** Primary care, services utilization, socioeconomic

### INTRODUCTION

The International Conference on Primary Health Care (PHC), in Alma-Ata in 1978 declared that the PHC is key to the ultimate attainment of "health for all" and the reduction of the gap in health status between developing and developed countries.<sup>[1]</sup>

Through a large number of centers, the PHC system in the Kingdom of Saudi Arabia (KSA) provides most of the curative and preventive health services. Donabedian

suggested the study of patient satisfaction as a means of evaluating health care services.<sup>[2]</sup> In the last few decades, Saudi Arabia has undergone rapid urbanization and socioeconomic transformation, resulting in a rise in the people's demands and expectations for good health services. Consequently, it is essential to create precise methods of assessing PHC services. The features of the PHC system that play an important role in patient utilization and satisfaction of health care services are affordability, accessibility, availability, and equity.<sup>[3]</sup>

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Planning and evaluating the health care service paves the way to providing an adequate, efficient system to serve a wide range of consumers in the society.<sup>[4]</sup> Therefore, the analysis of the determinants that could influence the utilization of the services offered by health professionals could provide a vision of future strategies for building an efficient health system to serve the community.<sup>[4,5]</sup> Access to PHC is crucial for the maintenance of good health. Recent studies indicate that the disparities in the social and economic factors affecting people in a country result in discrepancies in the use of health services.<sup>[6]</sup> Unfortunately, people of low socioeconomic status are faced with difficulties and barriers when looking for health care. Though their demand for the service is greater, in Europe and North America their access to it is less than those with higher incomes, and they are also less likely to be offered appointments.<sup>[7-9]</sup> In contrast, a regional study conducted in Palestine concluded that patients living in poor conditions reported a higher utilization of PHC services than those whose living conditions were better.<sup>[10]</sup> Nonetheless, the reports on health care services used by people in the high-income bracket show that there is a direct relationship between wealth and disease.<sup>[11]</sup> Discrimination by the health care provider is one of the major barriers that poor and homeless people encounter.<sup>[12]</sup> It has been suggested that the improvement of the economic status will facilitate accessibility to health care services.<sup>[13]</sup> Moreover, self-assessed health, age, income, residential area, and gender were found to be the most important factors affecting health-seeking behavior, and self-rated health status the most critical.<sup>[14]</sup> In 2002, a study in Saudi Arabia concluded that patients' gender, education, and occupation were the most important while age was the least important characteristic associated with factors affecting utilization.<sup>[15]</sup> The aim of this study was to determine the effect of the main socioeconomic factors affecting patients' utilization of primary care services at a Tertiary Teaching Hospital, Riyadh, KSA.

## MATERIALS AND METHODS

The research was carried out from January to February 2014, at the PHC Clinic at a University Tertiary Care Teaching Hospital, Riyadh, KSA. The cross-sectional study, using random consecutive sampling technique, included all the patients present in the first 2 hrs of the working hours of PHC clinic. On the next day, we took all patients present in the next 2 hours. We applied this method until we reached the end of the working day of the PHC clinic, and then started all over again from the first 2 hrs. Illiterate patients and those whose vision was impaired were helped to complete their questionnaires. All patients attending PHC services in the above-mentioned setting and older than 18 years were considered eligible. The sample size

of 358 was determined based on a requirement of a 95% confidence limit with 5% maximum error of estimate and a proportion of 64.7% using a suitable formula.<sup>[16]</sup>

The formula used to calculate the sample size:

$$n = (Z_{\alpha/2})^2 P (1-P) / d^2$$

$$n = (1.96)^2 0.647 (1-0.647) / 0.05^2 = 350.95 - 351 \text{ participants.}$$

A self-administered three-part questionnaire was distributed almost equally to both male and female patients attending PHC clinic. The first section included of questions on sociodemographic and economic factors. The second section assessed the need for health care. The third section assessed the utilization of healthcare services.

The independent variables included questions on gender, age, marital status, type of housing and location, highest level of education attained by the main breadwinner of the family, and the number of family members. The need for health care was measured in relation to the self-perception of one's own condition of health, and whether a participant had diabetes, hypertension, or asthma, that are common chronic diseases in Saudi Arabia. The smoking status was elicited in the questionnaire as well. Utilization of health care services was evaluated mainly by inquiring about the number of visits to primary care clinic of tertiary teaching hospital in the last 12 months. Those who had visited the clinic more than 3 times during the above-mentioned period were considered high users, whereas the rest were regarded as low users. However, questions about having a file in other hospitals, having a file in primary care centers near participants' homes, visits to district primary care centers in the last 12 months, and visits to private hospitals or clinics in the last 12 months were included in the questionnaire. A pilot study of 25 participants was conducted to evaluate the feasibility of the sampling technique, the amount of time to be spent on data collection, and the number of students required to collect the data. In addition, it was important to assess the data collection tool for clarity, appropriateness, and modifications. However, these 25 participants were not included in the study. Necessary modifications were made according to the results of the pilot study. Cross tabulation between the utilization of PHC clinic services and other variables was applied. Bivariate analysis was used to measure crude odds ratios (ORs) with 95% confidence intervals (95% CIs). All statistical calculations were carried out using software SPSS version 21.0 (Licensed Material - property of IBM Corp. copyright IBM corporation and others 1989, 2012.).<sup>[16]</sup> Since the dependent and independent variables were on the qualitative matter in the questionnaire distributed among subjects, Chi-square test and its *p*-value were calculated. Ethical approval was obtained from the college and the concerned hospital department. A written informed

consent was obtained from the participants before the completion of the questionnaire and their anonymity was assured.

## RESULTS

Out of 446 questionnaires distributed, 358 (80.27%) patients fulfilled the inclusion criteria and completed the

questionnaire. One hundred and eighty-six (52%) were males, and 172 (48%) were females. More than half of subjects in the sample (51.7%) were older than 45 years [Table 1].

**Table 1: Sociodemographic characteristics of the study sample**

Characteristics	N (%)
Gender	
Male	186 (52.0)
Female	172 (48.0)
Nationality	
Saudi	349 (97.5)
Non-Saudi	9 (2.5)
Age (years)	
18-20	22 (6.1)
21-24	25 (7.0)
25-44	126 (35.2)
45-64	144 (40.2)
65 and above	41 (11.5)
Marital status	
Single	61 (17.0)
Married	264 (73.7)
Divorced	10 (2.8)
Widow	23 (6.4)
Residency	
Urban	347 (96.9)
Rural	10 (2.8)
Missing	1 (0.3)
Family income (SR per month)	
<3000	56 (15.6)
3000-5999	99 (27.7)
6000-9999	76 (21.2)
10,000-18,000	98 (27.4)
> 18,000	28 (7.8)
Missing	1 (0.3)
Level of education	
Did not complete	47 (13.1)
Primary	40 (11.2)
Intermediate	27 (7.5)
Secondary	78 (21.8)
Diploma	37 (10.3)
Bachelor	110 (30.7)
Masters, doctorate or higher	19 (5.3)
Family size (family members)	
1-4	91 (25.4)
5-7	134 (37.4)
8	42 (11.7)
> 8	89 (24.9)
Missing	2 (0.6)
Total	358 (100)

SR: Saudi Riyal

The results of the binary association between PHC utilization and the independent variables are shown in Table 2. Seventy (19.6%) out of all participants reported high use (>3 times/12 months) of PHC services. The majority of the subjects (61.5%) reported a visit to private clinics/hospitals at least once in the last 12 months. However, this variable did not show any evidence of association with higher utilization (OR = 1.16,  $p = 0.58$ ). The majority of respondents (65%) reported that they already had a file in the neighborhood PHC clinic, similarly showing no significant association in utilization (OR = 1.236; 95% CI: 0.72-2.12). Although it was observed that gender contributed insignificantly to the prediction of utilization of PHC services, females were found to use PHC clinic services more than males (OR = 1.18; 95% CI: 0.701-1.996). Older ages ( $\geq 45$  years) were more likely to utilize primary care services compared to those younger than 45 years (OR=1.31), even though statistically not significant ( $p = 0.307$ ).

The independent variables that showed an association with the PHC utilization were used in multiple logistic regression analysis shown in Table 3. Participants who had high school education or above used the PCH less than those who did not complete their high school education (OR=0.64), even though this did not reach significance level ( $p < 0.193$ ). Diabetic patients were 1.5 times more likely to be high users compared to nondiabetics, but this was statistically not significant ( $p < 0.207$ ). Moreover, for participants who responded yes to other chronic diseases, there was a significant association to higher utilization of PHC clinic services (OR = 2.003,  $p < 0.069$ ). There was an association between the possession of a health insurance and utilizing the PHC services (OR=8.33,  $p = 0.046$ ). Patients who had a monthly income of more than 6000 Saudi Riyal (S.R) were less frequent users compared to patients with <6000 S.R income, but this did not reach a significant level ( $p < 0.153$ ). The utilization of PHC clinic was 2 times higher among those who perceived their health as very poor/poor/satisfactory than among those who reported that they were in excellent/good health ( $P < 0.014$ ).

## DISCUSSION

From the results presented here, we conclude that those who had health insurance tended to use primary care services less than those who did not have an insurance. It is reasonable to think that since more frequent

**Table 2: Binary association between independent variables and the PHC utilization**

Factors	Utilization			Crude OR	
	Low	High	Total N (%)	OR (95% CI)	p-value
Visited private clinics/hospitals last 12 months					
Yes	179	41	220 (61.5)	1.162 (0.682-1.977)	0.581
No	109	29	138 (38.5)		
Having file in neighborhood PHC center					
Yes	191	43	234 (65)	1.236 (0.721-2.121)	0.440
No	97	27	124 (35)		
Gender					
Male	152	34	186 (52)	1.183 (0.702-1.996)	0.528
Female	136	36	172 (48)		
Age (in years)					
18-44 years	143	30	173 (48.3)	1.315 (0.777-2.227)	0.307
45 years and above	145	40	185 (51.7)		
Family size					
1 <sup>st</sup> /2 <sup>nd</sup> /3 <sup>rd</sup> quartile	215	52	267 (75)	1.048 (0.576-1.909)	0.878
4 <sup>th</sup> quartile	71	18	86 (25)		
Smoking					
Nonsmokers	233	58	291 (81.3)	0.876 (0.441-1.743)	0.141
Smokers/ex-smokers	55	12	67 (18.7)		

CI: Confidence interval; OR: Odds ratio; PHC: Primary health care

visits are required, individuals with greater economic power tend to use alternative private services. Age and gender were not significant determinants, whereas they were found to be significant in studies conducted in Greece and Zambia concluding that females used primary health facilities more, and that age was of high significance too.<sup>[14,17]</sup> Moreover, a similar study from KSA had different results regarding patients' gender and age. Another study reported education as an important influence.<sup>[18]</sup>

Surprisingly, in our study, monthly income was not a factor affecting utilization as reported in other studies,<sup>[10,14,19-21]</sup> This is similar to the result of a study done in KSA in 2002,<sup>[15]</sup> that showed no significance could be attributed to equal access by both rich and poor to free health service in KSA, especially to PHC corporation. Moreover, patients' perception of their health contributes to the utilization of primary care services. Utilization of the services provided is greater when the perception of health is excellent or good. A study in Canada showed that patients who had recently stopped smoking used the health services even more.<sup>[22]</sup> However, such a relation between the use of tobacco by smokers and former smokers and the utilization of primary care services was not found in our study. This could be attributed to a bias in answering the question because of social stigma against smokers. The Tobacco Control Program of Ministry of Health in Saudi Arabia suggests that current male smokers constitute 35–45% while another review article suggests that the prevalence

of current smokers in the Saudi population ranges 2.4–52.3%, and prevalence among adults ranges from 11.6% to 52.3%.<sup>[23,24]</sup>

The limitations of our study are as follows: Since our initial focus was on patients above 18 years old, the study results cannot be generalized to embrace the entire population. Besides, as long as the number of older people is high the accuracy of some questions could be affected by recall bias. Moreover, because of free access to the health system in the KSA inequities among the different socioeconomic classes are somewhat eroded, thus influencing certain factors in the study. Furthermore, there was a proportion of uncompleted questionnaires, which could have been dealt with as interviews. The Nationality and Residence were not included in the analysis because the proportion of non-Saudis and the rural population in the survey were low (2.5–2.8%, respectively), which might make statistical comparison unreliable.

## CONCLUSION AND RECOMMENDATIONS

We conclude that age, marital status, family size, smoking habit, number of visits to private clinics and hospitals, gender, educational level, and monthly income showed no significant association with the utilization of primary care services, whereas family class, chronic health problems, self-health-perception, and health insurance showed some levels of significance. Further research on socioeconomic factors on a wider scale is

**Table 3: Multiple logistic regression of the independent variables and PHC utilization**

Factor	Utilization			Logistic regression analysis	
	Low	High	Total N (%)	p-value	Adjusted OR (95% CI)
Marital status					
Single	54	7	61 (17)	0.873	1.04 (0.42-2.76)
Married/divorced/widow	234	63	297 (83)		
Education					
<high school	78	36	114 (31.8)	0.193	0.640 (0.328-1.252)
≥high school	210	34	244 (68.2)		
Diabetes					
No	187	35	222 (62)	0.207	1.546 (0.785-3.045)
Yes	101	35	136 (38)		
Hypertension					
No	190	38	228 (63.7)	0.786	1.099 (0.544-2.179)
Yes	98	32	130 (36.3)		
Asthma					
No	246	53	299 (83.5)	0.099	1.803 (0.896-3.630)
Yes	42	17	59 (16.5)		
Hyperlipidemia					
No	185	36	221 (61.7)	0.888	1.047 (0.554-1.978)
Yes	103	34	137 (38.3)		
Other chronic illnesses					
No	192	33	225 (62.8)	0.069	2.003 (1.112-3.607)
Yes	96	37	133 (37.2)		
Health insurance					
Yes	27	1	28 (8)	0.046	8.333 (1.037-66.667)
No	261	69	330 (92)		
Family income					
<6000 SR	115	40	155 (43.4)	0.153	0.638 (0.344-1.182)
≥6000 SR	172	30	202 (56.6)		
Health assessment					
Good/excellent	204	33	237 (66.2)	0.014	2.088 (1.164-3.745)
Very poor/poor/satisfactory	84	37	121 (33.8)		

SR: Saudi Riyal; CI: Confidence interval; OR: Odds ratio; PHC: Primary health care

recommended to discover their effect on the utilization of primary care services in general and apply the results to the population.

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**Conflicts of interest**

There are no conflicts of interest.

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