

FACTORS INFLUENCING PATIENTS' UTILIZATION OF PRIMARY HEALTH CARE PROVIDERS IN SAUDI ARABIA

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هدف الدراسة: تحديد العوامل التي تؤثر على استخدام المرضى لمقدمي الرعاية الصحية الأولية في المملكة العربية السعودية.

طريقة الدراسة: تم جمع البيانات من خلال استبانة مصممة لتحقيق هدف البحث، حيث تم توزيعها عشوائياً على عينة شملت 408 من المرضى في خمسة مراكز للرعاية الصحية الأولية بوزارة الصحة، وخمسة من مراكز الرعاية الأولية بالقطاع الخاص. وقد تم جمع هذه البيانات خلال الفترة من 15 فبراير إلى 15 مارس 1998م. تم استخدام تحليل التمايز الإحصائي المتدرج للمجموعتين بالنسبة للعوامل المؤثرة على استخدام المرضى لتلك المراكز.

نتائج الدراسة: دلت نتائج الدراسة أن سبعة عوامل من ثلاثة وثلاثين عاملاً لديهم التأثير المعنوي في عملية التمييز بين المرضى الذين يعالجون في المراكز الصحية الحكومية والمراكز الصحية التابعة للقطاع الخاص. هذه العوامل هي: (1) مصدر الدفع، (2) توافر مصادر أخرى للدخل، (3) المسافة بين مكان إقامة المريض والمركز، (4) التعليم، (5) المفاضلة في جنس الطبيب، (6) المفاضلة في اختيار الطبيب السعودي، (7) الجودة المدركة للهيئة الطبية.

التوصيات: توصي الدراسة بالتركيز على ناحية التوزيع الأمثل لمقدمي الخدمة الصحية من ناحية جنس الطبيب، بحيث يكون هناك نوع من توافر الجنسين في كل مركز. كما توصي الدراسة بالاهتمام بجودة الخدمات الصحية المقدمة من قبل المراكز الصحية الأولية في المجموعتين. وتوصي الدراسة أيضاً باستمرار البحث العلمي في مجال الاستخدام الأمثل للخدمات الطبية في مراكز الرعاية الأولية. **الكلمات المرجعية:** استخدام المرضى، مقدمو الرعاية الصحية الأولية، تحليل التمايز المتعدد، جودة الخدمة.

Objective: To determine the factors that significantly discriminate between Ministry of Health (MOH) and private primary health care patients in Riyadh City, Saudi Arabia.

Methodology: Through a self-administered questionnaire, data were collected from 408 randomly selected patients in five MOH primary health care centers and five private dispensaries. Data collection was conducted from February 15 to March 15, 1998. Two-group stepwise discriminant analysis was utilized in analyzing the data.

Results: Seven of the 33 factors were found to be statistically significant in discriminating between MOH and private patients. These factors were: (1) source of payment, (2) availability of other sources of income, (3) distance between residence and

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Primary Health Care (PHC) provider, (4) education, (5) preference for similar-gender doctors, (6) preference for Saudi doctors, and (7) perceived quality of medical staff.

Conclusion: The study notes that PHC providers cannot control the sociodemographic characteristics of patients. Therefore, policy makers should focus on ensuring that PHC facilities have enough male and female doctors. Furthermore, the quality of the medical staff of these facilities should be upgraded to improve the overall quality of the services they provide. The conduct of further studies related to the utilization of health care providers is also recommended.

Key Words: Patients' utilization, primary health care providers, stepwise discriminant analysis, quality of services.

INTRODUCTION

Primary health care (PHC) can be considered the first contact between the patient and the health care system. It includes all the basic health care services provided to every member of the society. Thus, PHC is essential for attaining an acceptable level of health for the general public. It is also an integral and critical component of the entire health care system of any country. Therefore, PHC services should be accessible and available to the entire population, regardless of their economic or social class and geographical location.¹

In the Kingdom, the Ministry of Health (MOH) has the primary responsibility of meeting the health care needs of the general population. The MOH also emphasizes the importance of PHC services by implementing a referral system, the only means of gaining access to secondary and tertiary care. By 1997, the MOH was operating a total of 1,737 PHC centers throughout the Kingdom.²

The government continues to shoulder the bulk of the responsibility for meeting the health care needs of the public. However, the government also emphasizes the importance of the private sector in the overall development including health care of the Kingdom. In fact, the concept of

privatization was highlighted in the Sixth Development Plan.³ The private sector responded so well to this government initiative of privatization, that by 1997, there were 611 private dispensaries operating in various parts of the Kingdom.²

Increasing the number of facilities may be a good start for any PHC initiative. However, the success of any PHC program in accomplishing its objectives and goals is largely dependent on good management. To get high quality of PHC services, the management must continually strive to meet the patients' needs at minimum costs.⁴ Furthermore, the quality of services provided by PHC facilities should not only be maintained, but also continually improved.⁵

This study was conducted with the main objective of determining the factors that influence patients' utilization of PHC providers in Riyadh city. In view of the dearth of published materials in this area, the information generated by this study will be useful for policy makers in their attempt to improve the services available to patients. Specifically, this study aimed to determine the factors that best discriminate between MOH and private PHC patients.

METHODOLOGY

Al-Dayel⁶ and Al-Omar⁷ tested the reliability and validity of an initial version of the

questionnaire utilized in this study and later revised to suit PHC settings. To test the reliability and validity of the revised questionnaire, 10 PHC patients (five MOH patients and five private patients) were asked to answer the questionnaire. Their comments and suggestions were incorporated in the final version of the questionnaire, which measured with coefficient alpha had a reliability of 0.85.

The questionnaire included 11 socio-demographic and 22 attitudinal factors. The responses were ranked on a four-point scale: 1=not important at all; 2=not important; 3=important; 4=very important. A total of 450 questionnaires were distributed to a stratified sample drawn from five MOH-PHC centers and five private PHC centers or dispensaries. It should be noted here that no inclusion or exclusion criteria were used in the selection of respondents. Of the total number of questionnaires distributed, 408 were found valid and included in the analysis (194 from MOH-PHC centers and 214 from private dispensaries). Thus, the response rate of the data collected from February 15 to March 15, 1998 was 81.6%.

The SPSS PC+ statistical package was utilized in the data analysis, a two-group discriminant analysis to answer the study question, a Chi-square test to determine the significance of the function, and the Wilks' Lambda test to determine the significance of each independent variable (note that the new versions of SPSS replace missing values with mean in the DA). Furthermore, descriptive statistics (frequencies, percentages, means and standard deviation) were also used in the data analysis.

RESULTS AND ANALYSIS

Table 1 presents the socio-demographic and attitudinal factors included in the

study. This table shows that, on the average, the MOH primary care patients were older, had more family members, lower educational level and lower monthly income than private patients. The MOH had a higher percentage of Saudis and patients who were in employment. Furthermore, the MOH had a lower percentage of males, married patients, and patients with a source of income other than their employment. Moreover, a much higher proportion of MOH patients had a source of payment other than themselves and also had a relatively better health status than private patients.

The results of the test for equality of group means are shown in Table 2. It can be seen from this table that among the 34 factors considered in this study, only eight factors yielded statistically significant group means between MOH and private patients. These factors were: (1) source of payment, (2) preference for Saudi doctors, (3) nationality, (4) education, (5) distance between residence and PHC provider, (6) availability of same gender doctors, (7) accessibility of PHC provider, and (8) availability of other sources of income.

Table 3 shows that the results of the two-group stepwise discriminant analysis reveal seven factors that significantly discriminate between MOH and private patients: (1) source of payment, (2) availability of other sources of income, (3) distance between residence and PHC provider, (4) education, (5) preference for same gender doctors, (6) preference for Saudi doctors, and (7) perceived quality of medical staff. The results mean that only these seven factors independently and significantly discriminate between MOH and private patients.

The discriminant function was also found to be statistically significant (chi-square=65.857; $p < 0.0001$). A high canonical correlation (about 0.80) for the discriminant function and a high percentage (greater than 85%) of grouped cases correctly classified are also

Table 1: Frequency distribution, means and standard deviation (SD) for the Socio-demographic factors included in the study

VARIABLE	MOH PATIENTS				PRIVATE PATIENTS			
	n	%	Mean	SD	n	%	Mean	SD
Age (years)			3.11	11.02			30.82	8.67
25 years old or less	51	37.78			50	32.26		
26 – 35 years old	51	37.78			64	41.29		
More than 35 years old	33	24.44			41	26.45		
Number of family members			6.59	2.98			5.64	3.04
Five or less	67	42.68			108	61.36		
More than five	90	57.32			68	38.64		
Education			2.93	0.94			3.25	0.91
Little	12	6.19			5	2.38		
Intermediate	53	27.32			41	19.52		
Secondary	68	35.05			70	33.33		
Undergraduate	58	29.90			84	40.00		
Postgraduate	3	1.55			10	4.76		
Gender			0.53	0.50			0.62	0.49
Male	101	53.16			131	61.50		
Female	89	46.84			82	38.50		
Monthly salary			3952.4	2256.4			4312.7	2571.8
Less than SR 2,500	46	33.09			35	28.93		
SR 2,501 – SR 4,999	56	40.29			53	43.80		
SR 5,000 or more	37	26.62			33	27.27		
Nationality			0.80	0.40			0.64	0.48
Saudi	153	79.69			78	36.45		
Non-Saudi	39	20.31			136	63.55		
Marital status			0.65	0.48			0.72	0.45
Married	125	64.77			155	72.43		
Unmarried	68	35.23			59	27.57		
Occupation			0.63	0.48			0.61	0.49
Employed	120	62.83			129	61.43		
Unemployed	71	37.17			81	38.57		
Has other source of income			0.10	0.31			0.22	0.41
Yes	17	10.37			35	21.60		
No	147	89.63			127	78.40		
Source of payment			0.09	0.29			0.81	0.39
Self	18	9.42			171	81.43		
Others	173	90.58			39	18.57		
Perceived health status			1.52	0.64			1.59	0.61
Good	105	54.69			98	46.23		
Fair	76	39.58			105	49.53		
Poor	9	4.69			7	3.30		
Very poor	2	1.04			2	0.94		

Table 2: Test for equality of group means

FACTOR (Measurement code)	WILKS' LAMDA	F-VALUE	P-VALUE
Source of payment (1=Self; 0=Others)	0.6809	31.40	0.0000*
Preference for Saudi doctors†	0.8537	11.49	0.0012*
Nationality (1=Saudi, 0=Non-Saudi)	0.9053	7.01	0.0101*
Education (1=Little, 5=Postgraduate)	0.9237	5.54	0.0215*
Distance between residence and PHC provider†	0.9254	5.40	0.0232*
Availability of similar-gender doctors†	0.9259	5.36	0.0237*
Accessibility of PHC provider†	0.8381	4.42	0.0393*
Availability of other sources of income (1=Yes, 0=No)	0.9430	4.05	0.0482*
External design of the center of dispensary†	0.9466	3.78	0.0561
Availability of doctor who speaks similar language†	0.9537	2.99	0.0886
Number of family members (continuous)	0.9589	2.87	0.0948
Availability of medicine†	0.9694	2.11	0.1506
Availability of diagnostic facilities†	0.9762	1.63	0.2056
Availability of advanced medical equipment†	0.9789	1.44	0.2337
Cost of treatment†	0.9798	1.38	0.2440
Availability of 24-hour services†	0.9829	1.16	0.2850
Perceived health status (1=Good, 4=Very poor)	0.9832	1.14	0.2888
Monthly salary (continuous)	0.9834	1.12	0.2918
Easy admission procedures†	0.9865	0.92	0.3408
Physical setting of the center or dispensary†	0.9897	0.69	0.4083
Perceived quality of administrative staff†	0.9899	0.68	0.4115
Marital status (1=Married, 0=Unmarried)	0.9912	0.60	0.4418
Perceived quality of medical staff†	0.9914	0.58	0.4487
Existence of relationship with a staff of the center or dispensary†	0.9951	0.33	0.5667
Availability of specialized doctors†	0.9968	0.22	0.6447
Perceived quality of nursing staff†	0.9984	0.11	0.7405
Cleanliness of the center or dispensary†	0.9985	0.10	0.7555
Availability of entertainment facilities†	0.9991	0.06	0.8018
Waiting time†	0.9993	0.05	0.8307
Age (continuous)	0.9997	0.02	0.8846
Occupation (1=employed, 0=unemployed)	0.9998	0.01	0.8889
Convenience of appointments†	0.9999	0.00	0.9724
Friendliness of the staff†	1.0000	0.00	1.0000

*Statistically significant at $p < 0.05$

†1=Not important at all; 4=Very important

Table 3: The discriminant analysis results after seven steps

FACTOR	WILKS' LAMBDA	SIGNIFICANCE	STANDARD COEFFICIENTS
<i>Financial factors</i>			
Source of payment	0.6810	0.0000	0.5855
Availability of other sources of income	0.4727	0.0000	0.5606
<i>Accessibility of provider</i>			
Distance between residence and PHC provider	0.5863	0.0000	0.3542
<i>Socio-demographic factors</i>			
Education	0.5200	0.0000	-0.5183
<i>Provider characteristics</i>			
Preference for similar-gender doctors	0.4244	0.0000	0.4045
Preference for Saudi doctors	0.3871	0.0000	0.3014
<i>Quality of staff</i>			
Perceived quality of medical staff	0.3633	0.0000	-0.4103

Group classification Results

Actual Group	Group	N	Predicted Groups	
			MOH	Private
MOH-PHC provider	0	194	166 (85.6%)	28 (14.4%)
Private PHC provider	1	214	31 (14.5%)	183 (85.5%)

Percentage of grouped cases correctly classified = 85.54%

Canonical correlation = 0.7979, Chi-square = 64.294, p-value = 0.0000

Discriminant function's group centroids: MOH-PHC patients (Group 0) = -1.3625

Private PHC patients (Group 1) = 1.2490

presented in Table 3. The group centroid of -1.3625 for the MOH-PHC patients (group 0) and 1.2490 for the private PHC patients (group 1) can be explained as the number of standard deviations each group is from the average of both groups (the standardized average for both groups is zero).⁸ The centroids show a significant degree of discrimination between MOH and private PHC patients. The canonical correlation of 0.7979 means that 63.66% of the variance in the utilization of PHC provider can be explained by the model.

In the discriminant analysis, each significant factor was entered into the model according to its contributing power to the differentiation between the two groups.⁹ The estimates for this model reveal that the source of payment was the strongest predictor of the utilization of PHC pro-

vider. Thus, a patient who would pay for his or her treatment could be expected to choose a private PHC provider.

The distance between residence and PHC provider was the next strongest discriminating factor. In a study conducted in the Cameroons, distance was also found to strongly influence the utilization of health care provider.¹⁰ The results of this study mean that a patient who reckoned this factor as important was more likely to choose a public PHC provider. This supports the findings of Al-Omar⁷ and Egunjobi.¹¹

The third discriminating factor was education, implying that the more educated patients were more likely to go to private PHC providers. This may indicate some dissatisfaction among educated patients with the PHC services provided by MOH facilities. These results agree with the findings of Al-Dayel⁶

but contradict that of Bin Saeed¹² who found no significant influence of education on the choice of health care facilities.

The significance of the preference for same gender doctors confirm the findings of Al-Zahrani¹³ that patients were more likely to go to private health care providers if they preferred to be treated by doctors of the same gender. The preference for Saudi doctors indicates that patients were more likely to go to MOH facilities if they preferred to be treated by Saudi doctors.

The perceived quality of medical staff was another statistically significant discriminating factor between MOH and private patients. An earlier study found that patients considered the quality of medical staff as the most important factor in choosing a health care facility.¹⁴ The results of this study support the findings of Bin Saeed¹² that those patients who thought of the quality of care as important were more likely to seek treatment in private health care facilities.

CONCLUSION

This study primarily focused on determining the independent factors that significantly discriminate between MOH and private PHC patients. The results of this study suggests that PHC settings must give serious consideration to the significant factors obtained by this study in order to meet the expectations of their patients. It should be noted that the socio-demographic characteristics of the patients are beyond the control of PHC providers. Therefore, PHC policy makers should focus on those factors within their control, such as providing enough number of both male and female doctors, especially Saudi doctors. The results of this study indicate the heavy reliance of private facilities on non-Saudi doctors.

Primary health care facilities should also focus on improving the quality of its medical staff since the results of this study indicate that patients consider this factor as vital in their utilization of PHC providers. The quality of PHC medical staff in MOH facilities could be improved through the provision of continuing education and training activities. It is our view that it would be economical to improve the quality of service in PHC facilities with the provision of advanced medical equipment.

At this point, it is important to note that due to certain limitations of this study there should be caution in generalizing its findings. Since the sample of the study was taken from one geographical area it cannot be viewed as representative of the entire population. Furthermore, the total number of respondents was relatively small compared to the total primary health care patient population. Nonetheless, these findings provide an important starting point for future research.

Finally, the findings of this study suggest that further studies focusing on a different geographical area or greater number of respondents should be done on the utilization of health care facilities and providers. Other statistical techniques may also be utilized. The data generated by these studies can fill in the serious paucity of information in this area. The information thus obtained will be invaluable to policy makers, especially in dealing with the greater demand for high quality care at the lowest possible cost.

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