

## FACTORS AFFECTING PATIENTS' CHOICE OF HOSPITALS

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**Background:** This study was conducted to determine the factors that influence a patient's choice of hospitals.

**Patients and Methods:** Through the use of a self-administered questionnaire, data were collected from a random sample of 541 patients in two government and two private hospitals in Riyadh. Factor analysis was used to determine the underlying hospital-related and attitudinal dimensions that influence a patient's choice of hospital. Stepwise discriminant analysis was used to determine the factors that discriminate between patients who would prefer to seek treatment in a government hospital, and those who would prefer to be treated in a private hospital.

**Results:** The factor analysis revealed five underlying dimensions that influence a patient's choice of a hospital: convenient administrative procedures, quality of services, hospital image, cost of treatment, and health insurance coverage. After conducting stepwise discriminant analysis, eight variables appeared to be statistically significant in discriminating between patients who prefer government hospitals and those who prefer private hospitals. These variables were: cost of treatment, employment, quality of services, convenient administrative procedures, perceived state of health, health insurance coverage, age and sex.

**Conclusions:** The results of this study indicate that the choice of hospital is influenced by sociodemographic variables as well as hospital attributes. This implies that the government should give more effective support for the continued growth of the private healthcare sector, and also encourage further development of private health insurance.

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**Key words:** Government hospitals, private hospitals, hospital attributes, health insurance.

Understanding the potential consumers of products and services is extremely important for the long-term success of any organization, and healthcare organizations are no exception. In fact, this is very critical in case of hospitals. It was succinctly stated that there is a direct relationship between understanding potential consumers and hospital occupancy rate.<sup>1</sup> This emphasizes the need to understand the factors that may influence a patient's or potential patient's choice of hospitals. Such understanding is essential not only for the sustained growth of the healthcare industry, but also for the more cost-effective and cost-efficient allocation of limited resources.

Many empirical studies have been conducted to determine the attributes that the patient or immediate family considers when they decide the hospital from which to seek treatment.<sup>2-9</sup> These studies focused on various factors that include sociodemographic attributes of patients as well as attitudinal and institutional variables. From the results of these studies, it becomes clear that hospitals should take into account factors other than demographics,

such as cost of care and perceptions about quality of care. In earlier studies where cost of care was included, it had been ranked relatively low among factors that influence the choice of hospitals. However, it has been one of the most frequently mentioned factors, which may indicate that cost of care is actually a more important choice factor than what the results of those studies may have had indicated.<sup>8</sup>

It is true that merely reviewing existing literature will not provide the information necessary to really understand a particular topic or issue. In many instances, the most relevant information can only be obtained by conducting empirical studies based on local realities. It is on this basis that the current study was carried out, the main objective of which was to determine the factors that would discriminate between patients who prefer government hospitals and those who prefer private hospitals. A knowledge of such factors would provide planners and policymakers with first-hand information regarding patients' preferences, and also provide an insight into the relative importance that patients place on various hospital attributes or characteristics.

### Patients and Methods

A self-administered questionnaire was designed and a pilot study carried out in January 1997. The respondents

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for this pilot study were patients from Prince Salman Hospital and Mubarak Hospital in Riyadh. After several revisions to ascertain the consistency and validity of the questionnaire, a final form was designed and distributed to 650 random patients at two government hospitals (Al-Yamamah Hospital and Sulaimaniah Pediatric Hospital) and two private hospitals (Dallah Hospital and Al-Hammadi Hospital) in Riyadh. Data collection was conducted from March to May 1997. Out of all the questionnaires distributed, 541 were completed and included for analysis, therefore, the response rate was 83%.

Data were analyzed using descriptive statistics (frequency distribution and percentages), factor analysis and stepwise discriminant analysis. Factor analysis is a technique that has remarkable data-reduction capabilities. This technique, with a varimax rotation method, was used to generate the factors that could be retained in the analysis. Thus, the 22 hospital-related and attitudinal variables were included in the study to derive the underlying dimensions or sets of factors that influence a patient's choice of hospitals.

After performing factor analysis, discriminant analysis was used to classify patients into mutually exclusive groups, that is, those who prefer government hospitals and those who prefer private hospitals. Therefore, the patients' hospital preference was utilized as the main dependent variable. This was tested on the independent variables, which included sociodemographic variables and the factors derived from factor analysis. The general hypothesis was that the socioeconomic and attitudinal variables included in the study discriminate between patients who would seek treatment in government hospitals and those who would seek treatment in private hospitals. Significance level was set at  $P < 0.05$ .

## Results

The sociodemographic profile of the respondents is presented in Table 1. The respondents were relatively young, with a mean age of 34 years. The largest proportion of respondents was in the 31-40-year-old category (39.2%). The majority of the respondents were Saudis (63.2%) and male (61.6%). More than half (53%) had an education level less than high school, and 44.9% were employed in the private sector. The largest proportion of respondents (47.5%) had less than five years of work experience, while the average work experience for all respondents was 6.4 years. The average monthly family income of all respondents was SR5776, with almost half of them (48.2%) earning a monthly family income in the range of SR2500 to SR5000. With regards to state of health, the majority (60.3%) perceived that their health was poor. As to choice of hospital, more than half (54.9%) indicated that they preferred to be treated in a private hospital.

Table 2 shows the results of the factor analysis on the

TABLE 1. *Sociodemographic profile of the respondents (n=541).*

Variable	Frequency	Percentage
Age (years)		
<20	41	7.6
21-30	177	32.7
31-40	212	39.2
41-50	79	14.6
>50	32	5.9
Nationality		
Saudi	342	63.2
Non-Saudi	199	36.8
Sex		
Male	333	61.6
Female	208	38.4
Education		
Less than high school	254	47.0
High school	287	53.0
Employment		
Government employee	298	55.1
Private sector employee	243	44.9
Years of work experience		
<5	257	47.5
5-10	147	27.2
11-20	119	22.0
>20	18	3.3
Monthly family income (Saudi riyals)		
<2500	65	12.0
2500-5000	261	48.2
5001-10,000	157	29.0
10,001-20,000	49	9.1
>20,000	9	1.7
Perceived state of health		
Good	215	39.7
Poor	326	60.3
Hospital choice		
Government hospital	244	45.1
Private hospital	297	54.9

various hospital-related and attitudinal variables included in the study. It can be seen from this table that the 22 variables yielded five general factors—seven variables had high loadings on factor 1, four variables had high loadings on factor 2, seven variables had high loadings on factor 3, two variables had high loadings on factor 4, and another two variables had high loadings on factor 5. The table also shows that three variables had high loadings on both factors 1 and 3, while two variables had high loadings on both factors 3 and 4. These are called “complex variables” and they measure two dimensions. In this study, these complex variables measured two factors that influence the patient's choice of hospital. Based on the variables that have high loadings of the different factors, the term “convenient administrative procedures” was assigned to factor one, “quality of services” to factor two, “hospital image” to factor three, “cost of treatment” to factor four and “health insurance coverage” to factor five.

The general discriminant analysis model for the factors that influence the choice of hospital is presented in Table 3. Eight of the 13 factors were statistically significant—cost of treatment, employment, quality of services, hospital

TABLE 2. Factor loadings for 22 hospital-related and attitudinal variables that influence the patients' choice of hospital.

Variable	Convenient administrative procedures	Quality of services	Hospital image	Cost of treatment	Health insurance coverage
Good appointment system	0.828				
Convenient appointment system	0.779				
Simple admission procedures	0.727				
Convenience of visiting hours	0.714				
Working hours of hospital clinics	0.678				
Long waiting list in government hospitals	0.628				
Effective hospital administration	0.561				
The quality of services in private hospitals is much better		0.894			
Presence of famous and competent doctors in private hospitals		0.845			
Excellent hotel services		0.731			
The quality of services in government hospitals does not meet the patient's expectations		-0.880			
Recommended by friends and/or relatives			0.772		
Mass media advertisement			0.645		
Good hospital reputation			0.639		
Convenient hospital location	0.444		0.625		
Excellent internal and external appearance of the hospital	0.518		0.586		
Presence of female doctors in most clinics	0.489		0.503		
The hospital is located in a quiet area			0.573	0.543	
The cost of care in this private hospital is less than the cost in other private hospitals				0.820	
The benefits gained from private hospitals outweigh the costs of treatment				0.497	
Work requires treatment at this private hospital					0.822
Whole family has health insurance in this private hospital					-0.806

administrative procedures, perceived state of health, health insurance coverage, age and sex. The statistically significant variables indicate that those who preferred private hospitals were patients who were more likely to give importance to cost of treatment, quality of services, convenient administrative procedures, and had health insurance coverage. Employees of the private sector and those who thought their state of health was poor were also more likely to prefer private hospitals. This would also be true for older and male patients.

The five nonstatistically significant variables were hospital reputation, education, nationality, family income and years of work experience. This means that the respondents who preferred government hospitals and those who indicated preference for private hospitals were not significantly different from each other as far as these factors are concerned.

### Discussion

Results of this study indicate that the "cost of treatment" factor is the most discriminating variable for

choosing a private hospital over a government hospital. This may seem rather unexpected, considering that government hospitals provide services free of charge. However, what the results actually indicate is that while patients consider the actual cost of treatment, they also weigh the benefits that they will derive from being treated in private hospitals, that is, if patients feel that the benefits they will get from being treated in private hospitals are greater or more important than the cost they will have to pay, then these patients would indeed prefer to be treated in private hospitals.

The sociodemographic variables that appeared to be discriminating variables in the choice of hospitals were employment, perceived health status, age and sex. These indicate that those working in the private sector and those who perceived their state of health as poor would prefer to be treated in private hospitals. The results concerning employment seem logical, since many employees of the private sector have some form of health insurance that entitles them to be treated in private hospitals.

Concerning perceived state of health, one possible explanation why those who perceived their state of health

to be poor would prefer private hospitals is the well-known fact that there are usually long waiting lists in government hospitals. This being the case, those patients would rather go to private hospitals. Age may be related to perceived state of health, since older persons are more likely to perceive their health to be poor, compared to younger persons. This is particularly true for those with chronic diseases. The influence of sex on the choice of hospital is more difficult to explain. However, the results suggest that male patients were less likely to tolerate the long waiting lists in government hospitals.

The factor termed "quality of services" was also found to be a discriminating variable in the choice of hospital. This indicates that patients who value the quality of a hospital's services would prefer to seek treatment in a private hospital. This factor covers not only the competence of doctors, but also the amenities that are provided by the hospital.

Another factor that appeared as a discriminating variable is "convenient administrative procedures." This means that patients would prefer a private hospital if they gave importance to this factor, which encompasses such administrative aspects as appointment system, admission procedures, visiting hours, working hours of the various clinics and waiting lists.

The final discrimination variable was the factor termed "health insurance coverage." By looking at the results of the factor analysis, this variable can be related to employment, that is, those whose work or health insurance policy impose some restrictions as to the hospital where they can be treated do not really have any choice but to seek treatment in that particular private hospital. However, the results also indicate that those who have health insurance would generally prefer to seek treatment in private hospitals.

Interestingly, "hospital image" did not come out as a discriminating variable in the choice of a hospital. This means that such variables as mass media advertisement, recommendation of friends or relatives, overall hospital reputation, the external and internal appearance, as well as the location of the hospital, would not really persuade patients to seek treatment in private hospitals. This indicates that in choosing a hospital, patients actually give greater importance to substantive rather than trivial/extraneous details. Hospitals should, therefore, place greater emphasis on the aspects that influence the quality of care and services they provide, the administrative procedures and the cost of treatment.

### Conclusion

The results of this study can have significant implications for the national healthcare industry. It should be noted that the Fifth Development Plan, which emphasized the role of the private sector and the concept of privatization, has been gaining ground since its

TABLE 3. *The general discriminant analysis model for the factors affecting patients' choice of hospitals.*

Variable	Measurement code	Statistical Inferences	
		F-value	Prob.
Cost of treatment	Ordinal scale	41.189	0.0001 a
Employment	Private sector employee (1)	20.444	0.0001 a
Quality of services	Ordinal scale	12.487	0.0004 a
Convenient administrative procedures	Ordinal scale	12.317	0.0005 a
Perceived state of health	Poor	11.412	0.0008 a
Health insurance coverage	Ordinal scale	9.155	0.0026 a
Age	Continuous	5.835	0.0160 a
Sex	Male (1)	5.208	0.0229 a
Hospital image	Ordinal scale	3.431	0.0645 ns
Education	High school or more (1)	1.711	0.1914 ns
Nationality	Saudi (1)	1.251	0.2638 ns
Monthly family income	Continuous	0.735	0.3916 ns
Years of work experience	Continuous	0.228	0.6335 ns

a=statistically significant; ns=not statistically significant.

inception. This policy can ensure an effective government support that will sustain the continued growth and development of the private healthcare sector. This will provide an opportunity for the overall improvement of healthcare services not only in the private sectors, but in government hospitals as well.

It should be noted that aside from the cost of treatment, patients also weigh the benefits that they will derive from going to private hospitals relative to the costs that they have to pay. Logically, they will seek treatment in hospitals where they perceive that the benefits outweigh the cost. Therefore, by having simple administrative procedures and improving the quality of services in the private hospitals, patients would be more encouraged to seek treatment in these hospitals. Considering the long waiting lists in government hospitals, this will be particularly true for patients who perceived their state of health to be poor and prefer a more urgent treatment.

Another implication of this study concerns the area of health insurance. Aside from government support, private health insurance should be further developed in order to support the growth of the private health sector. By increasing the coverage of health insurance, more and more people would go to private hospitals. This means that those who can afford it will have to pay for their health care. This will lessen the burden on the government hospitals, while at the same time freeing up some public funds. These funds can then be used to improve the operations of and the quality of services in government hospitals. This can ensure that the financially needy who

require treatment will be effectively cared for in government hospitals. However, it is necessary to emphasize the significance of primary health care in government hospitals being more cost effective.

At this point, it is important to note that caution should be observed in generalizing the results of this study. Although patients in both government and private hospitals were included in the study, it is difficult to determine if they are representative of the general population, since these patients were concentrated in only one geographic area. Despite this limitation, the results of the study provide a significant insight into the factors that influence patients' choice of a hospital.

In view of the above-mentioned limitations, it is highly recommended that further studies on this subject be conducted. Such studies may be replications which will focus on a different or larger sample size. These studies may also focus on another geographic area and consider other variables that were not included in the current study.

Furthermore, future studies are suggested to utilize other analytical or statistical techniques.

### References

1. Heischmidt KA, Heischmidt CE. Hospital choice criteria: an empirical evaluation of active hospital clients. *J Hosp Market* 1991;5:5-16.
2. Okarofor H. Hospital characteristics attractive to physicians and the consumers: implication for public general hospitals. *Hosp Health Serv Admin* 1983;28:50-65.
3. Feldman S. The use of private health care providers in rural Bangladesh: a response to Claquin. *Soc Science Med* 1983;17:1887-96.
4. Jensen J. Choosing a hospital. *Am Demogr J* 1987;9:44-7.
5. Javalgi RG, Rao SR, Thomas EG. Choosing a hospital: analysis of consumer tradeoffs. *J Health Care Market* 1991;11:12-22.
6. Higgins J, Wiles R. Study of patients who choose private health care for treatment. *Br J Gen Pract* 1992;42:326-9.
7. Ellis RP, McInnes DK, Stephenson EH. Inpatient and outpatient health care demand in Cairo, Egypt. *Health Econ* 1994;3:183-200.
8. Gooding SK. Quality, sacrifice, and value in hospital choice. *J Health Care Market* 1995;15:24-31.
9. Tembon AC. The northwest province of Cameroon. *Int J Health Plan Management* 1996;11:53-67.