



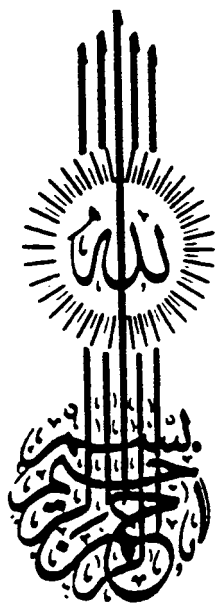
Research Center of Administrative Sciences

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Insufficient Attendance in Primary Health Care Centres: Prevalence, Patients' Characteristics and Associated Factors

Prepared by:

Dr. Saad Abdullah Al-Ghanim
Assistant Professor
Department of Public Administration
College of Administrative Sciences
King Saud University - Riyadh, Saudi Arabia



Kingdom of Saudi Arabia
Ministry of Higher Education
King Saud University
Deanship of Academic Research
College of Administrative Sciences Research Center

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Dr. Saad Abdullah Al-Ghanim

*Assistant Professor
Department of Public Administration
College of Administrative Sciences
King Saud University, Riyadh, Saudi Arabia*

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Frequent attendance in primary health care centres: Prevalence, patients' characteristics and associated factors

Saad Abdullah Al-Ghanim, PhD

ABSTRACT. *Objectives:* To determine the prevalence of frequent attendance at primary health care (PHC) centres and to determine the variables which may discriminate between frequent and non-frequent users.

Methods: The study employed a self-administered questionnaire to collect data from patients aged 18 years or older who visited a PHC centre in Riyadh City. The questionnaire was designed to collect data on a number of variables including socio-demographic, access-related and health-related variables. In addition to the descriptive statistics, stepwise discriminant analysis was used to determine the variables which may discriminate between frequent and non-frequent users.

Results: The results show that a small group of patients accounted for a high proportion of the workload in the PHC centre. Results of the stepwise discriminant analysis show that eight of the 16 variables were statistically significant discriminating variables between frequent and non-frequent users.

Conclusion: The study highlights the importance of factors which motivate patients to attend PHC centres frequently. Health policy makers should understand these factors before implementing any intervention plans which attempt to persuade people to modify their health-seeking behaviour. Further research is needed to expand this study, and, in particular, to examine the appropriateness of visits made by the frequent users.

Keywords: Prevalence, frequent attendance, stepwise discriminant analysis, access, health status.

INTRODUCTION

The use of health care facilities is increasing in most countries and the Kingdom of Saudi Arabia (KSA) is no exception. Ministry of Health (MOH) annual statistics show that there were 96 million visits made to all health care facilities in the Kingdom in 2002 (MOH, 2002), most of which (54.2%) were made to the MOH primary health care (PHC) centres (MOH, 2002). Decision-makers indicate that health resources are limited and the expenditure on health care is high and still rising. There is a general assumption that this growth in the use of primary care services is likely to be caused by a small group of patients who are responsible for a considerable percentage of the total workload of primary health care facilities. Such patients are labeled in the medical literature 'frequent attenders' and are known to include patients with a variety of problems.

This phenomenon has been reported from many countries, irrespective of the prevailing health care system (Demers, 1995; Karlsson et al, 1994; Scarpaci, 1988), indicating that health services are not always used rationally and there is a group of patients who visit the doctor very regularly (Zola, 1973). If appropriate interventions for managing frequent attenders in PHC centres are to be developed, the extent of and factors associated with frequent attendance need to be determined. Therefore, this study seeks answers for the following questions.

1. What is the extent of frequent attendance at the MOH primary health care centres?
2. What are the factors most associated with frequent use of primary health care centres?

It is anticipated that the findings of this study could help in understanding the use of health services in Saudi Arabia by a subgroup of patients and therefore be of importance in developing meaningful measures of intervention for frequent attendance.

LITERATURE REVIEW

This section reviews the literature on some aspects central to the work of this study. The definition of 'frequent users', their attributes and the prevalence of 'frequent use' of PHC centres in some countries will be discussed. In addition, previous work on factors associated with the frequent use of PHC centres will be highlighted.

The attributes of frequent attenders

'Frequent attenders' may be considered to be the euphemism used to describe patients who attend PHC facilities more frequently than routine patients. Stronger language than 'frequent attenders' has been used, however, to describe some of the PHC users who account for a large proportion of the visits made. Such patients have been described as "patient with fat folders" (Goodridge, 1982), "heartsink patients" (O'Dowd, 1988), "doctor-shoppers" (Demers, 1995) or "difficult patients" (Corney et al, 1988). More vitriolic descriptions of such patients include "problem patients", "unpopular patients" (Stockwell, 1984) and "hateful patients" (Groves, 1986). The objects of such professional contempt are patients who regularly present to PHC facilities with a number of complaints and symptoms, usually without an apparent physical pathology. These authors indicate that the workload and economic burden which these patients impose on primary health care facilities makes it essential to study them thoroughly. Karlsson et al (1994) note that when the kinds of thing associated with attendance rates within the context of primary health

care are better understood, better intervention strategies can be invented.

Defining 'frequent attenders'

The term "frequent attenders" is often considered to be synonymous with "frequent users" or "frequent consulters" and all these terms are used interchangeably in much of the literature. Early studies attempted to define who these patients were and what effects they had on service use. However, such terms can refer to those who attend health care facilities more often than other patients. Yet defining frequent attendance, for research or clinical purposes, is problematic (Heywood et al, 1998), and defining patients as 'frequent attenders' or 'non-frequent attenders' varies among health professionals such as doctors, nurses and administrators. Thus, labelling a patient as a 'frequent user' of a health care facility is very difficult and the lack of agreement on terminology has led to great discrepancies in the proportion of patients defined as being 'frequent' attenders. Thus, an agreed definition of what constitutes frequent attendance is lacking and none of the authors has provided a generally accepted and validated classification instrument to distinguish frequent from non-frequent users.

However, the medical literature employs two methods which have been used to define the 'frequent attenders'. The first is to define a *minimum* number of visits in a given time (usually one calendar year). According to this criterion, any patient who exceeds that number of visits is considered a 'frequent user'. For example, the study conducted in Finland by Karlsson et al (1994) uses 11 visits (or more) per year to define a frequent user, McArdle et al (1974) and Heywood et al (1998), in the United Kingdom (UK), use a minimum of 12 visits per year and in a Canadian study Browne et al (1982) use

9 visits or more to define frequent attenders. Other authors have used more or less arbitrary numerical definitions of frequent attendance, varying from five (Andersson et al, 1995; Wagner and Hendrick, 1993) to 20 visits (Demers, 1995) per year.

The other method used to define 'frequent users' uses a percentile of the most frequently attending patients in a given time period. A number of studies have adopted this strategy; some choose the upper quartile (Katon et al, 1990; Lin et al, 1991) and others the upper decile (Courtenay et al, 1974; Kersnik et al, 2001; Westhead, 1985). Patients are usually stratified by age and gender. One of the interesting studies to define frequent attenders is that carried out by Goodridge (1982) in which the author uses the weight of the patient's folder (100 g or more) as the criterion for defining frequent users. Heywood et al (1998) claim in their research that the data in different studies could not be compared because arbitrary definitions of frequent attendance were selected and findings had been contradictory.

Other authors, such as Scaife et al (2000), use two definitions to determine frequent users. The two definitions used are those with 12 or more consultations over the year and those who attended for > 6 consultations for *minor* illnesses. The authors reported that the choice of these two definitions was based on the assumptions that patients attending 12 or more times a year would be seen as frequent attenders and that patients attending six or more times a year for *minor* illnesses would be perceived more readily as frequent attenders than patients attending as often or more with serious complaints. The second definition takes into account, to some extent, the difference between a patient who attends frequently and a patient who is seen as a frequent attender.

There is some variation in the literature in the types of visits which patients made. While some authors count the visits made by patients to other health facilities (Demers, 1995) or visits made by the doctor to the patient's home (Vedsted et al, 2004; Vedsted et al, 2001a), others do not (Jiwa, 2000). Visits made for routine check-ups, for example during pregnancy, vaccinations or for administrative purposes (e.g. to obtain a medical report) are not counted in the studies (Vedsted et al, 2001b) and nor are visits initiated by doctors (e.g. referrals). Thus many of the reviewed studies differ because of methodological limitations, because the selection of frequent attenders is not always clarified (were the visits counted through auditing from the medical records or did the patient ask for them?; did the visits include also visits to other physicians?, etc.) and these studies are made within different health care systems (Karlsson et al, 1994).

Prevalence of frequent attendance

The problem of 'frequent attenders' has been investigated in a number of countries and it seems that the prevalence depends on the criteria used to define the term and the populations studied. For instance, in the UK, Neal et al (1998), examining frequent attendance in four primary care centres, find that 1% of attenders account for 6% for the workload, the top 3% for 15%, the top 20% for 55% and the top 50% for almost 90%. Another study conducted by Westhead (1985) of frequent attendance in primary care centres in the UK finds that 30% of consultations were made by 10% of patients (n=1,491) in the study sample.

The study conducted in Sweden by Andersson et al (1995) finds that 1.7% of the patients were frequent users, who accounted for 15% of consultations; their average consultation rate was 6.2 per year. Further, this study identifies that primary care doctors are used more during the consultations sought by the frequent users. In Spain, Baez

et al (1998) find in a case-control study that frequent users constitute 10% of the patients attending nine primary care centres. These patients account for 27.5% of all patient-initiated visits. The mean number of visits per year was 9.

The prevalence of frequent attendance at primary health care centres has been shown in studies carried out in North American countries as well. For example, Katon et al (1990) report from a US study that the top 10 percent of frequent users used 29% of primary care visits, 26% of prescriptions and 48% of in-patient days. In Canada, Browne et al (1982) compare non-users and frequent attenders (defined as people who made nine or more visits to a GP/year) in a primary care facility and found that 4.5% of the patients made nine or more visits to this facility but generated 21% of all annual visits. Further, the study identifies that 13% of the patients made 46% of all visits to the physicians.

As far as the cost of frequent use is concerned, in one USA study, Korff et al (1992) estimate that the 15% of patients who are the highest cost patients in Washington State account for 64% of total health care costs while the 50% lowest cost patients account for only 9.5% of total costs. The authors of this study conclude that these high-cost patients tend to be frequent attenders.

Thus, the prevalence of frequent attendance has been identified in a wide range of primary health care settings, including both socialised and fee-for-service health care systems. This gives consistent evidence which confirms that a small proportion of patients is responsible for a disproportionate number of consultations.

Factors associated with frequent users

Many studies attempt to identify the factors associated with frequent users, in an effort to explain the phenomenon. These factors include socio-demographic characteristics such as age, gender, marital status, income and employment status (Howe et al, 2002; Karlsson et al, 1994; Scaife et al, 2000; Vedsted et al, 2004). For example, among a group of frequent users defined by a fixed number of consultations per year in a population containing patients of all ages, there was an overrepresentation of the elderly. According to Gill and Sharpe (1999), this may apply also to children, whose consultation rates also tend to be higher than the general population, although the general ageing of populations in developed countries means that the preponderance of older patients is much more marked. An excess of females among frequent users is seen in most studies (e.g. Browne et al, 1982; Karlsson et al, 1994).

Browne et al (1982) state that frequent attenders are likely to be single, unemployed, retired and in receipt of low incomes. Scaife et al (2000) indicate that, while it has been established that higher rates of frequent attendance are associated with a range of socio-demographic factors, the exact relationship between these factors and frequent attendance is unknown. These relationships do not exist in other studies. For example, Marron et al (1984) find no differences in marital status and age between frequent and non-frequent attenders. Similarly, Karlsson et al (1994) find in their study that frequent attendance is not associated with age, sex, marital status or basic education. In this sense the frequent attender represents an average user of primary health care centres.

Medical factors (physical illness) and psychiatric disorder are among the most important factors which have a significant influence on frequent attendance. Courtenay et al (1974) find in a US study that 67 per cent of his frequent attenders had a 'major diagnosis' (of which 44 per cent were for a physical diagnosis). Similarly Karlsson et al (1994) find that the frequent attender patients had more physical diseases, were more often on a disability pension and had more mixed (physical and psychiatric) complaints than the non-frequent patients. Courtenay et al (1974), in the above mentioned study, and Westhead (1985), review the medical records of patients and find that the rate of physical disease in frequent attenders is much higher than for patients with only an average attendance rate. Similarly, prospective studies from the US (Katon et al, 1990), Finland (Karlsson et al, 1994) and the UK (Westhead, 1985) are in agreement with this finding. Gill and Sharpe (1999) in their review confirm that no studies of representative samples appear to contradict this finding and indicate that although rates of physical disease are high, there is substantial evidence that frequent attenders also have high rates of psychiatric disorders. Authors highlight the finding that psychiatric problems include a range of common symptoms and disorders such as anxiety, depression and emotional distress have an association with frequent attendance.

Accessibility of health care facilities is largely influenced by a number of factors such as organisational, personal and financial factors. The literature indicates that the effect and the relative importance of each of these factors may depend on the culture, health policy and the health care system to which the person is formally affiliated to. Organisational factors may include waiting times (Richardson, 1999; Gulliford et al, 2002), limited working hours (Ullman et al, 1978), availability of appointment system (Pease, 1973; Young et al, 1996) and the distribution of health resources in the community (Richards et al, 1999). Organisational barriers may result

in delays in treatment, which can cause dissatisfaction among users and may worsen clinical outcomes (Gulliford et al, 2002).

Access to health services may be influenced by personal factors such as their socio-demographic characteristics (Higgs et al, 2001) and their perception and recognition of health needs (Gulliford et al, 2002). Financial barriers can influence patients' access of health services even in countries where health care services are free of charge (Pane et al, 1991; Gulliford et al, 2002). Moony (1983) suggested that, from a health economic perspective, the availability of services may be measured in terms of the costs to individuals of obtaining care. These costs may include the costs of travel and other inconvenience incurred in obtaining care or the health benefits forgone by not obtaining care.

Geographical factors and the availability of medical care have been reported to be associated with the use of health services (Cunningham and Cornelius, 1995). A study carried out in Norway (Fylkesnes, 1993) reported that rural inhabitants were more likely to have access barriers in obtaining primary and specialist care than their urban counterparts. The authors indicated that individuals who live in urban areas were more likely to seek health care and utilise more services than their rural counterparts; perhaps due to less travel time, greater ability to reach services and a higher physician/patient ratio. In another study, conducted in rural Nigeria, it was found that rural populations living further from health facilities tend to delay using health facilities and preferred alternatives such as self-treatment and traditional medicine (Stock, 1983).

Distance has been found to be inversely related to use of health facilities in studies in the United Kingdom (Walsh, 1990; Hull et al, 1997), the United States (Padgett and Brodsky, 1992), New Zealand

(Kljakovic et al, 1981), Sweden (Magnusson, 1980) and Canada (Ingram et al, 1978; Beland et al, 1998). In contrast, Basu (1982) in a study in New York, found that distance did not influence patients' decision to visit health care facilities. The author argued that other factors might have influenced such decisions, including transportation, income of patients and health services which are readily available to them. According to Basu, these factors may seem more important to patients than distance traveled for seeking medial care.

Previous research indicates that people use emergency department for 'primary health care' conditions because they have relatively little or no access to primary care facilities (Franco et al, 1997; Lombrail et al, 1997; Richardson and Hwang, 2001). According to this interpretation people would use health care facilities appropriately if the primary care facilities were located within reasonable distances and if they kept hours which corresponded with work and school schedules of the people (Keehn et al, 1994). Other studies indicate that poor access to health care can result from other factors such as time and day (Vedsted et al, 2001b), transportation barriers (Walsh 1993), limited working hours of PHC facilities (Hallam, 1994) and language barriers (Seid et al, 2003). Such barriers in getting access to health facilities may contribute to increased mortality, increased morbidity and higher treatment costs from using emergency departments for 'primary care' problems.

Satisfaction with care is another explanation for the use of health care facilities. Previous studies have demonstrated that individuals who are dissatisfied with their primary care providers are more likely to seek care elsewhere in order to meet their health needs. For example, a study in the US examined whether dissatisfaction of patients with primary care is associated with using facilities other than PHC clinics (Sarver et al, 2002). The study found that dissatisfaction

with the quality of primary care clinics, dissatisfaction with the staff at these clinics, the 'feeling that the provider did not listen' to their complaints and lack of confidence in the ability of the primary care clinic were all associated with emergency department use for 'primary care' conditions. The results of this study suggest that improving satisfaction with the primary care services may help decrease the use of emergency department for non-urgent conditions.

The study conducted by Pease (1973) identified that among reasons given by patients for not attending their own doctor were: patients did not trust the treatment offered by their doctor, they thought that the hospital would give better treatment, the PHC doctor had an appointment system and the patient could not wait, and patients were unable to contact their doctor or their own doctor was on a holiday. Such findings are supported by a study conducted in New Zealand which found that dissatisfaction is one of the most important motives which encourages patients to use the emergency department rather than primary care clinics (Kljakovic et al, 1981).

In general, studies on the utilisation of PHC services in the Kingdom of Saudi Arabia were scarce and rather of general nature (Saeed and Mohamed, 2002) concentrating mainly on particular aspects such attitudes (Saeed, 1987), satisfaction (Al-Faris et al, 1996; Al-Doghaither and Saeed, 2000) and choice between public and private PHC services (Saeed and Al-Omar, 1998). In fact, Qureshi et al (1996) indicated that providing PHC services in the Kingdom requires appropriate changes to the functioning of existing PHC services and that it is important to gather as much information as possible about community needs. According the authors, this would enhance the use and the accessibility of primary health care services.

Saeed and Mohamed (2002) assessed factors which patients think can encourage, discourage or have no effect on utilisation of PHC centres in Riyadh city. The study reported that patients' socio-demographic characteristics, health personnel characteristics, and the availability of free health services were the most encouraging factors, while overcrowding and geographical location of the PHC centres were the least encouraging factors. According to the study, patients' gender, education and occupation were the most important and age was the least important patients' characteristics associated with the utilisation factors.

In the Eastern Province of Saudi Arabia, Al-Qatari and Haran (1999) identified the components of primary health care (e.g. environment structure, physical surroundings, waiting time, consultation time, perceived outcome) that cause most concern to services users and identified the socio-demographic and other factors associated with satisfaction among the users of PHC centres. The study concluded that the use of the PHC centres is determined by the extent of satisfaction with the various components of the PHC centres. The study reported that socio-demographic factors played minor roles in deciding the extent of satisfaction, although each had a deciding role with one or more, but not all, components.

It is important to note that after the implementation of the PHC concept in the Kingdom in the early 1980s, services were freely available to everyone, eliminating the need for patients to seek primary health care attention at hospitals. Since then, access to hospital services was to be via the PHC centres. Recently it has become apparent from the MOH annual reports, as has been mentioned earlier, that the pattern of health services utilisation has changed with an increasing volume of primary care being provided in PHC centres. Probably the relative accessibility of primary health care

services and the free of medical care are two of the factors responsible for this heavy use.

METHODS

Study sample and population

The present research employed a case study method, using a self-administered questionnaire. It was carried out in a busy PHC centre in Riyadh City. The study population comprised adult individuals (18 years old and above) who presented to the PHC centre between 8:00 a.m. and 6:00 p.m. during a one-week period in May 2004. A stratified random sampling was used in order to collect data from both male and female patients. The pilot study revealed that there was a high flow of patients attending the PHC centre; accordingly, during the main survey, every 2nd adult patient in both the male and female sections was selected in order to cope with this flow of patients. 600 questionnaires were distributed, of which 571 were returned and 513 questionnaires were valid for analysis (an 85.5% response rate).

The questionnaire

The questionnaire was designed to capture information on different variables serving the purpose of the study. The questionnaire was divided into three sections. Seven questions on socio-demographic characteristics (gender, age, nationality, marital status, educational level, employment status and monthly family income), four questions on the access-related variables (distance, time required to get to the PHC centre, mode of transport and registration with the PHC centre) and five questions on health-related variables (presence of chronic illness, perceived health status, perceived psycho-social

status, previous visits to other health facilities and general satisfaction with the services provided for them in the PHC centre). Patients were asked about the number of visits made to the PHC centres in the past 12 months.

A number of steps were taken to increase the content validity of the questionnaire. First, a review of the relevant literature was carried out in order to select some variables which may influence the frequent use of primary health care services. Second, two academic staff reviewed the questionnaire and their suggestions were taken into consideration. Finally, a pilot survey of 50 adult patients (29 males and 21 females) was conducted. On the basis of the outcome of the pilot survey, few questions were reformulated and others were added (or excluded). The pilot survey questionnaires were not included in the main survey.

The covering letter of the questionnaire outlines the title and the purpose of the study, and the status and identity of the researcher. Patients were informed about the importance of the study and were encouraged to participate. A guarantee of confidentiality was included and the respondents were not asked to identify themselves.

For the purpose of this study, descriptive statistics (frequency distribution, percentages, mean and standard deviation) and multivariate analyses were employed. In order to determine those variables which are most important in distinguishing between 'frequent' and 'non-frequent' users, a two-group discriminant analysis was used as a method for multivariate analysis. Stepwise discriminant analysis was used as a technique for selecting the best of the discriminating variables to form the discriminant function. This technique has been found to be a reliable statistical method for studying group differences in several independent variables

simultaneously (Saeed and Al-Omar, 1998) and is one of the most appropriate techniques for classifying objects into one of two clearly defined groups (Taeq, 1997).

In the two-group discriminant analysis, the dependant variable was dichotomised into frequent users (referring to patients who made 10 visits or more to the PHC centre in the past 12 months) and non-frequent users (referring to patients who made fewer than 10 visits to the PHC centre in the past 12 months). Independent variables fell into three sets of variables: socio-demographic variables, access-related variables and health-related variables. Variables were allowed to enter the model, using the minimisation of Wilks' Lambda, in a forward stepwise fashion. All independent variables were entered against the dependent variable (frequent vs. non-frequent user). This was to determine which variables were statistically significant as well as the total amount of variance which may be explained by all of the variables in the regression. The Statistical Package for Social Sciences (SPSS, ver. 10) was used, both for data entry and analysis.

Definition of frequent attenders

In the literature, there have been almost as many classifications, definitions and views of the frequent utilisation of PHC services as there have been studies of this field, and this frustrates any attempt to make a direct comparison between the results of different researchers.

Since there is no standard definition of frequent attendance in the literature, this study will define frequent attenders as those making 10 or more visits to a PHC centre in the past year and non-frequent attenders as those patients who made fewer than 10 visits in the past year. This definition is equated with the highest cut-off from previous studies, and therefore is likely to identify the most deviant population. Visits for pregnancy follow-up or for obtaining medical reports are not

included in the number of visits. It is worth noting here that a one-year recall time was considered a conservative period for determining frequency of use (Scarpaci, 1988); other studies have examined health care utilisation as far back as the previous eight years (Bhardwaj and Bimal, 1986).

RESULTS

A primary focus of this study is to investigate the extent of frequent attendance at the PHC centres and to find out the factors associated with such attendance. Accordingly, this sections presents results emerged from the study.

Profile of respondents

Table 1 shows the frequency distribution of respondents according to the socio-demographic variables included in the study. Socio-demographic variables indicate that the majority of the respondents were Saudis (70.2%), females (56.5%) and married (70.2%). The largest proportion of respondents was over 40 years old (70.2%) with a mean age of 48.8 years. Two-thirds of the respondents (66.3%) had an educational level of less than high school. More than half (59.3%) of them were in employment and the average monthly family income of all respondents was SR 3,884 with 42.5% of them earning a monthly family income of less than SR 3,000.

With regard to the access-related variables, **Table 2** shows that the vast majority of respondents (97.5%) were registered with a PHC centre. The average distance from the place of residence was approximately 2 kilometers (km), with the majority (37.8%) having a journey to the PHC centre of less than 1 km. The average time required to reach the PHC centre was about 5 minutes, with more than half of the respondents (57.7%) reporting that it took them less than 5 minutes to reach the PHC centre; only 2.9% needed over 10 minutes.

The majority of patients (79.5%) used cars to take them to the PHC centre and one-fifth (20.5%) of respondents usually went to the PHC centre on foot.

Table 1: Frequency distribution of respondents according to Socio-demographic variables

Socio-demographic variables		Frequency N=513	(%)
Gender			
	Male	223	(43.5)
	Female	290	(56.5)
Age (years) (Mean = 48.8, S.D.=17.29)			
	18-30	83	(16.2)
	31-40	70	(13.6)
	41-50	130	(25.3)
	51-60	130	(25.3)
	60 +	100	(19.5)
Nationality			
	Saudi	360	(70.2)
	Non-Saudi	153	(29.8)
Marital status			
	Married	360	(70.2)
	Unmarried	153	(29.8)
Education (Mean = 1.9, S.D.=0.96)			
	Elementary	213	(41.5)
	Intermediate	127	(24.8)
	Secondary	144	(28.1)
	University +	29	(5.7)
Employment			
	Employed	304	(59.3)
	Unemployed	209	(40.7)
Income (SR) (Mean = 3,884, S.D.=2,080)			
	< 3,000	218	(42.5)
	3,000-5,000	156	(30.4)
	5,001- 8,000	116	(22.6)
	> 8,000	23	(4.5)

Table 2: Frequency distribution of respondents according to Access-related variables

Access-related variables		Frequency N=513	(%)
Distance (Mean = 2.1, S.D.=1.68)			
	< 1 km	194	(37.8)
	1 to < 3 km	153	(29.8)
	3 Km and +	166	(32.4)
Time of travel (Mean = 5.1, S.D.=2.76)			
	< 5 min.	296	(57.7)
	5-10 min.	202	(39.4)
	11-15 min.	10	(1.9)
	+ 15 min	5	(1.0)
Mode of transport			
	On foot	105	(20.5)
	Private car	408	(79.5)
Registration with PHC			
	Yes	500	(97.5)
	No	13	(2.5)

Regarding health-related variables, **Table 3** shows that just below one-third (32%) of the respondents reported that they suffer from some sort of chronic illness/disease. When patients were asked about their perception of the general status of their health, more than one-third (38.6%) reported that they had excellent (or good) health status, 33.3% had fair health status and more than a quarter (28.1%) reported they had poor health. The vast majority of respondents (81.7%) had visited other health care facilities in the past year. As to the perception of psycho-social status (e.g. stress, anxiety), about one-third of the respondents (34.4%) reported excellent or good psycho-social status and 38.2% reported a poor psycho-social status. About three quarters of the patients (72.9%) reported that they were generally satisfied with the health care received at the PHC centre.

Table 3: Frequency distribution of respondents according to Health-related variables

Health-related variables		Frequency N=513	(%)
Presence of chronic illness			
	Yes	164	(32.0)
	No	349	(68.0)
Self-reported health status (Mean = 2.21, S.D.= 0.97)			
	Poor	144	(28.1)
	Fair	171	(33.3)
	Good	145	(28.3)
	Excellent	53	(10.3)
Previous visits to other health facilities			
	Yes	419	(81.7)
	No	94	(18.3)
Self-reported psycho-social Status (Mean = 2.21, S.D.=1.1)			
	Poor	196	(38.2)
	Fair	141	(27.5)
	Good	107	(20.9)
	Excellent	69	(13.5)
General satisfaction with the PHC (Mean = 1.3, S.D.= 0.4)			
	Satisfied	374	(72.9)
	Dissatisfied	139	(27.1)

Prevalence of frequent attendance

Based on the criterion stated earlier for classifying respondents into frequent and non-frequent groups, the results indicate that 141 respondents, about a quarter of the total (27.5%) were classified as frequent users (those who had made 10 or more visits in the past 12 months) and thus the remaining 372 (72.5%) patients were classified as non-frequent users (**Table 4**).

Table 4: Socio-demographic variables for frequent and non-frequent users
(N =513)

Variable (Coding)		FREQUENT USERS n = 141 (27.5%)		NON-FREQUENT USERS n = 372 (72.5%)	
		n	%	n	%
Gender					
	Male (0)	41	29.1	182	48.9
	Female (1)	100	70.9	190	51.1
Age (years)					
	18-30	7	5.0	76	20.4
	31-40	11	7.8	59	15.9
	41-50	35	24.8	95	25.5
	51-60	48	34.0	82	22.0
	60 +	40	28.4	60	16.1
	Mean (S.D.)	53.4 (13.57)		47.07 (18.22)	
Nationality					
	Saudi (0)	128	90.8	287	77.2
	Non-Saudi (1)	13	9.2	85	22.8
Marital status					
	Married (0)	103	73.0	257	69.1
	Unmarried (1)	38	27.0	115	30.9
Education					
	Elementary (1)	74	52.5	139	37.4
	Intermediate (2)	31	22.0	96	25.8
	Secondary (3)	31	22.0	113	30.4
	University + (4)	5	3.5	24	6.5
	Mean (S.D.)	1.77 (0.92)		2.06 (0.97)	
Employment					
	Employed (0)	60	42.6	244	65.6
	Unemployed (1)	81	57.4	128	34.4
Income (SR)					
	< 3,000	83	58.9	135	36.3
	3,000-5,000	44	31.2	112	30.1
	5,001- 8,000	9	6.4	107	28.8
	> 8,000	5	3.5	18	4.8
	Mean (S.D.)	3137.6 (1788.2)		4,166.94 (2,114.37)	

Table 4 also shows that, on average, the frequent users group contained a higher percentage of females, Saudis, married patients, people of lower educational level, unemployed and had lower mean monthly income than the non-frequent users group. **Table 5** shows that, on average, frequent users lived closer to the PHC centre, took less time to reach the PHC centre and walked there.

Table 5: Access-related for frequent and non-frequent users (N =513)

Variable (Coding)		FREQUENT USERS n = 141 (27.5%)		NON-FREQUENT USERS n = 372 (72.5%)	
		n	%	n	%
Distance					
	< 1 km	57	40.4	137	36.8
	1 to < 3 km	59	41.8	94	25.3
	3 Km and +	25	17.7	141	37.9
	Mean (S.D.)	1.51 (1.14)		2.29 (1.81)	
Time of travel					
	< 5 min.	84	59.6	212	57.0
	5-10 min.	55	39.0	147	39.5
	11-15 min.	2	1.4	8	2.2
	+ 15 min.	-	-	5	1.3
	Mean (S.D.)	4.72 (2.22)		5.21 (2.94)	
Mode of arrival					
	On foot (0)	33	23.4	72	19.4
	By car (1)	108	76.6	300	80.6
Registration with PHC					
	Yes (0)	138	97.9	362	97.3
	No (1)	3	2.1	10	2.7

Table 6 shows that frequent users reported a higher percentage of chronic illness/disease, more visits to other health care facilities and a much higher proportion of psycho-social problems than non-frequent users. The table also shows that although most of both the frequent users and non-frequent users were generally satisfied with the health care they received in the PHC centre, more of the frequent users were satisfied than the non-frequent users.

Table 6: Health-related variables for frequent and non-frequent users (N =513)

Variable (Coding)		FREQUENT USERS n = 141 (27.5%)		NON-FREQUENT USERS n = 372 (72.5%)	
		n	%	n	%
Chronic illness					
	Yes (0)	108	76.6	56	15.1
	No (1)	33	23.4	316	84.9
Health status					
	Poor (1)	77	54.6	67	18.0
	Fair (2)	16	11.3	155	41.7
	Good (3)	27	19.1	118	31.7
	Excellent (4)	21	14.9	32	8.6
	Mean (S.D.)	1.94 (1.16)		2.31 (0.87)	
Visits to other health facilities					
	Yes (0)	128	90.8	291	78.2
	No (1)	13	9.2	81	21.8
Psychosocial status					
	Poor (1)	71	50.4	125	33.6
	Fair (2)	39	27.7	102	27.4
	Good (3)	17	12.1	90	24.2
	Excellent (4)	14	9.9	55	14.8
	Mean (S.D.)	1.82 (1.00)		2.20 (1.06)	
General satisfaction					
	Satisfied (0)	125	88.7	249	66.9
	Dissatisfied (1)	16	11.3	123	33.1

Table 7 shows the general stepwise discriminant analysis model for frequent and non-frequent users. The variables are presented in the table according to their computed F-value. It can be seen that out of the 16 independent variables, 12 factors yielded statistically significant different group means between ‘frequent’ and ‘non-frequent’ users. The table also shows that the non-significant variables were: 1) mode of arrival 2) the time required to reach the PHC centre 3) the marital status of patients and 4) registration with the PHC centre.

Table 7: The general stepwise discriminant analysis model for frequent and non-frequent users

Variables	Wilks' Lambda	Statistical inference	
		F-value	Probability
Presence of chronic illness	0.653	271.64	< 0.001 a
Income	0.951	26.28	< 0.001 a
General satisfaction	0.952	25.53	< 0.001 a
Employment	0.956	23.41	< 0.001 a
Distance	0.956	23.33	< 0.001 a
Gender	0.968	16.86	< 0.001 a
Self-reported health status	0.971	15.04	< 0.001 a
Age	0.973	14.14	< 0.001 a
Self-reported psycho-social status	0.973	13.93	< 0.001 a
Nationality	0.976	12.54	< 0.001 a
Visits to other health facilities	0.979	10.96	< 0.005 a
Education	0.981	9.68	< 0.005 a
Mode of arrival	0.998	1.03	0.311 ns
Time required to get to PHC	0.994	3.20	0.074 ns
Marital status	0.999	0.77	0.382 ns
Registration with PHC	1.000	0.13	0.719 ns
a = statistically significant		ns = not statistically significant	

Table 8 shows the significant variables entered in the final discriminant analysis model. The table shows that 8 of the 16 independent variables which statistically discriminate between frequent and non-frequent users were statistically significant. **Table 8** also shows that three of the socio-demographic variables (patient level of education, age and employment status), one of the access-related variables (distance from home to the PHC centre) and all, but one (psycho-social status) of the health related variables entered the final stepwise discriminant model. All of these variables were statistically significant ($P < 0.001$).

Table 8: Stepwise discriminant analysis of statistically significant discriminating variable for frequent vs. non-frequent users

Variables	Wilks' Lambda	Significance	Standard Coefficients
Socio-demographic variables			
Patients' level of education	0.534	<0.001	0.221
Age	0.541	<0.001	0.225
Employment status	0.565	<0.001	-0.355
Access-related variables			
Distance	0.583	<0.001	0.329
Health-related variables			
Presence/absence of chronic illness since the past 12 months	0.653	<0.001	0.889
Visit to other health facilities in The past 12 months	0.619	<0.001	0.457
Self-reported health status	0.524	<0.001	-0.215
General satisfaction with the PHC	0.548	<0.001	0.281

Table 9 shows that the discriminant function was also found to be statistically significant (chi-square = 328.043, $P < 0.001$). A canonical correlation of 0.69 for the discriminant function was achieved and the model correctly classified 87.3% of the study population (81.1% of the frequent users and 90.1% of the non-frequent users).

Table 9: Classification results of PHC users (frequent vs. non-frequent users) and canonical discriminant function group centroids

Actual Group membership	Predicted group membership	
	Frequent users (Group 1)	Non-frequent users (Group 2)
Frequent users (N= 141) (Group 1)	113 (80.1%)	28 (19.9%)
Non-frequent users (N= 372) (Group 2)	37 (9.9%)	335 (90.1%)

- Percentage of grouped users correctly classified (overall) = 87.3%
- Canonical correlation = 0.690, Chi-square = 328.043, $P < 0.001$
- Eigenvalue = 0.910 and Wilks' Lambda = 0.524.
- Discriminant function's group centroids: Frequent users (group 1) = -1.546
And non-frequent users (group 2) = 0.586

DISCUSSION

Using the criteria of the present study, it has been found that there is a relatively high prevalence of frequent use of the PHC centres. About a quarter of the respondents in the study sample were found to be frequent users of the PHC centre. The data collected in

this study indicate that the total number of visits made by this group of patients comprised about two-thirds (60.6%) of the total visits made by all respondents in the study. Thus, the results reported here suggest that these patients are responsible for the overuse of PHC services. The finding reported here is inconsistent with the results reported earlier by Qureshi et al (1996) who concluded that the PHC centres in Saudi Arabia are underutilised. However, our study did not examine whether the visits made by frequent users are considered appropriate or not. The MOH annual reports show that the use of primary health centres outstrips the increase in the number of these facilities. For example, between 1990 and 2000, the number of visits made to PHC centres increased approximately by 40% (from 37 to 52 million visits), whereas the number of PHC centres increased by approximately 10% (from 1,639 to 1,786 PHC centres).

The prevalence and level of frequent use of PHC services reported in previous studies are inconsistent and have produced a wide variation in their estimates of the percentage of primary health care consultations made by frequent users. While some studies estimate the percentage of visits made by frequent users at about 15% (Andersson et al, 1995), other studies, such as that by Courtenay et al (1974), report the percentage of visits made by frequent users to be 61% of all visits made to primary care services. Other authors report the rate of such visits to be somewhere between these two extreme values – for example, 27.5% according to Baez et al (1998) and 30% according to Westhead (1985).

It could be argued that the incidence and volume of frequent use of different health care systems can only be compared with caution. For example, the UK and the US have distinctly different health care systems; one is based on a strong foundation of ‘Gatekeeping’ primary care and the other on a long tradition of easy access to specialists so

long as the patient can pay (Fry et al, 1995). Added to this, the lack of agreement between researchers on what constitutes a 'frequent user' makes comparison difficult and may lead to discrepant conclusions.

In this study, the results of the discriminant analysis show that a variety of socio-demographic, access and health-related variables strongly influenced the chance of a patient's being a frequent or non-frequent user. As mentioned earlier, among the socio-demographic variables which were found as discriminating variables in this study were age, level of education and employment status. The present results show that frequent users, who were mostly more than 50 years old, had a significantly higher mean age than non-frequent users. Accordingly, it can be inferred that older persons are more likely to be frequent users than younger persons. This finding agrees with recent studies reported in the medical literature (Howe et al, 2002; Kersnik et al, 2001; Neal et al, 2001; Scaife et al, 2000) which reported that older patients are more likely to attend health services repeatedly than younger patients. However, the finding reported in this study contradicts the results of a study carried out in the US by McFarland et al (1985), which found that socio-demographic characteristics were not associated with frequent use.

In the literature, there is a general assumption that the elderly population constitutes a unique subset of primary care users and other health facilities as well. Older patients tend to have life-threatening conditions more often than do younger ones (Eagle et al, 1993), to be more often admitted to hospital (Sanders, 1992) or to attend a health facility with multiple acute illness because of the ageing process (Meyer and Bridges, 1998). To those who recognise the rapid ageing of Saudi society, the heavy utilisation of primary health care services by the elderly seems likely to increase. This should prompt policy makers to propose health plans to cope with such an increase.

The present study shows that persons with a lower level of education are more likely to be frequent users. A possible interpretation of this finding is that patients of low educational level may have poor health status and thus they attend PHC centres frequently. Further, they may not be aware of how to manage minor illness or injury or they may delay seeking primary medical care (perhaps because of ignorance) until their condition becomes so severe that they have to contact the doctor several times until their condition improves. Lower levels of education has been considered a risk factor for frequent attendance (Baez et al, 1998; Dunlop et al, 2000).

The results of this study indicate the importance of the employment status of people as a determinant of being a frequent user. This finding agrees with the results reported by authors from Canada (Browne et al, 1982) and Finland (Karlsson et al, 1994), who found that a significantly higher proportion of frequent users were more likely to be unemployed or of lower economic status. It is possible that adults who are not working or in a lower socio-economic stratum delay seeking medical help until their health condition deteriorates and consequently they may need a number of repeated visits until they recover. Another possible reason is that unemployed subjects have more spare time and accordingly may have formed the habit of going to the PHC centre frequently.

Although Saudis comprised about two-thirds of the frequent users' group, nationality did not appear as a statistically discriminating variable. In addition, the study did not find any significant differences, in the discriminant analysis, between frequent and non-frequent users in terms of their gender, marital status and income. This means that frequent and non-frequent users were not significantly different from

each other as far as these variables are concerned. However, studies carried out in the UK (Westhead, 1985; Heywood et al, 1998; Neal et al, 1996) indicate that frequent users are more likely to be women and less likely to be married.

In this study, among the access-related variables, only distance was found to be a discriminating variable between frequent and non-frequent users. The present findings show that the shorter the distance a patient had to travel to the PHC centre, the more likely he or she would be a frequent user. A study conducted in Riyadh by Al-Omar and Saeed (1999) notes that distance was found to strongly influence the utilisation of PHC services, but in a UK study carried out by Courtenay et al (1974), distance from the primary care facility was not specifically associated with frequent attendance. It could be argued that if proximity of residence to the PHC centre is a major factor in influencing people's decision to attend there frequently, then any programme targeted at reducing frequent use might have maximum impact if aimed at the population living closest to these PHC centres.

Neither 'time taken' to get to the PHC centres nor 'mode of travel' was found statistically significant in the discriminant analysis. However, the results of this study indicate the relative importance of the time required to get to the PHC centre and the mode of transport to the PHC centre, because the results here show that more than half of both frequent users and non-frequent users usually needed less than five minutes to reach the PHC centre. Further, about one-quarter of frequent attenders (23.4%) and one-fifth (19.4%) of non-frequent attenders usually went to the PHC centre on foot when they need medical help. Given these findings on distance, time and mode of transportation, not surprisingly persons who live closer take less time to reach the PHC centre and those who usually walked to the PHC centre were more likely to be classified as frequent users. This

probably indicates the convenience of the PHC location and supports the argument that where the PHC centres are easily accessible they are likely to be used frequently.

Among the health-related variables which were found to be statistically significant discriminating variables between frequent and non-frequent users are the following: the presence or absence of chronic illness/disease, previous visits to other health facilities in the past year, patients' perception about their health status and patients' general satisfaction about the health care they receive in the PHC centre. As results showed, the vast majority of patients who reported having chronic complaints were classified in the discriminant analysis as frequent users. It should be noted that their reports of illness were not validated, in this study, by any medical professional. Previous research, however, suggests that frequent users have a higher morbidity of chronic illness than normally attending patients (Gill and Sharpe, 1999; Schrire, 1986) and this finding was corroborated in this study. It is worth noting that the present study did not attempt to collect data on the common illnesses and diseases from which the population may suffer, but the literature indicates that frequent users usually suffer from some sort of physical (Karlsson et al, 1994), psychological (Courtenay et al, 1974) or circulatory complaint (Westhead, 1985). Further studies may be needed in Saudi Arabia to verify such a result.

An important finding of this study was that the frequent users were not only high users of the PHC centre, but also of other health care facilities. The study did not attempt to quantify the number of visits made to other facilities (e.g. emergency departments, out-patient clinics or private doctors), but the patients were asked to report whether they had visited other facilities in the previous 12 months. Those who were classified as frequent users made on average a

significantly higher number of visits to other health facilities over the past year than those who were not. This finding is in agreement with other authors from Slovenia (Kersnik et al, 2001) and Canada (Browne et al, 1982), who find that frequent attenders tend to be high users of other services, such as emergency departments, specialists and hospital services.

It was expected that the high rate of PHC attendance by this group of people would deter them from seeking care at other health facilities, but the data here did not support this assumption. It is possible that the open-door policy which is adopted by the PHC centres and other public health facilities, together with their free services and ease of access are among the contributory factors which encourage people to attend them. Another possible explanation of this multiple use of health care facilities is that patients tend to visit a health care facility more and more often until they are satisfied with their treatment. In this respect, studies by Andren and Rosenqvist (1987) and Hansagi et al (1989) find that multiple users are a higher risk group and have high morbidity and mortality rates and significant health problems leading to more frequent use of health facilities. In one recent study, Hansagi et al (2001) suggest that frequent users of a particular health facility (e.g. an emergency department) are also frequent users of other health care services as well, presumably because they are sicker than the average. Hansagi et al argue that this knowledge may be helpful for care providers in their endeavours to find appropriate ways of meeting the needs of this category of vulnerable patients.

When patients were asked about the status of their health, the majority of respondents in the frequent users' group rated their health status as 'poor'. Thus, frequent users were more likely to assess their health status as poor than non-frequent users were. This finding agrees

with the results reported by Westhead (1985), who finds that about half of the patients included in his study assessed their physical health as poor. Similarly, Andren (1988) notes that frequent use of health services has been associated with perceived ill health as well as deteriorating health. These findings contradict the findings reported by McArdle et al (1974) who states that socio-economic factors such as unemployment and loneliness seem to be the most determining factors in the number of visits to the doctor. However, the results emerging from the present study should be interpreted with caution because the data were reported on the basis of the patients' assessments, not the doctors. It is possible that some patients overestimate their health condition in order to justify their attendance at the PHC centre. It has been speculated that patients presenting to health care facilities would be more likely to report themselves as having poor health than those who do not present (Boushy and Dubinsky, 1998; Brown and Goel, 1994).

The presence of psycho-social difficulties was not found as a discriminating variable in this study. However, studies from the UK (Heywood et al, 1998; McArdle et al, 1974), Finland (Jyvasjarvi et al, 1998; Karlsson et al, 1994), Slovenia (Kersnik et al, 2001), Sweden (Andersson et al, 1995) and Canada (Browne et al, 1982), conclude that frequent attenders were more likely to have lower psycho-social status, such as anxiety, depression, homelessness, drug abuse, lower perceived quality of life, lack of social support and psychiatric illness. People who live alone (Purdie et al, 1981) or lack friends or social support (Padgett and Brodsky, 1992) make more visits than do people with a strong social support system. It is difficult to generalise these findings to the Saudi context since these studies are conducted within different cultures and different health care systems. Further, many of these studies may have limited generalisability because many of them are based on convenience samples and examine limited sets of

potential explanatory factors. Studies are needed in the Kingdom to determine whether patients with psycho-social problems could partially explain the heavy workload of primary health care facilities.

The results of this study show that the majority of both frequent and non-frequent users were generally satisfied with the health services to be obtained at the PHC centre. However, the results indicate that frequent users were more satisfied than their counterparts in the non-frequent group. It could be that frequent users visit PHC centres more often because their previous visits usually entailed pleasant experiences. This supports the argument by Breslau and Reeb (1975) who reports that trust between a patient and a primary care doctor makes patients more likely to seek care from their regular physician than from other facilities. Similarly, Pease (1973) from the UK and Marquis et al (1983) from the US note that individuals who are dissatisfied with their primary care provider are more likely to seek care elsewhere in order to meet their health needs. In contrast, Heywood et al (1998) find no evidence of an association between frequent attendance and dissatisfaction with general practice services. On the evidence of their study, dissatisfaction is neither a cause nor a consequence of frequent attendance. However, Al-Omar (2000) notes that patient satisfaction is not necessarily the major criterion by which a health facility should be evaluated. Further, Green and Dale (1992) report that patients may need to 'justify' their attendance at a particular health care facility perhaps by claiming satisfaction or dissatisfaction with it.

CONCLUSION

While several studies in different countries have described the problem of frequent use of primary health care facilities, no previous studies in the Kingdom of Saudi Arabia appear to have discussed this issue other than the present one. The findings of this study show that

there is an over-utilisation of primary health care facilities created by a subgroup of the population. Such use may be tracked down by understanding the factors which influence patients who attend the PHC centres frequently in view of the fact that such behaviour can lead to an increase in the workload of these centres and to an increase in the cost of the health service. If frequent attendance by this small group of patients continues in this vein, it will markedly increase the burden on these primary centres and adversely affect the delivery of the health services.

The problem of frequent use is complex. In fact, Neal et al (1996) note that, despite extensive research, it has not been established whether frequent attendance is simply behaviour at one end or the normal distribution of consulting frequency or something more special. Neal and colleagues suggested that there are two hypotheses about frequent attender patients. Firstly, they may be individuals behaving appropriately in response to real need, who happen to be at the top end or the consulting spectrum. Secondly, they may be deviant individuals, who cause an unnecessary and unwelcome workload, with whom “something must be done”.

Numerous studies have examined a variety of associated characteristics of frequent attenders, indicating that frequent attenders comprise a highly heterogeneous group of patients with a wide variety of needs (Halfon et al, 1996). The results of this study show that a variety of socio-demographic, access and health-related factors strongly influence the chance of a patient being a frequent user. In general the results reported here are broadly in line with those found in the literature which suggest that a combination of these variables leads to the increasing likelihood of a patient's being a frequent user. At the same time, it should be noted that these factors do not operate individually, but they interact in a complex and varying manner.

These results have considerable significance for the planning of health care services in the Kingdom.

Recommendations

Frequent attendance at primary health care facilities is costly in terms of time and money and often increases the workload on the services provided in these significant facilities. Understanding the factors which motivate patients to attend PHC centres frequently should precede any intervention plans which attempt to persuade people to modify their health-seeking behaviour. Whatever the causes of their frequent attendance, this group is an expensive one and thus provides a good target for potential reductions in the workload which they create and in medical expenditure.

One strategy would be an educational intervention. Since health education is one of the main principles of primary care concept adopted by the MOH, it is suggested that educational interventions, such as on-site educational programmes, should be implemented. The doctors, nurses and other allied health personnel who treat such patients can also play an important role in the reduction of frequent use by teaching them how to manage minor or chronic health complaints. Such educational endeavours could be directed to patients who have the characteristics of frequent users reported in this study.

Other possible interventions to reduce frequent attendance at the PHC centre are the enhancement of preventive care provided by the PHC workers, the use of social services in PHC centres and the increment of referrals to the rehabilitation services for those with chronic illness. Further, a special register at the PHC centres could be maintained for this group of patients so that specific treatment and follow-ups could be given. Such a register may include information about the frequent users' physical and psycho-social needs. These

strategies, if implemented, would probably be valuable in the long run and would alleviate some of the workload carried by PHC workers and generated by this group of patients.

Finally, this study found that the frequent users of the primary health care centre were also frequent users of other health care facilities. Such behaviour may lead to duplication of services and to higher costs in terms of time and money. In order to attain efficiency and cost-containment in health care, efforts should be made to study how continuity of care in the primary care centres could be established to better address the needs of this group of patients.

Until more is known about why some patient go from one health facility to another, a duplication in the delivery of health care may continue and not much can be done to assist these patients.

Limitations of this study

The study does, however, have its limitations; in many senses. The findings reported in this study may be influenced by the inevitable limitations of the study design and the available data. Nevertheless, it is believed that the results provide a valuable insight into some of the factors which appear to influence the frequent use of primary health care centres in Saudi Arabia.

The major limitation concerns the definition of what constitutes 'frequent' use. The dichotomisation of patients into 'frequent' and 'non-frequent' users was not based on any standard, but on previously published studies which also used a similar methodology. That is, the use of 10 visits as a criterion to identify frequent users was inevitably subjective and does not take into account the differences in the frequency of visits (for example, between males and females and between various age groups). In fact, the data collected in this study

indicate that females and persons aged 41-60 are over-represented, and the results are not completely comparable with other studies in the literature. However, no valid or reliable criteria have ever been set up to define frequent users and accordingly in virtually all studies there is an arbitrary definition of what constitutes 'frequent attendance'. In the absence of a clear-cut definition of what constitutes 'frequent use', and in order to obtain an estimate of the prevalence of the problem, the above simple and feasible classification was used.

If appropriate strategies for managing frequent attenders in PHC centres are to be developed, it is first necessary to develop a comprehensive profile of those patients who are most likely to attend frequently. This requires additional information on many variables other than those investigated in this study, which included only information on the few variables that could be collected from patients attending the PHC centre. We were therefore unable to explore the significance of other possible variables which could be collected only from patients' medical records or from doctors treating these patients.

As with any questionnaire study, there was no way to ensure that the respondents' answers would correlate completely with their actual behaviour. The results in this study are based on information provided by patients and are subject to the usual problems of bias associated with the accuracy of recalling and reporting on health care events. Finally, due to financial and time resources, this study took place in a single PHC centre in Riyadh City. Accordingly, the study does not claim to be comprehensive and the results may have limited applicability to other PHC centres.

Further research

Research often produces more questions than answers; this study is no exception. While the results generated from this research may be of help in finding approaches to alleviate the frequent use of PHC centres, there remain a number of issues warranting further research. Firstly, this study examined only the frequent users in one PHC centre. Thus, further investigation, perhaps of a large number of PHC centres in the Kingdom, or using more individual methodologies, for example, interview surveys, in-depth interviews or focus groups, might elicit a greater volume of, or more specific, information concerning the frequent use of PHC centres to increase and enrich the understanding of this significant problem.

Secondly, since this study did not take the type of health condition (e.g. physical, psychological, etc.) into account, future research should examine it. The making of a decision to attend a PHC centre frequently is far more complex than the present research may suggest. Further research may examine variables other than those reported here, including accessibility, availability and organisational variables which may have an influence on frequent attendance.

Finally, in this study, the appropriateness of the visits made by the frequent users to the PHC centre was not examined; thus, further research is needed to determine whether visits made by frequent users are appropriate or not. This could be a very important subject for further research.

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الحضور المتكرر لمراكز الرعاية الصحية الأولية: معدل الانتشار ، خصائص المرضى ، والعوامل ذات الارتباط بالظاهرة

سعد بن عبد الله الغانم

أستاذ مساعد

قسم الإدارة العامة - كلية العلوم الإدارية

جامعة الملك سعود - الرياض - المملكة العربية السعودية

المستخلص: الأهداف: تحديد معدل انتشار ظاهرة الحضور المتكرر لمراكز الرعاية الصحية الأولية وكذلك تحديد المتغيرات التي قد تميز بين الأفراد ذوي الحضور المتكرر والأفراد ذوي الحضور غير المتكرر لهذه المراكز.

الطريقة: استخدمت الدراسة الاستبانة لجمع البيانات من المراجعين منهم في عمر ١٨ سنة (أو أكثر) الذين زاروا مركزا للرعاية الصحية الأولية في مدينة الرياض . تم تصميم الاستبانة لجمع بيانات ديموجرافية واقتصادية ، معلومات عن سهولة الوصول للخدمة الصحية وكذلك معلومات عن الحالة الصحية المراجعين. تم استخدام كل من التحليل الإحصائي الوصفي وتحليل التمايز المتدرج وذلك لتحديد المتغيرات التي قد تظهر تمايزا بين الأفراد ذوي الحضور المتكرر والأفراد ذوي الحضور غير المتكرر.

النتائج: أظهرت الدراسة أن هناك مجموعة صغيرة من الأفراد مسؤولة عن نسبة عالية من كمية العمل في مراكز الرعاية الصحية الأولية. كما أظهر تحليل التمايز المتدرج أن هناك ثمانية من المتغيرات الستة عشر هامة وذات دلالة إحصائية للتمييز بين الأفراد ذوي الحضور المتكرر والأفراد ذوي الحضور غير المتكرر.

الخاتمة: تبرز الدراسة أهمية مجموعة من العوامل التي تحفز المرضى على الحضور المتكرر لمراكز الرعاية الصحية الأولية. كما تلقت الدراسة نظر واضعي السياسات الصحية إلى ضرورة دراسة هذه العوامل قبل اتخاذ أي إجراء تصحيحي لسثي المراجعين على تعديل سلوكهم في البحث عن الخدمة الصحية. توصي الدراسة باجراء دراسات مماثلة على نطاق أوسع في المملكة وخاصة للبحث عما إذا كان هذا الاستخدام المتكرر صحيحا وله ما يبرره.

الكلمات المرجعية: معدل الانتشار ، الحضور المتكرر ، تحليل التمايز المتدرج ، سهولة الوصول للخدمة الصحية ، الحالة الصحية.

