

Profiling Elderly and Younger Patients Attending Health Care Facilities: Implications for Health Care Planning

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Abstract. The Objective of this paper is to profile elderly and younger patients who attend health care facilities in Saudi Arabia and to identify health facilities used by these groups of patients.

The data were collected by a self-administered questionnaire from elderly and younger patients during July 2008. One-thousand patients were selected randomly during their attendance at five primary health care centers in Riyadh City, of which 854 (85.4%) successfully completed the questionnaire. The data were collected on selected characteristics, including predisposing, enabling and need characteristics relevant to the study. Chi-square and t-test were used to present the results.

Approximately three quarters (77.6%) of elderly patients and half (48.9%) of younger patients used health services during the past 12 months. The results indicate that elderly people had significantly higher mean scores of visits to primary health care centers, emergency departments and were more likely to be hospitalized than younger patients. On the contrary younger patients were more likely to refer themselves to private pharmacy for self-treatment. The study identified the profile of patients using these facilities.

Elderly people constitute a unique subset of health services users. This vulnerable group of people tends to make an increase use of the health resources which should prompt policy makers in the Kingdom to consider their characteristics and propose plans to provide them with relevant health services.

Introduction

The general advancement in medicine and knowledge has contributed to the increase in life expectancy of the population, not only in Saudi Arabia but in all countries of the world. This has led the people to live longer and at the same time has led to an increase in risk of illness, diseases and injuries (World Health Organization, 2000). Despite the fact that the number of elderly people in Saudi Arabia is less than 3% (Ministry of Health, 2007), this percentage is expected to increase as a result of the improved economic status, health services coverage and decline in mortality and morbidity rates (Ministry of Planning, 2005). Ministry of health annual reports indicate that the life expectancy of the Saudi population has increased sharply in the past few years and peaked 73.1 years (men 72.1 and women 74.1 years) (Ministry of Health, 2007).

There is evidence that the increase in the age of the population makes the provision of social services, including health services, to the elderly a major challenge both to health care providers and policy makers. Research has identified that elderly people have unique characteristics which affect their demand for health services. In order to provide elderly people with relevant health services, recent information about the extent of the utilization of health services by this age-group of people is needed, their characteristics are needed to be explored and the types of health services used by these people are needed to be known. Muller (1986) indicated such analyses will improve the health care system performance and serve the people using the system.

Research Questions

Since elderly people are an integral part of the society and are entitled to their share of health services, understanding the current profile of elderly people and types of health services they use is an important step in the assessment of the need and setting priorities that should be allocated to this vulnerable group of people. Therefore, the current study seeks answers for the following questions:

- 1) What are the general characteristics of elderly patients who used health services?
- 2) What are the types of health care facilities used by elderly patients?

3) What future research is needed to address some of the health needs for the elderly patients?

Significance of the Study

Since the proportion of elderly people in the Saudi population is growing, the number of chronically ill patients in the community will increase as well. As a result, the demand for health care services is expected to expand and the costs of health care are expected to continue to increase in the future. De Boer, *et al.* (1997) in their research that elderly patients are consistently high users of health care services.

It is anticipated that the findings of this study will help health decision-makers in understanding the characteristics of the elderly patients using the health services and, therefore, be of importance in developing meaningful measures and intervention for the provision of health care to this group of people in the Saudi society.

Finally, rational planning and allocation of scarce health resources to the elderly people require data on the utilization of health care facilities and on the users' characteristics. Therefore, the present study is expected to provide a significant amount of information and its findings are intended to be useful to those planning and developing health services for older people and to those involved in forming public health policies for the whole population.

Objectives of the Study

The main goal of this study is to provide a description of the profile health services users and the types of health services used by the elderly patients in Riyadh city. More specifically, this study aims to achieve the following objectives:

1. To describe the general profile and characteristics of elderly and younger patients who use health services.
2. To identify types of health facilities used by both elderly and younger patients.
3. To suggest recommendations that help decision-makers to plan and provide health services to the elderly people.

Literature Review

A great quantity of literature concerned with the utilization of health facilities has emerged over a long period of time in both developed and developing countries. This part of the study reviews, briefly, the literature on some aspects relevant to the work of this study.

The Elderly Population

In general, “elderly” has been defined as a chronological age of 65 years old or older, while those from 65 to 75 years old are referred to as “early elderly” and those over 75 years old as “late elderly” (Orimo *et al.*, 2006). However, the evidence on which this definition is based is unknown. According to the World Health Organization (WHO), elderly people are those aged over 65 years.

The majority of studies used 65 years as the ‘cut-off’ point between older and younger patients; selecting those aged 65 and over as the elderly population for study. Other studies used 60, 70, and 75 years as cut-off points. In their research, Shim, *et al.*, (2006) indicated that the definition of “elderly” is always changing over the time. The lack of a standard use of an agreed cut-off age in all studies and other differences in methods made comparisons between studies difficult (Meyer and Bridges, 1998). Since there is no standard or agreed definition in the literature on what constitutes “elderly”, the present study will define elderly patients as those 65 years or older. This definition has been used mostly in studies of the medical literature.

The world population ageing is a phenomenon caused by an increase in the absolute and relative number of elderly in developed and developing countries. According to Sidik, *et al.* (2003), this is a result of dramatic decline in mortality rates (increase life expectancy) over the past few years and also sharp falls in birth rates, especially in nearly all developing countries. According to the official statistics of WHO, there were about 650 million elderly, aged 60 and over in the year 2007 and by 2050, the world's elderly population is forecast to reach 2 billion (WHO, 2008). Approximately two-thirds of the world's elderly people are living in developing countries. In anticipation of this shift in population demographics, previous research suggests that health care providers and decision makers need to be alert and informed of the special needs of the elderly people.

As people's life expectancy increases, health care providers are confronted with the challenge of treating an elderly population which has a variety of health priorities and needs. A study carried out in Canada (Tannenbaum *et al.*, 2005) reported that elderly people face functional, psychological and social difficulties in addition to health related conditions. Authors of this study suggested that one solution to align care more closely with elderly people's health priorities is to practice patient-centered care, whereby clinical decision-making is focused primarily on the priorities and preferences of individual patients.

Characteristics of the Elderly Population

In general, findings from the previous research indicate that the elderly population constitutes a unique subset of health services users. They tend to have life-threatening conditions more often than do younger ones (Eagle *et al.*, 1993), to be more often admitted to hospitals (Sanders, 1992), have a medical (as opposed to surgical) condition and spend longer in health care facilities (De Boer *et al.*, 1997; Victor, 2000). Moreover, elderly persons utilize more diagnostic tests and present to health care facilities with multiple diseases or illnesses (Victor, 2000; Beregi, 2005). However, little has been published on use of health services by the elderly population in Saudi Arabia.

The provision of good quality of health care to the elderly people needs a thorough understanding of how this group of people utilizes health services. Therefore, a number of studies in the medical literature explored the elderly use of health services in order to provide this vulnerable group of the society with the health services they deserve. Grol, *et al.* (1999), for instance, indicated that such studies are important since priorities in health care are still usually determined by professionals and health authorities. Similarly, several authors have consistently shown that patients' perspectives, including the elderly perspective, on what services they need are critical determinants and have validity as causes of help-seeking behavior (Walsh, 1990; Padgett and Brodsky, 1992; Sbaih, 1993). Thus, by ignoring the elderly patients' views on health care they receive we may neglect aspects of care provision which are important from the perspective of the elderly in the use of health care.

The Utilization of Health Resources by Elderly People

Utilization is defined as obtaining the health care provided by the health care services in the form of health care contact (Fernandez-Olano

et al., 2006). Previous research shows that the elderly patient's decision to use the health care services is the result of a complex interaction of several factors. These factors may relate to the elderly person's health status (John *et al.*, 2002; Margolis *et al.*, 2003), perceived health status (Bobak, 1998), availability of health resources (Wensing *et al.*, 2002) and the accessibility to health facilities (Gulliford *et al.*, 2002; Bently, 2003).

In the literature, there are several studies which assess the utilization of health services by the elderly people. These studies were conducted in countries with different cultures, values and health care systems such as the United States (Bentley, 2003), the United Kingdom (Bartlett, 1999), Canada (Snider, 1980), France (Rodwin, 2003; Alche-Gautier *et al.*, 2004), Germany (Brockmann, 2002), Japan (Shimada and Orimo, 1998; Twata *et al.*, 2003), Sweden (Werntoft *et al.*, 2005) and other Far Eastern countries (Chi and Hsin, 1999; Ahn and Kim, 2004). These studies indicate that the workload and economic burden which these patients impose on various care facilities makes it essential to identify their characteristics so that better intervention strategies can be invented.

Studies on utilization of health services indicate that the elderly make extensive use of health care resources. For example, data from the USA indicate that 33% of health care expenditures are incurred by the elderly population. In Spain, the elderly account for 40% of general practitioner activity, 25-65% of home visits and 52% of the medications prescribed at the primary care facilities (Fernandez-Olano *et al.*, 2006).

In their research, Victor *et al.*, (2000) identified that older patients aged 65 years and over are the main users of the British health care and reported that elderly patients are admitted to hospital more often than younger patients, stay longer and account for about half the hospital workload measured in terms of bed days. Moreover, the study indicates that older people use more hospital services and therefore, their utilization rates are rising faster than other age groups.

Many studies attempt to identify the factors associated with utilization of health services, in an attempt to explain the phenomenon. These factors include socio-demographic characteristics (Howe *et al.*, 2002; Scaife *et al.*, 2000), medical factors (physical illness) and psychiatric disorder (Karlsson *et al.*, 1994), Organizational factors, accessibility to health care facilities (Gulliford *et al.*, 2002), availability

of health facilities and resources (Moony, 1983), geographical factors (Fylkesnes, 1993) and satisfaction with care (Sarver *et al.*, 2002).

Various theoretical models of health care utilization have been formulated in an attempt to understand from various perspectives (social, economic, psychosocial, behavioral, epidemiological, *etc*) which variables are influencing health services utilization and the extent of such use. In the literature, Health-seeking Behavior Model (HBM) developed by Andersen and Newman (1973) has been used almost exclusively to conceptually organize health services utilization research.

According to Andersen and Newman (1973), paying a visit to a health facility is determined by three sets of factors: (1) predisposing factors such as age, gender, race/ethnic group and social status; (2) enabling factors include conditions that facilitate or inhibit the use of health services such as insurance coverage, income, distance to the health centre; availability of regular source of care and, (3) need or health status variables which may include perceived need and urgency, level of distress and presence of psychiatric co-morbidity.

The health belief model (HBM) suggested by Rosenstock (1966) assumes that consumer attitudes and beliefs are important determinants of health action. Leavitt (1979) reports that, within this framework, beliefs concerning four sets of variables are used to account for variations in health care utilization when cues to action, such as symptoms, are present. They are the individual's view of his/her own vulnerability to illness, his/her beliefs about the severity of that illness defined either in terms of physical harm or interference with social functioning, his/her perception of benefits associated with actions to reduce the level of threat or vulnerability and his/her evaluation of potential barriers associated with the proposed action which can be physical, psychological or financial.

Comparison of the variables in various different models used in studies on use of health-care services reveals that there is a large overlap in the variables used in the models (Cummings *et al.*, 1980) and that findings of studies reporting on the use of health facilities are inconsistent and the contributing factors vary from one study to another, perhaps because of the varying in methodologies used, differing medical care systems, different time periods and the rhetoric of interpretation.

Previous Research on Elderly Population in Saudi Arabia

Data on the elderly from Saudi Arabia were scarce which makes comparison with other countries difficult. However, previous research in Saudi Arabia, although not specifically conducted to examine the utilization of health services by the elderly people, indicates that elderly people represent the most frequent users of health facilities such as primary health care centers (Al-Ghanim, 2005), secondary and tertiary health care facilities (Siddiqui and Ogbeide, 2002; Irshaid, *et al.*, 2004) and acute health services (Al-Shammari, 1996). Moreover, studies on elderly in Saudi Arabia were restricted to specific departments such as accident and emergency (A&E) departments (Al-Shammari, 1991; Siddiqui and Ogbeide, 2002) and inpatient services (Al-Shammari, 1996) or specific diseases associated with elderly patients such as diabetes (Khan and Khan, 2000), obesity (Abolfotouh *et al.*, 2001) and hypertension (Al-Turkey, 2000).

Despite the limited studies on the utilization of health services in Saudi Arabia, these studies are general of nature and 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). There is still need for more research on the elderly patients in Saudi Arabia because of their greater risk of physical, social and mental health problems.

Thus, the utilization of health care by the elderly people is influenced by a variety of factors. An important starting point for designing proper provision of health care for the elderly is to understand factors which determine the utilization of health services by this group of population.

Methodology

This section describes the methodology employed in this study, including the study population and sample, variables included in the study, methods of data collection and analysis.

The Study Population and Sample

The population consists of all adult patients (defined as 18 and above) who attended primary health care centers in Riyadh city during

the study period (July, 2008). In order to describe the characteristics of elderly patients who use health services, younger patients were included in the study (elderly patients were defined as those 65 years and above and younger patients were defined as those aged between 18 and 64). Accordingly, a stratified random sampling technique was used in order to get a representative sample from both elderly and younger patients. Riyadh city was divided into five areas; North, South, East, West and Center. From each area, two primary health care (PHC) centers were selected using the simple random sampling.

In every PHC center, 200 patients (100 elderly and 100 younger patients) were selected using systematic random sampling. Patients who refused to participate and those in severe cognitive impairment or having difficulty in communicating with the researcher or his assistants were excluded from the study and were replaced by other participants. Those who had difficulty in understanding the questions were assisted by the author and/or his trained assistants. By using this methodology, 1000 patients participated in the study, of which 854 (85.4%) patients successfully completed the questionnaires valid for analysis.

Despite this study was set to determine the utilization of all health facilities, regardless of their types, PHC centers were selected as sites for conducting this study because PHC centers are considered the first level of contact in the Saudi health care system. Therefore, it was assumed that all age-groups of people, including the elderly, will present to these facilities for their normal health care. Moreover, the Saudi Ministry of Health annual reports showed that PHC centers are the most used facilities by the general population compared to other facilities such as hospitals where only patients with referral letters are eligible to use them.

Data Collection Tool

The data were collected using a self-administered questionnaire from the study sample. The questionnaire was designed to capture information relevant to the study. Questionnaires are, probably, one of the most popular ways of collecting research information. They are economic in terms of both time and money, they can reach a large number of people, they are relatively easy to analyze and they are familiar objects to the majority of people to whom they are given (Rees, 1990). However, several serious disadvantages of self-completion questionnaires must also be considered. For example, Bennett and Rithie

(1975) indicated that they can only be used where simple and straightforward questions can be formulated and understood with the aid of written instructions. Further, self-completion questionnaires are affected by a larger set of unknown non-respondents and response rates can be very variables (Mullen and Spurgeon, 2000). Based on the understanding of the advantages and disadvantages of using questionnaires, together with the contribution of the pilot study and the nature of this study, it was decided to rely mainly on using self-completion questionnaire method, acknowledging its limitations.

A number of steps were taken into account to increase the content validity of the questionnaire. First, a review of the relevant literature was carried out in order to find out variables related to the utilization of health services by the population. Second, the questionnaire was pre-tested in a pilot survey of 40 persons (20 elderly and 20 younger patients) to ensure that the wording, format and length of questions were appropriate. Finally, an academic panel of three staff (including one geriatrician) reviewed the questionnaire and made comments and suggestions. In the light of their feedback and the outcome of the pilot study, a few questions were rephrased and others were added (or excluded). The pilot survey questionnaires were not included in the main study. The covering letter of the questionnaire outlines the title and the purpose of the study. Patients were informed verbally (as well as in the covering letter of the questionnaire) about the purpose and the importance of the study and were encouraged to participate. A guarantee about the confidentiality of the information disclosed was mentioned to all participants.

Variables of the Study

The general hypothesis of this study is that the utilization of health services by patients is influenced by a number of predisposing, enabling and need variables. Accordingly, a model that incorporates these variables was used. This model was used as a framework in order to provide structure and organization for the variables which may describe the profile of elderly and younger patients who use health services.

Predisposing variables included gender (males vs. females), age (65-74 vs. 75 and over), marital status (married vs. unmarried), nationality (Saudi vs. non-Saudi) and employment status (employed vs. unemployed).

Enabling variables included patient's level of education (< high school *vs.* $\geq$ high school), having knowledge about services (yes *vs.* no), having continuity of care (see doctor regularly *vs.* see doctor only when having a health problem), patient's monthly income (< SR 5,000 *vs.* $\geq$ SR 5,000) and presence of health insurance (yes *vs.* no)

Need variables included presence of chronic condition (yes *vs.* no), presence of functional limitation (yes *vs.* no), presence of severe illness (yes *vs.* no), perceived health status (good *vs.* poor), perceived psychological status (good *vs.* poor) and needing help with personal care (yes *vs.* no).

Finally, patients were asked to identify types of health facilities they visited in the past 12 months (including primary health care centers, outpatient clinics, emergency departments, private pharmacies and whether the patient was admitted to inpatient services at least 24 hours in the past year). Moreover, patients were asked to report the number of visits made to each of these health facilities.

Such grouping of variables was arbitrary and was not based on any objective criteria. However, it has been used in a number of similar studies which describe the predisposing, enabling and need variables of patients who use health services and facilities (Andersen and Newman 1973; Wolinsky 1978; Evashwick *et al.*, 1984; Phillips *et al.*, 1988; Shah *et al.*, 1996; De Boer *et al.*, 1997; Hassell *et al.*, 2000).

Data Analysis

This study was designed to describe the characteristics of elderly and younger patients who used health services. Frequencies, percentages and mean visits were used to describe the results of the study. Chi-square test was used to determine the difference in the percentages between elderly and younger patients for selected categorical variables. Student's *t*-test was used to determine the difference between elderly and younger patients in the mean visits to the various health care facilities. The data for this study were entered and analyzed in a descriptive fashion using the Statistical Package for Social Sciences (SPSS).

Results

This section identifies the general profile of respondents (elderly and younger patients) who participated in the study, the extent of the general

utilization of health services and the types of health facilities used by the study population.

The General Profile of Respondents

There were 854 respondents in the study sample, of which 400 (64.8%) were elderly and 545 (53.2%) were younger patients. Females were more representative in the study sample and constituted 56.2% of the total sample. Respondents were aged between 18 and 87 years with a mean age of 58.2 years and 17.9 years of standard deviation. More than three-quarters of respondents were married (76.2%) and Saudis comprised 82.4% of the study sample. The sample was split between employed and unemployed respondents (50.6% and 49.4% respectively). Those who had an educational level of high school or higher constituted about two-thirds of the study sample (66.9%). More than 80% of the respondents had a monthly salary of less than SR 5,000. Those who reported having health insurance were the least majority and constituted only 8% of the study sample.

Profile of Respondents According to their Predisposing Characteristics

Table (1) shows the distribution of socio-demographic characteristics of respondents after they were classified into "elderly" and "younger" groups. In the study sample, elderly and younger respondents were similar with respect to their gender and nationality. Elderly respondents had a significantly higher percentage of married individuals (83.5%) than younger patients (69.8%) ($\chi^2 = 21.201, p < 0.001$). On the contrary, elderly respondents had a lower percentage of those who were in employment (10.5%) than their counterparts in the younger group (85.9%) ($\chi^2 = 480.665, p < 0.001$).

Profile of Respondents According to their Enabling Characteristics

Table (2) presents the characteristics of respondents according to their enabling variables. Younger patients reported a significantly higher percentage (87.7%) of knowledge than elderly patients (75.0%) ($\chi^2 = 22.006, p < 0.001$). On the contrary, elderly patients had a significantly higher percentage (39.5%) of continuity with health care provider than younger patients (20.3%) ($\chi^2 = 37.079, p < 0.001$). Elderly patients had a significantly lower percentage of individuals who earn a monthly income of SR 5,000 or more, than individuals in the younger group ($\chi^2 = 75.659, p < 0.001$). Similarly, elderly patients had a significantly lower percentage

of individuals who were insured than younger patients ($\chi^2 = 8.267$, $p < 0.01$).

Table 1. Socio-demographic characteristics of elderly and younger patients attending health care facilities.

Characteristics		Elderly (N = 400)	Younger (N = 454)	χ^2	P-value*
		n (%)	n (%)		
Gender					
	Males	188 (47.0)	186 (41.0)	2.902	0.088
	Females	212 (53.0)	268 (59.0)		
Marital status					
	Married	334 (83.5)	317 (69.8)	21.201	0.000
	Unmarried	66 (16.5)	137 (30.2)		
Nationality					
	Saudi	338 (84.5)	366 (80.6)	1.955	0.162
	Non-Saudi	62 (15.5)	88 (19.4)		
Employment status					
	Employed	42 (10.5)	390 (85.9)	480.665	0.000
	Unemployed	358 (89.5)	64 (14.1)		

* Statistical significant difference in the percentage between 'elderly' and 'younger' patients.

Table 2. Enabling characteristics of elderly and younger patients attending health care facilities.

Characteristics		Elderly (N = 400)	Younger (N = 454)	χ^2	P-value*
		n (%)	n (%)		
Educational level					
	< high school	184 (46.0)	99 (21.8)	55.091	0.000
	≥ high school	216 (54.0)	355 (78.2)		
Having knowledge where to get health services					
	Yes	300 (75.0)	398 (87.7)	22.006	0.000
	No	100 (25.0)	56 (12.3)		
Continuity with care					
	See doctor regularly	158 (39.5)	92 (20.3)	37.079	0.000
	See doctor only when having a problem	242 (60.5)	362 (79.7)		
Monthly income					
	Less than SR 5,000	374 (93.5)	317 (69.8)	75.659	0.000
	SR 5,000 or more	26 (6.5)	137 (30.2)		
Having health insurance					
	Yes	20 (5.0)	48 (10.6)	8.267	0.004
	No	380 (95.0)	406 (89.4)		

* Statistical significant difference in the percentage between 'elderly' and 'younger' patients.

Profile of Respondents according to their Need Characteristics

Table (3) presents the characteristics of elderly and younger respondents according to their need characteristics. Elderly patients were more likely to report "having chronic conditions" ($\chi^2 = 113.692$, $p < 0.001$), "having functional limitations" ($\chi^2 = 26.603$, $p < 0.001$) and "having severe illnesses" ($\chi^2 = 40.833$, $p < 0.001$) than younger patients. Similarly, elderly patients were more likely to perceive their health status as "poor" ($\chi^2 = 9.961$, $p < 0.01$) and more likely to report that they "need help with personal care" ($\chi^2 = 163.987$, $p < 0.001$) than younger patients.

Table 3. Need characteristics of elderly and younger patients attending health care facilities.

Characteristics		Elderly (N = 400)	Younger (N = 454)	χ^2	P- value*
		n (%)	n (%)		
Presence of chronic condition					
	Yes	264 (66.0)	133 (29.3)	113.69 2	0.000
	No	136 (34.0)	321 (70.7)		
Presence of functional limitation					
	Yes	64 (16.0)	23 (5.1)	26.603	0.000
	No	336 (84.0)	431 (94.9)		
Presence of severe illness					
	Yes	186 (46.5)	115 (25.3)	40.833	0.000
	No	214 (53.5)	339 (74.7)		
Perceived health status					
	Poor	141 (35.3)	114 (25.1)	9.961	0.002
	Good	259 (64.8)	340 (74.9)		
Perceived psychological status					
	Poor	73 (18.3)	62 (13.7)	3.035	0.081
	Good	327 (81.8)	392 (86.3)		
Needs help with personal care					
	Yes	198 (49.5)	44 (9.7)	163.98 7	0.000
	No	202 (50.5)	410 (90.3)		
* Statistical significant difference between ‘elderly’ and ‘younger’ groups.					

General Utilization of Health Resources by Respondents

Table (4) shows that 539 (63%) of respondents in the study sample have used some sort of health services in the past 12 months. Of these, a significantly higher percentage of elderly patients (77.3%) used health services than younger patients (50.4%) ($\chi^2 = 64.421$, $p < 0.001$).

Table 4. Difference between elderly and younger patients in the general utilization of health services during the past 12 months.

Used health services? (in the past 12 months)	Total	Elderly (N = 400)	Younger (N = 454)	χ^2	P-value
		n (%)	n (%)		
Yes	538 63%	309 (77.3)	229 (50.4)	64.421	0.000
No	316 37%	91 (22.8)	225 (49.6)		

Table (5) shows the difference in the mean visits made by elderly and younger patients to the various health care facilities. Elderly patients made a significantly higher mean visits to health care facilities (2.40) than younger patients (0.94) (t -test = 11.330, $p < 0.001$).

Table 5. Differences in the general mean visits to health care facilities between elderly and younger patients*.

Patients	Mean visits	S.D.	t -test	P-value
Elderly (N = 400)	2.40	2.171	11.330	0.000
Younger (N = 454)	0.94	1.486		

* General visits include visits to primary health care (PHC) centers, out-patient-departments (OPD), emergency departments (ED), private pharmacies (for over-the-counter medications) and the number of admissions.

Types of Health Facilities Used by Respondents

Table (6) presents the types of health facilities used in the previous 12 months by the elderly and younger respondents. Moreover, it shows the mean visits to these facilities. The table indicates that a significantly higher mean visits (0.59) were made by elderly patients than younger patients (0.26) to primary health care (PHC) centers (0.94) (t -test = 4.165, $p < 0.001$). Similarly, elderly patients made a significantly higher mean visits (1.58) than younger patients (0.51) to emergency departments (ED) (0.94) (t -test=12.465, $p < 0.001$). Elderly and younger respondents were similar in their mean visits to outpatient departments (OPD) and the difference was not statistically significant (0.94) (t -test=-0.685, $p = 0.493$). Self-referral to private pharmacies was reported by respondents and younger patients made a significantly higher mean visits (1.76) to these pharmacies than elderly patients (0.92) (0.94) (t -test= -9.441, $p < 0.001$). With regards to admission to inpatient services, elderly

patients had a significantly higher mean score of admissions (0.08) than younger patients (0.02) (0.94) (t -test=4.490, $p < 0.001$).

Table 6. Differences in the mean visits to health care facilities between elderly and younger patients.

Types of Health Facilities Used		Mean Visits	S.D.	<i>t</i> -test	<i>P</i> -value*
Primary health care (PHC) center					
	Elderly	0.59	1.443	4.165	0.000
	Younger	0.26	0.671		
Out-patient Department (OPD) (or specialist)					
	Elderly	0.11	0.545	-0.685	0.493
	Younger	0.13	0.506		
Emergency department (ED)					
	Elderly	1.58	1.528	12.465	0.000
	Younger	0.51	0.832		
Private pharmacy (over-the-counter medicine)					
	Elderly	0.92	1.101	-9.441	0.000
	Younger	1.76	1.502		
In-patient services (at least one night)					
	Elderly	0.08	0.275	4.490	0.000
	Younger	0.02	0.123		

* Statistical significant difference in mean visits between 'elderly' and 'younger' patients, **S.D.** = Standard Deviation.

Discussion

This is a descriptive study and was conducted to profile elderly and younger patients who use health services and facilities and to identify the types of health facilities that were used by these patients. Health authorities in Saudi Arabia could benefit from the results reported here by enhancing the elderly people's health needs and priorities. However, the fact that this study was only conducted in a single city makes its results unrepresentative of the whole elderly people in the Kingdom of Saudi Arabia.

The findings of this study indicate that about three-quarters of elderly persons and more than half of younger people have used some sort health services in the past twelve months. However, this study did not examine whether the visits made by these patients are considered appropriate or not. These findings suggest that elderly patients are responsible for a considerable volume of the utilization of health care

facilities. It might be that difficulties related to the organization of the Saudi health care system such as shortage of bed supplies (Al-Shammari, 1996), long waiting lists (Al-Omar, 1998), lack of nursing homes (Mufti, 1998) and the provision of health services by many health organizations in the Kingdom have contributed to this high volume of health services utilization.

However, the Ministry of Health annual reports show that the utilization of health care facilities outstrips the increase in the number of these facilities. For example, between 2000 and 2007, the number of visits to health care facilities increased approximately by 18% (from 94.6 to 111.6 million visits), whereas the number of health care facilities is far behind such increase in demand for health services.

The results emerged from this study indicate that the elderly patients made a higher mean visits to all formal health care facilities employed in this study, including primary health care centers, outpatient and specialist clinics, emergency departments and inpatient services than younger patients. Thus, the results reported here suggest that elderly patients are responsible for much of the workload performed in these facilities. These findings are in line with other studies conducted in Saudi Arabia (Al-Shammari, 1996; Mufti, 1999) as well as studies conducted in other countries (for example, Tannenbaum *et al.*, 2005; Victor, 2000; Beregi, 2005).

Comparing the findings reported here with findings reported from different health care systems is difficult and may lead to discrepant conclusions. Many countries have distinctly different health care systems. For example, some are based on a 'Gatekeeping' primary care and others are on an easy access to specialists as long as the patient can pay (Fry *et al.*, 1995). However, the results showed that elderly patients make an increase use of the health resources which should prompt policy makers to propose health plans to cope with such an increase.

In the literature, there is a general assumption that the elderly population constitutes a unique subset of health services users. 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) and to attend a health facility with multiple acute illnesses (Meyer and Bridges, 1998). To those who recognize the rapid

ageing of the Saudi society, the heavy utilization of health services by the elderly patients seems likely to increase.

The fact that elderly people were found to be higher users of health services than younger people implies that as people grow older, the likelihood they will use health services. This is consistent with previous research (Howe *et al.*, 2002; Kersnik *et al.*, 2001; Neal *et al.*, 2001; Scaife *et al.*, 2000) which indicated that older patients are more likely to use health services than younger ones. However, the finding reported in this study contradicts the results reported from the United States (McFarland *et al.*, 1985) which found that socio-demographic characteristics, including age of respondents, were not associated with health services utilization. Other studies found that age did not affect health services utilization (Feignson *et al.*, 1997; Berki *et al.*, 1984).

The present study showed that elderly respondents had lower level of education and had less knowledge about where to get relevant health services than younger respondents. Previous research indicates that patients of low education have poorer health and accordingly they use health services more until their health problems are resolved. While this finding is consistent with some studies (Berki and Kobashigawa, 1978; Fernandez-Olano *et al.*, 2006), it contradicts others (Ullman *et al.*, 1975) which found that education has no effect on the use of health services. Previous studies indicated that those who had knowledge about alternative health services may use them when other services are unavailable or inaccessible (Bentley, 2003; Snider, 1980; Mekonnen and Mekonnen, 2003). This suggests that enhancing the knowledge of elderly patients about the availability and the accessibility of health services may have an impact on the appropriateness of use of health services and facilities.

It was expected that elderly people who reported "visiting a doctor regularly" would decrease the use of health services, but the data in the present study did not support this expectation. In fact, despite elderly respondents had a higher percentage of continuity with health care, they made a significantly higher mean visits to health care facilities than younger respondents. This finding contradicts previous research (Gill, 2000; Christakis *et al.*, 1999) which indicated that having continuity with a health care provider is significantly associated with decreased health services utilization. However, it has been reported that some elderly persons contact their physicians for routine check-ups when there are no

symptoms and they use medical services in excess for a list of common diseases that are “not serious” (Hibbad and Pope, 1986).

The present study revealed that elderly patients were more likely to have chronic conditions, functional limitations, severe illnesses, ‘poor’ health status and “needing help with personal care” than younger patients. These findings are in agreement with several studies which suggest that elderly persons have higher morbidity of chronic illness (Gill and Sharpe, 1999; Schrire, 1986), suffer from physical illness (Karlsson *et al.*, 1994), psychological conditions (Courtenay *et al.*, 1974) and they are more likely to report having poor health status (Boushy and Dubinsky, 1998; Brown and Goel, 1994). 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’ judgments. It might be that some patients overestimate their health condition in order to justify their attendance at health facilities.

In this study, a number of predisposing, enabling and need characteristics seemed to be the major factors influencing the utilization of health services by the population, which needs further investigation. This supports the position that planning future health services should take into consideration these characteristics and the profile of the population. These findings are well known to those who have been working in the field of gerontology and long-term care, but as indicated by some authors (Evashwick *et al.*, 1984), might not be understood by many of health administrators and planners who are only recently or peripherally involved in the services for the population.

An important finding of this study was that elderly patients were not only high users of a single type of health care facility, but they use multiple health care settings such as PHC centers, outpatient (or specialist) clinics and emergency departments as well as over-the-counter medications. This finding may be attributed to some of the problems of the Saudi health care system which have been reported earlier, such as lack of effective referral system (Al-Erian *et al.*, 1994; Khat tab *et al.*, 1999; Al-Mazrou, 1991; Mahfouz *et al.*, 1993), unavailability of efficient appointment system (Al-Omar, 1998; Saeed, 1994) and lack of necessary equipment and resources (Saeed and Al-Swailem, 1992; El-Shabrawy and Eisa, 1993; Al-Doghaither and Saeed, 2000; Al-Qatari and Haran, 1999). These obstacles might have forced elderly patients, as well as

probably younger patients, to seek health care from other facilities. This finding is in agreement with the findings of other authors from Slovenia (Kersnik *et al.*, 2001) and Canada (Browne *et al.*, 1982) who reported that elderly patients tend to be heavy users of several health care facilities.

Limitations of the Study

The study does, however, have its limitations in many aspects. First, the study design and the available data may have influenced the results. This study has only described the profile of respondents rather than examining factors associated with the utilization of health resources. Further research may examine the association between the utilization of health services and the respondents' variables. Furthermore, the influence of knowledge, attitudes, accessibility, availability and organizational variables on the utilization of health facilities should be investigated.

Second, due to limited financial and time resources, the study took place in Riyadh city only; and accordingly the results may have limited generalizability to other places in the Kingdom. Conducting studies at larger scales in different cities or regions in the Kingdom will give more reliable results.

Third, the results reported here were based on data reported by patients themselves and are subject to the usual problems of bias and recall in reporting health care events. Future research may collect additional data from other sources such as the patients' medical records and the health staff dealing with the treatment of patients.

Finally, in this study, the appropriateness of the visits made by the elderly and younger patients to the various health care facilities was not examined. Thus, further research is needed to determine whether visits made to health facilities such as outpatient clinics and emergency departments were appropriate or not. This could be a very important subject for future research.

Despite these limitations, it is believed that the results reported here provide a valuable insight into the characteristics of elderly and younger patients and the types of health care facilities used by these groups of people in Saudi Arabia.

However, future research is needed to explore this topic in depth with an attempt to address some of the concerns indicated in the limitations of this study.

Conclusion and Recommendations

This study indicates that elderly people tend to make an intensive use of health services and facilities. In order to achieve a balance between the demand for health care services by the elderly people and the resources available in the community, efficiency in planning health services is needed. This should prompt policy makers in the Kingdom to propose health plans to cope with the increase in the demand for health services by the elderly population.

The findings of this study support findings reported in the medical literature and indicate that elderly patients have unique characteristics which may influence the utilization of health services. If appropriate strategies for providing elderly people with relevant health care are to be developed, it is first necessary to develop a comprehensive profile of this group of patients and their health needs. This requires additional information on many aspects other than those reported in this study. This should precede any intervention plans which attempt to provide this vulnerable group of people with relevant and quality of health care.

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التعرف على خصائص المرضى المسنين وغير المسنين الذين يراجعون المرافق الصحية: مقترحات لتخطيط الرعاية الصحية

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المستخلص. يهدف هذا البحث إلى التعرف على خصائص المرضى المسنين وغير المسنين الذين يراجعون المرافق الصحية، وكذلك التعرف على أنواع المرفق الصحية التي تقصدها هذه الفئات من المرضى في المملكة العربية السعودية.

وقد تم جمع البيانات من كبار السن (من هم في عمر ٦٥ سنة أو أكبر) ومن غير كبار السن (من ١٨-٦٤ سنة) عن طريق الاستبانة وذلك خلال زيارتهم لبعض مراكز الرعاية الصحية الأولية بمدينة الرياض خلال شهر يوليو، ٢٠٠٨م. تم توزيع ١٠٠٠ إستبانة على المراجعين وقد تم جمع بيانات كاملة بنجاح من ٨٥٤ شخص (٨٥,٤٪). وتشتمل هذه البيانات على بعض الخصائص الديموجرافية، وبيانات متعلقة بمحفزات البحث عن الرعاية الصحية وكذلك بيانات عن بعض الاحتياجات الصحية للمرضى. تم تحليل البيانات باستخدام كل من اختبار Chi-square و T-test وتم عرض النتائج بطريقة وصفية.

أوضحت النتائج أن هناك (٧٧,٦٪) من كبار السن و(٤٨,٩٪) من غير كبار السن المشمولين بالدراسة قد استخدموا الخدمات الصحية خلال السنة الماضية. بينت الدراسة أن كبار السن هم الأكثر من حيث متوسط عدد الزيارات لكل من مراكز الرعاية الصحية الأولية وأقسام الإسعاف والطوارئ وأنهم الأكثر استخداماً لخدمات التنويم مقارنة بالمرضى غير المسنين. وعلى

العكس من ذلك، أوضحت الدراسة أن غير المسنين هم الأكثر استخداماً للمعالجة الذاتية عن طريق الصيدليات الخاصة. كما قامت الدراسة ببيان بعض الخصائص المتعلقة بمستخدمي المرافق الصحية لكل من المسنين وغير المسنين.

ويشكل كبار السن مجموعة متميزة من السكان لها احتياجات ذات طبيعة خاصة، ولذلك فإنه يجدر بالقائمين على تخطيط السياسات الصحية في المملكة العربية السعودية الأخذ في الاعتبار خصائص هذه الفئة من السكان واقتراح الخطط الكفيلة بتقديم الخدمات الصحية المناسبة لهم.