

# Elderly Patients' Awareness and Opinion about the Need of Home Health Care and Associated Clinical and Demographic Factors

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**Abstract: Background and Objectives:** Home health care (HHC) is a wide range of health care services that can be given in home. HHC is usually less expensive, more convenient than hospital care and just as effective. The objective of this work is to analyze the awareness, willingness and clinical factors related with the implementations HHC for elderly patients at King Saud University Medical City (KSUMC).

**Methods:** The study was conducted at KSUMC during the period of October 2014 till December 2014. The target population was elderly patients of KSUMC, both male and female, who are over 60 and attending outpatient clinics or admitted in inpatient departments. By a convenient sampling technique, 420 participants were selected. The data was collected by pre-designed interviewing questionnaire which consisted of three sections. After ethical approval and informed consent, their responses about the need for home health care services were analyzed.

**Results:** Awareness of HHC was calculated in this study and showed that only 156 patients out of 420 patients (37.1%) heard about these services. The study showed that patients above 60 years old in KSUMC (93.1%) need at least one of the HHC services. The most frequently needed services were follow up of chronic diseases, by more than half of patients (52.6%) followed by the need of health education by 50.7% then dietary education and guidance by more than one third of the patients (38.1%). The commonest health problems among elderly patients in the present study were diabetes mellitus (DM) ; 43.3% followed by stroke and heart diseases; 32.1% then respiratory conditions in 16.4%.

**Conclusions:** The results of the study show poor knowledge of elderly patients about HHC services. They also show that the majority of the patients are in need of HHC services, and in case of need of the services; the majority seek care from outpatient clinics or emergency department in KSUMC which could over-burden these services in KSUMC.

**Keywords:** Home health care (HHC), Elderly Patients' Awareness and Opinion, King Saud University Medical City (KSUMC).

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## 1. INTRODUCTION

Home Health Care (HHC) is a wide range of health care services that can be given at home. HHC is usually less expensive, more convenient than and just as effective as care patients get in a hospital. <sup>(1)</sup> It covers variety of patients who cannot access the hospital service in an easy way or have some physical, social, psychological, or technical constraints. <sup>(2)</sup>

For terminally ill patients, home care may include hospice care. For patients recovering from surgery or illness, home care may include rehabilitative assistance. <sup>(2)</sup>

HHC helps seniors live independently for as long as possible, given the limits of their medical condition. It covers a wide range of services and can often delay the need for long-term nursing home care. <sup>(3)</sup>

Worldwide, the availability of home support services has grown considerably, as a result of longer life spans and advances in technology. <sup>(4)</sup>

It is estimated that there will soon be more people over the age of 65 than there will be of school age. The fastest-growing segment of the population is the 85-plus group, many of whom have at least one chronic condition (arthritis, heart disease, cancer, or DM). Some of them rely on family and friends to help with tasks that have become cumbersome or impossible. Many others turn to a HHC agency for assistance. <sup>(5)</sup>

Receiving home health care helps to reduce unavoidable readmissions to the hospital, and studies have shown that patients recuperating from illness, injury, or surgical procedures heal more quickly and more successfully when recovering at home versus in a medical facility. <sup>(6)</sup>

Home medical equipment allows seniors, persons with disabilities or chronic health issues, and individuals recovering from an accident, surgery or illness to stay in their homes, often at a much more affordable cost than an a brief stay in a hospital or a longer stay in a nursing home or assisted living facility. For example, the daily cost of home oxygen for Medicare patients is 1/30th of the cost of a day in a nursing home, and – or 1/268th of the cost of a single day's hospital stay. <sup>(7)</sup>

Homecare can play a tremendous role in reducing care spending by treating more people in a cost-effective manner at a fraction of the cost of other institutional settings – all in the patient-preferred setting of the home. Numerous studies attest to the value and clinical effectiveness of home-based care. <sup>(7)</sup>

## 2. HHC PROVIDERS

Reputable HHC companies employ registered and licensed professionals. Often, these professionals can monitor routine behaviors and quickly notice if an at-home patient needs further assistance, when families often miss these warning signs. Many home health providers have disease management programs to help patients rehabilitate or manage their chronic illnesses, thereby enabling the elderly to live independently at home and limit or avoid stays in costly institutions. <sup>(8)</sup>

### Mobile Medical Technology:

Medical technology is being made more portable all the time. With the growing emphasis toward outpatient, ambulatory treatment in order to contain costs, many diagnostic tests are now available for in HHC. This makes in home care much more cost effective for hospitals and doctors. Patients are much happier as they can recuperate in familiar surroundings and still get the necessary tests to insure they are improving as they should. <sup>(9)</sup>

### Patient Benefits:

HHC provides patient flexibility and is beneficial to those who, for whatever reason, are experiencing limited mobility. Patients, especially the elderly, are able to keep some of their independence while still having assistance for tasks that may be difficult due to surgery, illness or aging. In addition, research shows that patients who recuperate at home after surgery have a lower risk of infection and heal faster than those who remain in the hospital. There is less stress on the patient's family as they know that their loved one is getting quality care. In addition, family members can share quality time with the patient at home rather than having to visit in a cramped hospital room. <sup>(8)</sup>

The aim of this study is to assess the need of HHC among outpatients in the King Khalid University Hospital. The efforts are made to understand demographic and clinical factors associated with patients' opinion on the need of HHC. Further, a brief discussion is also made on the advantages of HHC along with recommendations for successful implementation of HHC.

## 3. METHODOLOGY

### ❖ Study Design:

A descriptive cross-sectional study ~~was carried out.~~

### ❖ Study Setting:

This study was done in KSUMC in outpatients clinics; primary care clinics for elderly patients, chronic diseases clinics, diabetes clinics, endocrine diseases clinics and inpatient departments having elderly patients. The study was done from October 2014 till December 2014

❖ **Target Population:**

The targeted population was elderly patients attending outpatients or admitted in KSUMC.

❖ **The Inclusion Criteria:**

The study included elderly patients whose ages were above 60 years, both genders; males and females, Arabic speaking, Saudi & non-Saudi, conscious, cooperative and willing to participate.

❖ **The Exclusion Criteria:**

Patients or caregivers who cannot understand Arabic language and those who were unable to answer the questions because of altered mental state or for being comatose or being critical patients.

❖ **Sample Size:**

We have done a pilot study to measure the level of awareness and we found that the level was 45% of participants. Then with 95% confidence level and 5% precision, the expected sample size was about 380 participants. We increased the sample size to 420 participants.

❖ **Sampling Technique:**

Data was collected randomly by convenient sampling technique from elderly patients (or their caregivers) attending morning or afternoon outpatients clinics or admitted to different departments caring for the elderly in KSUMC during the study period.

❖ **Data Collection Tools and Methods:**

Data was collected by using a pre-designed interviewing questionnaire. The questionnaire contains open and closed-ended questions. The questionnaire has Arabic and English versions (Appendix).

The questionnaire has three main sections. The first section consists of questions regarding the patients' socio-demographic data including age, gender, nationality, education level, residence, main health problem and duration of disease.

The second section consists of questions about awareness about HHC services, providers of these services and opinion about the importance of HHC services. The third section is a list of HHC services that might be needed by elderly patients at KSUMC and actions taken in case of need.

❖ **Pilot Study:**

After designing the study tools we piloted it with 20 participants of which 10 participants were females and 10 participants were males, all were patients above 60 years of age.

The team attended KSUMC primary care clinics to test logistics of data collection and to estimate the time required for data collection. The pilot study helped in validating our questionnaire and ensuring clarity and un-ambiguity. It also helped verifying required sample size. And we found that 55% of the participants were unaware of HHC, and 95% were in need for HHC.

❖ **Data Analysis Plan:**

After collecting the data; it has been coded and entered into computer data sheet. Data cleaning and statistical analysis has been performed by using SPSS (Statistical Package for Social Sciences) software version 18. Data was presented as frequency, percentage, mean and standard deviation. Odds ratio, chi square test, 95% confidence interval were used for comparison between groups.

❖ **Ethical Consideration:**

The study participants have been informed about the purpose of the study then they were requested to complete the questionnaire. Written consent was obtained from those who accepted to participate. They were informed that their

participation is voluntary and they have right to withdraw at any time without affecting their medical care. The surveys were anonymous and participants' anonymity had been assured by assigning each questionnaire with a code number for the purposes of analysis only. Confidentiality of participants' information had been assured. No incentives or rewards were given to the participants. (Attached is the consent form)

#### 4. RESULTS

A sample of 420 patients whose ages were above 60 years was interviewed in outpatients and inpatient departments at KSUMC during the period from October 2014 till December 2014. Their ages ranged from 60 to 88 years, with a mean value of 66.90 years and a standard deviation of 6.22 years.

**Table 1** shows that a high percentage (42.4%) of participants were in the age group of 60 to less than 65 years, 28.3% of the participants were in the age group of 65 to less than 70, 16% were in the age group of 70 to less than 75, and the rest (13.4%) were in the age group of 75 and older.

**Table 1** also shows that male participants were about two thirds of total participants (61.9%) and 38.1% was the percentage of female participants. It is also shown that the majority of the participants were Saudis (92.6%) and also the majority was residents of Riyadh (85.7%).

The study also involved the education level of the participants. **Table 1** illustrates the different levels of education, where illiterates constituted 21.9% of the participants, elementary school with a percentage of 25.7%, middle school with a percentage of 12.6%, high school with a percentage of 18.6%, and university and higher education constituted 21.2% of the participants.

**Table 2** shows that only 37.1% of the patients heard about HHC while about two thirds (62.9%) did not know about HHC services. Among patients who were aware about HHC, 60.9% were aware about governmental providers of the services, and 25.6% of those aware about the services of HHC mentioned private providers for the services, while 13.5% did not know where HHC is provided. The most mentioned governmental hospitals by patients as HHC services providers were King Saud Medical Complex (43.1%) then King Abdul-Aziz Medical City (16.7%) and King Faisal Specialized Hospital (16.7%). Among private hospitals most frequently mentioned by patients as HHC services providers were Al Habeeb Hospital (29.2%), Wahat Arriyadh (7%), and only (1.39%) for Al Hekma.

Level of awareness about HHC was affected by age and it was significant (P value= 0.028 and chi square value= 9.082), the highest was among 70-74 years old (49.2%) and the lowest was 25% in the age group of 75+ (**Table 3**)

In **table 3** Sex was not a significant factor in the level of awareness (OR=1.019, 95%CI 0.678-1.532) also **figure 2** shows the percentages of each group. 37.3% were aware in the male group and 36.8% in the female group.

Finally, education has a significance in the level of awareness (OR=0.447 and 95%CI 0.297-0.672). Those with middle school education and above had higher level of awareness (45.9%) where illiterates and those with elementary education had 27.5%. (**Table 3**)

Most of patients above 60 years old in KSUMC needed HHC in this study (93.1%) for at least one of the services, while the rest stated that they do not need any of the services. (**Table 4**)

**Table 5** illustrates the services needed by elderly people at KSUMC. According to table 3, the most frequently needed services were follow up of chronic diseases by more than half of patients (52.6%) followed by the need of health education by 50.7% then dietary education and guidance by more than one third of the patients (38.1%).

In **table 6** out of the studied group, the commonest medical illness was diabetes mellitus with a percentage of 43.3% of the participants, followed by stroke and heart diseases with a percentage of 32.1%, then respiratory conditions in 16.4% of participants. The least common medical illness was liver diseases with only 2.1% of them.

About half of elderly patients (43.8%) seek medical services through KSUMC out-patient clinics and 18.6% through KSUMC emergency department, while 18.8% of the patients seek through other governmental hospitals. Other sources such as: private clinics and pharmacies stand for the remaining percentage as shown in **table 7**.

#### Tables and Figures:

**Table 1: Socio-demographic characteristics of patients above 60 years in KSUMC during the period from October 2014 till December 2014**

Age Groups	Frequency	Percent
60-64	178	42.4
65-69	119	28.3
70-74	67	16.0
75+	56	13.4
Sex		
Male	260	61.9
Female	160	38.1
Nationality		
Saudi	389	92.6
Non-Saudi	31	7.4
Residence		
Riyadh	360	85.7
Outside Riyadh	60	14.3
Education		
Illiterate	92	21.9
Elementary school	108	25.7
Middle school	53	12.6
High school	78	18.6
University and higher	89	21.2

Table 2: Awareness about HHC of patients above 60 years at KSUMC during the period from October 2014 till December 2014

Awareness	Frequency	Percent
Yes	156	37.1
No	264	62.8
If Yes:		
Provider of HHC	Frequency	Percent
Governmental Hospitals*	95	60.9
Private Hospitals**	40	25.6
Don't know	21	13.5
Total	156	100.0

\* King Saud Medical Complex (43.1%), King Abdul-Aziz Medical City (16.7%), King Faisal Specialized Hospital (16.7%)

\*\*Al Habeeb Hospital (29.2%), Wahat Arriyadh (7%), AlHekma (1.39%)

Table 3: Socio-demographic factors and level of awareness about HHC of patients above 60 years at KSUMC during the period from October 2014 till December 2014

	Aware		Not Aware		Odd Ratio	95% Confidence Interval
Age (years)						
60-64	70	39.3%	180	60.6%	Chi square value= 9.082	P value = 0.028
65-69	39	32.7%	80	67.2%		
70-74	33	49.2%	34	50.7%		
75+	14	25%	42	75%		
Sex						
Male	97	37.3%	163	62.6%	OR=1.019	95% CI (0.678-1.532)
Female	59	36.8%	101	63.1%		
Education						
Illiterate and Elementary	55	27.5%	145	72.5%	OR=0.447	95% CI (0.297-0.672)
Middle and Above	101	45.9%	119	54%		

Table 4: The need for HHC by patients above 60 years at KSUMC during the period from October 2014 till December 2014

The Need of HHC	Frequency	Percent
Not in need	29	6.9%
In need	391	93.1%

Table 5: Services needed by patients above 60 years at KSUMC during the period from October 2014 till December 2014

Services Needed	Frequency	Percentage
Follow up of Chronic Diseases	221	52.6%
Health education services	213	50.7%
Diet guidance	160	38.1%
Psychosocial Support	134	31.9%
Physiotherapy	128	30.5%
Oxygen Treatment	115	27.4%
Dressing postoperative & injuries	104	24.8%
Ambulance services	78	18.6%
Diabetic Foot dressing	67	16.0%
IV Line	56	13.3%
Cancer Palliative Care	47	11.2%
Chest Tube	25	6.0%
Urinary Catheter	20	4.8%
Gastric Tube	18	4.3%
Bed Sores dressing	15	3.6%

Table 6: Main health problems of patients above 60 years at KSUMC during the period from October 2014 till December 2014

Health Problem	Male	Percent	Female	Percent	Total Frequency	Total Percent
Diabetes	129	49.6%	53	33.1%	182	43.3%
Stroke & Heart Diseases	86	33.1%	49	30.6%	135	32.1%
Respiratory	36	13.8%	33	20.6%	69	16.4%
Emergency	31	11.9%	18	11.3%	49	11.7%
Cancer	27	10.4%	21	13.1%	48	11.4%
Endocrine	18	6.9%	21	13.1%	39	9.3%
Renal	27	10.4%	3	1.9%	30	7.1%
Geriatrics	1	0.4%	18	11.3%	19	4.5%
Others	12	4.6%	4	2.5%	16	3.8%
Liver	4	1.5%	5	3.1%	9	2.1%

Table 7: Places to seek medical services in case of need by patients above 60 years at KSUMC during the period from October 2014 till December 2014

Source of HHC	Frequency	Percent
KSUMC Outpatient Clinics	184	43.8%
Other Government	79	18.8%
KSUMC_ER	78	18.6%

Nothing	35	8.3%
Others	44	10.5%

## 5. DISCUSSION

HHC is important to each individual in the society. It saves the health field economically, and it also saves patients' lives. There is increasing evidence that people recovering from illness or surgery heal faster and get well more quickly if they are able to recuperate at home. In addition, older people usually live longer and have more productive lives in their golden years if they are able to remain at home (8) as it is shown in Bin Sadeq's et al<sup>(16)</sup> study at King Khalid National Guard Hospital, Jeddah 2000. In a cross sectional study done by BinSaeed et al<sup>(17)</sup> in Riyadh Military Hospital 2005 with a sample of 240 patients, they found the median level of total satisfaction towards HHC was 90% which shows the effectiveness of HHC. The present study aimed to determine the proportion of KSUMC patients over the age of 60 who need HHC, and to determine the types of HHC services needed by these patients and not provided to them by the hospital.

In the present study 93.1% of the participants were in need for HHC. In a cross sectional study done by Sundstrom et al<sup>(18)</sup> in Iceland 2008 with a sample of 700 persons, they found that 58% of old people living at home are in need for HHC. The higher percent of HHC need in our study can be explained as our study is hospital based unlike Iceland study that was community based by interviewing old people in home. So, all our participants were complaining of some health problem in contrast to the other study. Same reason also applies in study in four districts in Andalusia (Spain) by Morales-Asencio et al<sup>(19)</sup> with the result 57% of homes have at least one person requiring care, and in 66% of cases the family is the sole caregiver.

In this study, the commonest medical illness among elderly was DM (43.3%) followed by stroke & heart diseases (32.1%) then respiratory (16%). This study has similar results regarding the prevalence of diseases with other local studies; in a study done in southern Saudi Arabia 2011 by Jabloun et al<sup>(20)</sup> to determine the profile of morbidity among elderly registered at HHC service in the Armed Forces Hospital of Southern Region, in 880 patients older than 60 years they found the most prevalent is hypertension (59.1%) followed by DM (57.3%), stroke 34.9%). In other local study done by Al-Hazmi et al (21) in Al-Khobar and Dammam 2000, with a sample of 318 patients; the most common diagnosis in patients aged above 65 years (43.4% of all patients) was DM (53.2%), cerebrovascular accidents (53.2%), dementia (50.0%). A study in Dubai 2013<sup>(22)</sup> also showed similarity to this study results; with hypertension as the commonest (67.5%) followed by dementia (57.8%) then DM (52.4%). However, nationally in a cross sectional study done by Thumé et al in Brazil<sup>(23)</sup> 2008 with a sample of 1,593 individuals, they found that the highest medical diagnosis was hypertension (55%), then diabetes(15%) and stroke (10%). The high percentages of diabetes and heart diseases in Saudi Arabia can be explained by recent reports from WHO that ranked Saudi Arabia among top ten countries worldwide with high prevalence of diabetes<sup>(24-26)</sup>. The reason for increased prevalence of diabetes in KSA is due to significant changes that have occurred in the past three decades, involving poor nutrition, decreased physical activity, increased obesity and smoking.<sup>(27)</sup> According to data from the 2007 National Home and Hospice Care Survey, conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics, in the United States<sup>(28)</sup>, among HHC patients who were 65 years and over, cancer was more prevalent among men, and essential hypertension was more common among women. And according to a research that was conducted during the year 2010 among the residents of Kvarnerian Islands in Croatia<sup>(29)</sup>, common leading diagnosis among HHC patients include diseases of circulatory system (28.9% of patients), nutritional and metabolic disease (14.5%), malignant diseases (13.2%). In a study done in Andalusia<sup>(19)</sup> cardiovascular diseases are the highest among elderly (81%). This goes with global health reports that cardiovascular diseases are the leading cause of death among developed countries.

In the present study more than half of the sample (52.6%) needed care of chronic diseases, also more than half of the patients (50.7%) expressed the need of health education and more than third of the patients (38.1%) needed dietary education and care. In Bin Sadeq's et al<sup>(16)</sup> study; the results illustrated sixty-three (62.8%) of HHC patients needed continuous care (chronic care), 23 (15.5%) were for palliative care, 18 (12.2%) needed transient care i.e. health education and flow up. Because the incidence and prevalence of diabetes as a major chronic disease in KSA have been increased. So, increase incidence & prevalence of any disease will lead to increase in need for its care and its education due to increasing its prevalence in the past few years. This is in agreement with data from United States in 1996, a history files study was done by Welch et al<sup>(30)</sup> in Medicare's HHC program where the majority of the diagnoses reported in HHC claims were chronic conditions such as diabetes and cardiovascular disease. However, Shaughnessy et al<sup>(31)</sup> in Center for

Health Services Research, University of Colorado Health Sciences Center, Denver in 1990, study results show that the main services needed were (Care for Dyspnea at rest 14%; care for skin ulcer 11.9%; oxygen 10.5%; urinary catheter 9.7%).

As KSUMC does not offer the service of HHC to their patients, about half of elderly patients who are in need of HHC in the present study, (43.8%) seek medical services through KSUMC out-patients and 18.6% through KSUMC Emergency Rooms which overburden these services in KSUMC. In fact HHC could be a realistic and cost-effective solution to overcrowded state in emergency rooms and long waiting lists in outpatients and hospital admissions. Similar studies support this conclusion where HHC approach was evaluated by Zimmer et al.<sup>(32)</sup> in a randomized experimental design study measuring its impact on health care utilization, and patient and caretaker satisfaction. The findings showed that HHC patients had fewer hospitalizations, nursing home admissions, and outpatient visits than the controls. In addition, their caregiver expressed significantly higher satisfaction with the care and the overall cost was lower than their controls.

## 6. CONCLUSION

The results of the study show poor knowledge of elderly patients about HHC services, and the majority of the patients are in need of HHC services. There is an overburden of the services due to the high percentage of KSUMC patients in need for HHC services. Therefore, establishing a HHC services department is recommended for providing patients with the services they need.

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