

ORIGINAL ARTICLE

Analyzes of health profiles of patients receiving home health care services over last five years in Diyarbakir, Turkey

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Received: August 9, 2016

Accepted: September 23, 2016

Online Published: October 11, 2016

DOI: 10.5430/jha.v5n6p69

URL: <http://dx.doi.org/10.5430/jha.v5n6p69>

ABSTRACT

Objective: To determine the health profiles of patients who have been delivered home health care services by public hospitals in over the last five years.

Methods: Data which were recorded by the Ministry of Health and the Diyarbakır Directorate of Health Services had been provided from 1,826 patients from three city center and five district hospitals located in Diyarbakir, Turkey.

Results: Of 1,826 patients, 989 (54%) were female and 837 (46%) were male. The patients were divided into three age groups: 0-18 years 467 (25%), 19-64 years 511 (28%) and +65 years 848 (47%). There were more female patients in +65 age group and male in 0-18 age group ($\chi^2 = 89.923, p < .001$). In 2015, there was an increase in the number of people who received services in all age groups ($\chi^2 = 164.344, p < .001$). It was found that neurodegenerative diseases were more widespread in +65 age group ($\chi^2 = 44.823, p < .001$). Neurogenetic diseases were more seen in the 0-18 age group ($\chi^2 = 97.800, p < .001$). In the +65 age group, musculoskeletal ($\chi^2 = 16.037, p < .001$) and respiratory diseases ($\chi^2 = 6.054, p < .05$) were detected to be more widespread. There were no significant sex-based differences between the years involved ($\chi^2 = 2.246, p > .05$). Neurodegenerative diseases ($\chi^2 = 4.07, p < .05$), neurogenetic diseases ($\chi^2 = 6.043, p < .05$) and respiratory diseases ($\chi^2 = 5.254, p < .05$) were determined to be more widespread in male patients. Musculoskeletal ($\chi^2 = 17.943, p < .001$) and cardiovascular diseases ($\chi^2 = 11.994, p < .001$) were seen more in female groups.

Conclusions: Over the last five years, there has been an increase in the utilization of home health care services. Policy legislation for health care services to be provided at home is generating successful results.

Key Words: Home health care, Age groups, Public hospitals, Chronic diseases, Turkey

1. INTRODUCTION

Home health care services include a very comprehensive list of services such as medical, social services, physical therapy, nursing care, and speech-language therapy.^[1] It also covers a wide combination of different kinds of functions such as catheter care, administering injections, conducting

psychological assessments, wound care, disease education, oxygen therapy, medication reminders, pain management, and nutritional evaluation. These services are conducted by skilled professionals such as medical practitioners, nurses, physical therapists, or home health aides who generally work for private home health care agencies, municipalities, and

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public institutions to help patients live with a greater degree of independence, assist the patient to continue to live at home, and improve the patient's health.^[2,3] Sometimes this care is proposed by physicians, but generally it is requested by family members or the patients themselves.^[1,4]

Home health care services can save cost in addition to improving the comfort of patients. Since the 1990s, home-based health care has grown regularly in developed countries and has become very important. However, in Turkey, the issue was not seriously addressed by the government until 2010. In Turkey, all health services are provided by public and private sectors. Public health services are under the auspices of the Ministry of Health and implemented by the Social Security Institution (SSI). After the transformation of health programs, private sectors also began to provide home health services. As the Ministry of Health is the main provider of primary and secondary health care, it is responsible for health services and health policies in the country, including amendments for home health care services. The most serious regulation was made by Law 2551 in March 2005 and published in the Official Newspaper.^[5] This regulation provided the first official definition regarding the deliverance of home health care services. Next came Directive 3895, "The Implementation of Health Care Services at Home" in February 2010 that detailed all kinds of home care services, responsible staff, necessary material, and tools as stated by the Ministry of Health.^[6]

After 2010, it was compulsory for public hospitals to provide home health care services leading to an expansion of utilization of home health care services by patients in need. In Diyarbakır, Turkey, between 2010 and 2013, these services were provided by the Diyarbakır Directorate of Health Services. Since 2013, the Secretary General of the Association of the Public Hospitals has been charged with providing home health care services. The Coordination Center of Home Health Care Services was founded in the greater Diyarbakır Public Health Center in order to coordinate the services. Three hospitals in the city center and five in other districts of Diyarbakır are connected to this center. Six medical practitioners, twenty-one nurses, and twenty-seven other skilled staff work at this center.

The literature highlights that some diagnoses are common among patients receiving home health care. Disabilities related to neurodegenerative disorders, neurogenetic disorders: brain injury, muskuloskeletal disorders, cardiovascular diseases, respiratory diseases and other chronic diseases such as diabetes, cancer, obstetric diseases are most studied diseases by researchers.^[7-11] In this study the referred diseases were taken into account in order to make a classification for those

diseases seen most commonly among patients who delivered home health care services.

The subject of this study is to investigate the home health care services provided by the Diyarbakır Directorate of Health Service and the Secretary General of the Association of the Public Hospitals between 2010 and 2015 in Diyarbakır, Turkey. The necessary data were obtained from the Ministry of Health and the Diyarbakır Directorate of Health Service.

2. MATERIALS AND METHODS

In the present study, home health care services provided by the Diyarbakır Directorate of Health Services and the Secretary General of the Association of Public Hospitals from 2010–2015 were reviewed. Data were obtained over a 6-month period from the Ministry of Health and the Diyarbakır Directorate of Health Services, after obtaining formal permission. Ethics committee approval was obtained from Dicle University Hospital on the request of the Ministry of Health, which lasted for an additional 3 months.

First, the data for 1,826 individuals who benefitted from home health care services between 2010–2015 in the city center and five districts of Diyarbakır were obtained. The patients were divided into three age groups (0-18, 19-64 and 65+ years) and compared by sex, most common diseases, hospitals, and years. Descriptive statistics were calculated and chi-square tests were performed, using SPSS Version 21.

A wide range of diseases was recorded by health staff; diseases were classified into six groups for the present analysis. The six diseases groups were:

- (1) Disabilities related to neurodegenerative disorders (alzheimer, dementia, Parkinson's disease, multiple sclerosis, stroke, hydrocephalus, encephalitis, epilepsy, degenerative nerve diseases, amyotrophic lateral sclerosis [ALS], Huntington's disease, paraplegia)
- (2) Disabilities related to neurogenetic disorders (ataxia, familial alzheimer, familial dementia, familial epilepsy, familial ALS, familial parkinsonian disease, fragile X syndrome, autism, down syndrome, genetic brain disorders, hereditary spastic paraplegia)
- (3) Cardiovascular diseases (hypertension, heart diseases, high cholesterol)
- (4) Musculoskeletal diseases (fractures, rheumatoid arthritis, postmenopausal and post-traumatic osteoporosis, clubfoot, hip dysplasia, orthopedic trauma, fractures, muscular dystrophy and scoliosis)
- (5) Respiratory diseases (asthma, chronic bronchitis)
- (6) Other diseases (diabetes, cancer, mental diseases, eye diseases)

3. RESULTS

Of 1,826 patients, 989 (54%) were female and 837 (46%) were male. The patients were divided into three age groups: 0-18 years 467 (25%), 19-64 years 511 (28%) and +65 years

848 (47%). The groups were compared in terms of sex, years, hospitals and most common diseases. In Table 1 the frequencies and chi-square results for these 1,826 patients by age groups, sex, years and hospitals are shown.

Table 1. Distribution of parameters by age groups

	n (%)			χ^2	p
	0-18 Years	19-64 Years	+65 Years		
Sex					
• Women	195 (41.8)	235 (46.0)	559 (65.9)	89.923 (df = 2)	.000***
• Men	272 (58.2)	276 (54.0)	289 (34.1)		
Years					
• 2010-2012	30 (6.4)	89 (17.4)	77 (9.1)	164.344 (df = 6)	.000***
• 2013	12 (2.6)	62 (12.1)	71 (8.4)		
• 2014	12 (2.6)	90 (17.6)	149 (17.6)		
• 2015	413 (88.4)	270 (52.8)	551 (65.0)		
Hospitals					
• Gazi Yaşargil Edu. and Res. Hospital	12 (2.6)	191 (37.4)	243 (28.7)	1,211.392 (df = 6)	.000***
• Diyarbakir Children Hospital	315 (67.5)	0 (0)	0 (0)		
• Selahaddin Eyyubi Public Hospital	12 (2.6)	173 (33.9)	355 (41.9)		
• Hospitals in Districts	128 (24.7)	147 (28.8)	250 (29.5)		
Prevalance of diseases					
• Neurodegenerative disorders	240 (51.4)	331 (64.8)	362 (42.7)	44.823 (df = 2)	.000***
• Neurogenetic disorders	141 (30.2)	73 (14.3)	80 (9.4)	97.800 (df = 2)	.000***
• Cardiovascular diseases	12 (2.6)	40 (7.8)	195 (23.0)	127.117 (df = 2)	.000***
• Muskuloskeletal diseases	31 (6.6)	32 (6.3)	100 (11.8)	16.037 (df = 2)	.000***
• Respiratory diseases	24 (5.1)	21 (4.1)	61 (7.2)	6.054 (df = 2)	.048*
• Others	19 (4.1)	14 (2.7)	50 (5.9)	7.651 (df = 2)	.022*
Total	467 (100)	511 (100)	848 (100)		

* $p < .05$; *** $p < .001$

As seen in Table 1, comparison of the three age groups by sex showed that there were more female patients in the age group 65 and over and male in 0-18 age group ($\chi^2 = 89.923$, $p < .001$). There was a significant difference when age groups were compared by year. In 2015, there was an increase in the use of services in all age groups ($\chi^2 = 164.344$, $p < .001$). In Diyarbakir Children Hospital, use of home health care services were more widespread between 0-18 age group and the others were more efficient for other age groups, and this was statistically significant ($\chi^2 = 1,211.392$, $p < .001$).

When the prevalence of the most common diseases were compared according to age groups, it was found that neurodegenerative diseases were more widespread in the age group 65 and over which was statistically significant ($\chi^2 = 44.823$, $p < .001$).

Table 1 shows that the prevalence of neurogenetic diseases was larger in the 0-18 age group ($\chi^2 = 97.800$, $p < .001$). In the age group 65 and over musculoskeletal diseases ($\chi^2 = 16.037$, $p < .001$) and respiratory diseases ($\chi^2 = 6.054$,

$p < .05$) were more widespread.

As can be seen from Table 1, there was an increase in prevalence of other diseases in the age group 65 and over which was significant ($\chi^2 = 7.651$, $p < .05$).

In Table 2, a statistical analysis was performed to compare years, diseases and hospitals by sex. Table 2 shows that there were no significant sex-based differences between years ($\chi^2 = 2.246$, $p > .05$). A significant difference was found when utilization of hospitals were compared by sex; male patients utilized more Diyarbakir Children Hospital, and female patients utilized others ($\chi^2 = 28.610$, $p < .001$).

A significant difference was found when the prevalence of common diseases were compared in terms of sex. Neurodegenerative diseases ($\chi^2 = 4.07$, $p < .05$), neurogenetic diseases ($\chi^2 = 6.043$, $p < .05$) and respiratory diseases ($\chi^2 = 5.254$, $p < .05$) were more widespread in male patients, which was also found significant. When the prevalence of other diseases (cancer, diabetes, eye diseases and mental disorders) was compared, no significant results were

found ($\chi^2 = 0.056, p > .05$). Musculoskeletal ($\chi^2 = 17.943, p < .001$) and cardiovascular diseases ($\chi^2 = 11.994, p < .001$) were seen more on female groups.

A statistical analysis was performed to investigate the differences between hospitals and prevalence of diseases by years. Results can be seen in Table 3.

Table 2. Sex based differences in the study parameters

	n (%)		χ^2	p
	Women	Men		
Years				
• 2010-2012	107 (10.8)	89 (10.6)	2.246 (df = 3)	.523
• 2013	82 (8.3)	63 (7.5)		
• 2014	145 (14.7)	106 (12.7)		
• 2015	655 (66.2)	579 (69.2)		
Hospitals				
• Gazi Yaşargil Edu. and Res. Hospital	250 (25.3)	196 (23.4)	28.610 (df = 3)	.000***
• Diyarbakir Children Hospital	131 (13.2)	184 (22.0)		
• Selahaddin Eyyubi Public Hospital	325 (32.9)	215 (25.7)		
• Hospitals in Districts	283 (28.6)	242 (28.9)		
Prevalance of diseases				
• Neurodegenerative disorders	484 (48.9)	449 (53.6)	4.017 (df = 1)	.045*
• Neurogenetic disorders	140 (14.2)	154 (18.4)	6.043 (df = 1)	.014*
• Cardiovascular diseases	159 (16.1)	88 (10.5)	11.994 (df = 1)	.001**
• Muskuloskeletal diseases	114 (11.5)	49 (5.9)	17.943 (df = 1)	.000***
• Respiratory diseases	46 (4.7)	60 (7.2)	5.254 (df = 1)	.022*
• Others	46 (4.7)	60 (7.2)	0.056 (df = 1)	.814
Total	989 (100)	837 (100)		

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3. Sex based differences in the study parameters

	n (%)				χ^2	p
	2010-2012	2013	2014	2015		
Hospitals						
• Gazi yaşargil Education and Research Hospital	57 (29.1)	59 (40.7)	97 (38.6)	233 (18.9)	416.502 (df = 9)	.000***
• Diyarbakir Children’s Disease Hospital	0	0	0	315 (25.5)		
• Selahaddin Eyyubi Public Hospital	95 (48.5)	68 (46.9)	136 (54.2)	241 (19.5)		
• Hospitals in Districts	44 (22.4)	18 (12.4)	18 (7.2)	445 (36.1)		
Prevalance of diseases						
• Neurodegenerative disorders	126 (64.3)	89 (61.4)	154 (61.4)	564 (45.7)	58.237 (df = 15)	.000***
• Neurogenetic disorders	29 (14.8)	16 (11.0)	24 (9.6)	225 (18.2)		
• Cardiovascular diseases	14 (7.1)	17 (11.7)	37 (14.7)	179 (14.5)		
• Muskuloskeletal diseases	11 (5.6)	15 (10.3)	17 (6.8)	120 (9.7)		
• Respiratory diseases	7 (3.6)	5 (3.4)	14 (5.6)	80 (6.5)		
• Others	9 (4.6)	3 (2.1)	5 (2.0)	66 (5.3)		
Total	196 (100)	145 (100)	251 (100)	1,234 (100)		

*** $p < .001$

Table 3 shows that, in 2014 and 2015, there was a significant increase in the use of home care health services in all of the hospitals when compared by years ($\chi^2 = 416.502, p < .001$). The comparison of the prevalence of the most common diseases according to years suggested that there was an increase in acquired brain injuries, respiratory diseases, cardiovascular diseases with respect to others

($\chi^2 = 58.237, p < .001$).

4. DISCUSSION

When we compared age groups according to sex, we found a significant difference. In younger groups home health care services were utilized more by male patients. On the other hand, the use of home health care services was more

spread among females in the older age groups. This finding was expected due to the longer life expectancy of women in Turkey. While this result was consistent with the findings of several previous studies,^[12-15] some other studies reported conflicting results.^[16-19]

We found significant difference between years in terms of use of home health care services. In all age groups, 2015 was the most efficient year, because there was an increase in the use of home health care services in all age groups in this period. Since home health care services have begun to become compulsory in all public hospitals in recent years, it continued to become even more widespread last year. Our findings were consistent with other studies that reported home health care services were improving annually.^[11,20,21] District hospitals began to provide these services only one year ago; hence services in the city center hospitals are still more efficient.

There was significant difference when diseases were compared according to age groups. Neurological diseases were more often seen in the 19-64 age group and among male patients. Our findings were consistent with several studies.^[8,14,15,22-24] Disabilities related to neurodegenerative disorders were more common in the youngest age group. When prevalence of cardiovascular diseases was compared, it was seen that, cardiovascular diseases were more widespread among older and female patient groups. While this finding was consistent with some studies,^[17,25] several other studies reported conflicting results.^[12,26] On the other hand prevalence of respiratory diseases was highest in older and male groups. This finding was incompatible with other studies that had found no significant difference between diseases by sex.^[16,20] However, the findings of the present study were compatible with those reported by other studies.^[17,25] This may result from higher rates of smoking and harder working conditions among males in Turkey.

There was a significant difference when musculoskeletal disorders were compared according to age and gender. They were more widespread in older and female patient groups, mostly due to Postmenopausal and post-traumatic osteoporosis, falls and fractures. Several previous studies found that women are likely to suffer more from musculoskeletal disorders.^[12,25-27] Our study is consistent with these studies.

5. CONCLUSIONS

Addressing chronic diseases among patients delivered home health care services is a very important issue for medical health care providers. Home health care services supplied by public or private health institutes has changed considerably over the last decade as chronic illnesses have increased in every age group due to chemicals, changes in food consumption and lack of physical activity. In our study, we saw that some specific diseases are more widespread among some age groups. There are more elderly patients among home care patients, and most of them are women. This is compatible with the studies reporting that the world is getting older and needs of elderly will be the main goal of health professionals in the future. As neurodegenerative diseases, musculoskeletal and respiratory diseases are more seen in the age group 65 and over, more specialists in these fields, especially physical therapists, will be required in the future.

Also, we found that prevalence of respiratory diseases was highest in older and male groups, and we commented that it result from higher rates of smoking and harder working conditions among males in Turkey. As this group of patients needs respiratory devices more, health staff must supply these devices readily. There are more female patients in the older groups and they may feel more uncomfortable and shy when male health staff help them; therefore more female health workers should take part in home care services.

Overall, as we classified diseases among home care patients, we believe that this classification will help to health professionals and health service suppliers in order to determine priorities.

ETHICS STATEMENT

This study was conducted according to the Helsinki Declaration. Ethics committee approval was obtained from Dicle University Hospital, Diyarbakır, Turkey. Data was provided from Ministry of Health and the Diyarbakır Directorate of Health Services, after receiving formal permission.

CONFLICTS OF INTEREST DISCLOSURE

The authors have no competing interests.

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