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Evaluation of Healthcare Use among Patients Aged 65 and over Applying to the General Surgery Outpatient Clinic

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ABSTRACT

Objectives: The aim of the study was to evaluate and determine the associated factors of appropriate healthcare use of elderly patients presenting to the general surgery outpatient clinic of a tertiary hospital.

Methods: This hospital-focused cross-sectional study was conducted on patients aged 65 years and over who applied to tertiary care services between March 2021 and September 2021. The data were collected with a questionnaire using a face-to-face interview technique. The data collection form consisted of two sections, which assess sociodemographic features and the medical status of the patients.

Results: A total of 340 patients were included in the study. The frequency of using tertiary healthcare services appropriately was 41 (12.1%). When the use of tertiary healthcare services was evaluated with logistic regression models, living area (OR=2.994 [1.375–6.521], p=0.006), duration of education (OR=3.032 [1.424–6.454], p=0.004), transport to healthcare center (OR=3.157 [1.193–8.353], p=0.021) and to know the family physician (OR=0.425 [0.203–0.892], p=0.024) were found to be significant.

Conclusion: The effective use of the referral chain in the healthcare system will enable more effective use of tertiary healthcare institutions.

Keywords: Elderly, healthcare, family practice, general surgery

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INTRODUCTION

As of 2020, the number of individuals aged 65 years and over has reached 727 million worldwide.[1] This number is estimated to double and reach approximately 1.5 billion people by 2050. In Turkey, the number of individuals aged 65 and overreached 5.7 million in 2012.[2] Parallel to this demographic change in the world, population projections made in Turkey show that this number will reach 8.6 million in 2023 and 19.5 million in 2050. Aging in the population leads to an increase in the prevalence of chronic diseases, physical inability, risk of disability, and care burden.[3,4] Furthermore, it increases the need for rehabilitation services and preventive and curative health services and creates a financial and social burden on the health services of nations.

The generally accepted method in the effective and efficient delivery of health services is to provide the service at the appropriate level.[5] The health systems of developed countries such as England, Netherlands, Finland, and Germany are provided in accordance with the referral

chain. Primary healthcare services form the system's backbone to ensure equal access to health services for everyone, and a referral chain is implemented between the links of this hierarchy, either compulsorily or with certain economic incentives. Although the referral system has been emphasized within the framework of the health transformation program in Turkey, its functionality has been eliminated in practice.

The aim of the study was to evaluate and determine the associated factors of appropriate healthcare use of elderly patients presenting to the general surgery outpatient clinic of a tertiary hospital.

METHOD

This research was designed as a hospital-focused cross-sectional study conducted between March 1, 2021, and September 30, 2021. The universe of the study was all the 65 and over-aged patients applying to a tertiary healthcare institution general surgery outpatient clinic.

The researcher collected the data through face-to-face interviews in the general surgery outpatient clinic. The data collection form consisted of two sections. The first section consisted of questions related to the sociodemographic features of the patients (age, marital status, duration of education, number of children, health insurance, etc.). The second section consisted of questions about the medical status of the patients (comorbidity, complaints, duration of complaints, history of emergency service use, etc.) and an evaluation of the appropriate use of health care by researchers. The dependent variable in the study is the appropriate use of tertiary healthcare use by patients aged 65 and over. In the present research, family medicine units were accepted as primary care, public hospitals were accepted as secondary care, and university hospitals were accepted as tertiary care. Independent variables of the present research were age, gender, place of residence, marital status, number of children, cohabitants, duration of education, health insurance, transport, cohabitants, knowing the family physician, nearest health institution, and comorbidity of the patients.

For the sample size calculation, the universe was considered patients admitted to the general surgery clinic for outpatient treatment in 2020. In 2020, the number of 65 and over-aged patients applying to general surgery outpatient clinics was 2939. The sample size was calculated using a prevalence of 50%, a margin of error of 5%, and a confidence level of 95%. The target sample size was found to be 340 participants, and it was achieved. The exclusion criterion was the unwillingness of the patients to participate in the study.

"SPSS version 22 for Windows" software package was used for statistical analysis. Descriptive data were evaluated as frequency and percentage. The Chi-squared test was used to analyze categorical variables. Variables that were significantly different in the Chi-squared test were further analyzed by logistic regression (Backward: LR) analysis. A p-value of <0.05 was considered significant.

RESULTS

A total of 340 patients were enrolled in the study. The frequency of patients applied to healthcare institutions before tertiary healthcare service is summarized in Table 1.

When the complaints of the patients are evaluated, 192 (56.5%) patients had abdominal pain, 37 (10.9%) patients had indigestion bloating, and 31 (9.1%) patients had nausea vomiting. Moreover, 29 (8.5%) patients had reflux, and 23 (6.8%) had hypothyroidism. Complaints of patients applying to the tertiary healthcare institution general surgery outpatient are summarized in Table 2.

Table 1. Frequency of patients applied to healthcare institutions before tertiary healthcare service

Healthcare institution	n (%)
Family health center	30 (8.8)
Public hospital	123 (36.2)
Family health center and public hospital	36 (10.6)
University hospital	151 (44.4)

Table 2. Complaints of patients applying to the tertiary healthcare institution general surgery outpatient

Admission complaint	n (%)
Stomachache	192 (56.5)
Indigestion, bloating	37 (10.9)
Nausea, vomiting	31 (9.1)
Reflux	29 (8.5)
Hypothyroidism	23 (6.8)
Pain or bleeding in the anus	21 (6.2)
Constipation	19 (6.1)
Swelling in the neck	17 (5.0)
Weight loss	12 (3.5)
Difficulty swallowing	8 (2.4)
Diarrhea	4 (1.2)
Other	4 (1.2)

A few patients had more than one complaint.

When the diagnosis of the patients are evaluated, 54 (15.9%) patients were diagnosed with peptic ulcer and esophagitis, 53 (15.6%) with cholelithiasis, and 23 (6.8%) with acute cholecystitis. The frequency of diagnoses in tertiary healthcare institutions is summarized in Table 3.

The frequency of using tertiary healthcare services appropriately was 41 (12.1%). The duration of complaints in 209 (61.5%) of all patients was less than 1 month and 11 (3.2%) of all patients had a history of emergency service use. Thirty (73.2%) of the patients who applied to tertiary healthcare services had less than 1 month of complaints and 179 (59.8%) of the patients who applied to primary and secondary healthcare services had less than 1 month (p=0.101). In addition, a history of emergency service use was detected in 2 (4.8%) of the patients admitted to tertiary healthcare services and in 9 (3.0%) of the patients admitted to primary and secondary healthcare services (p=0.526). Sociodemographic characteristics of patients according to the health service unit used are summarized in Table 4.

Table 3. Frequency of diagnoses in the tertiary healthcare institution

Diagnosis	n (%)
Gastritis, peptic ulcer, esophagitis	54 (15.9)
Cholelithiasis	53 (15.6)
Inguinal hernia	25 (7.3)
Hemorrhoid, anal fissure, perianal fistula	25 (7.3)
Acute cholecystitis	23 (6.8)
Hypothyroidism	20 (5.8)
Multinodular goiter	19 (5.6)
Umbilical hernia, incisional hernia	12 (3.5)
Stomach cancer	12 (3.5)
Simple cyst in the breast	11 (3.2)
Hiatus hernia	8 (2.3)
Perianal abscess, perianal sinus abscess	8 (2.3)
Lipoma	7 (2.1)
Irritable bowel syndrome, gastroenteritis	7 (2.1)
Colorectal tumor	7 (2.1)
Hepatic hydatid cyst	6 (1.8)
Adhesive ileus, subileus	6 (1.8)
Cholangitis, mechanical icterus	4 (1.2)
Diverticulitis	4 (1.2)
Hepatic hemangioma, adenocarcinoma	4 (1.2)
Parathyroid adenoma	3 (0.9)
Esophageal cancer	3 (0.9)
Thyroiditis	2 (0.6)
Other	17 (5.0)
Total	340 (100.0)

When the factors related to the use of health services were evaluated, it was determined that there was a significant difference between the place of residence, duration of education, transport, and to know the family physician in terms of using the health institution (p=0.006, p=0.004, p=0.021, p=0.024, respectively). Evaluation of the factors associated with healthcare use is summarized in Table 5.

DISCUSSION

It is essential for people to receive appropriate healthcare services at the right time and from the right place to protect and improve public health.[6] It is a proven fact that the elderly are among the groups that face the most issues and problems when using healthcare services. The present research was conducted to evaluate the healthcare use of patients aged 65 and over who applied to the general surgery outpatient clinic of a tertiary university hospital in Turkey.

In a properly functioning healthcare system, tertiary healthcare institutions function as centers where education and research activities are carried out and in cases that have not been resolved in primary and secondary care and require further examination and treatment.[7] In the present research, it was found that only 12.1% of the patients could be examined and treated in tertiary healthcare institutions. In contrast, all the remaining patients could be examined and treated in primary and/or secondary healthcare institutions. Accordingly, it was found that only 12 people out of every 100 patients using healthcare services were suitable to receive services from a tertiary healthcare institution. This is direct evidence showing that tertiary healthcare institutions are not used effectively.

In the present study, it was found that living in city centers, low educational level, owning a car, and not knowing a family physician were factors that contributed to the ineffective use of tertiary healthcare institutions. It was found that applying to a tertiary healthcare institution was 2.994 times more common among those living in the city compared with those living in rural areas. Factors such as rural settlement, long distances, and high travel costs reduce accessibility to health services and limit their use.[8] Furthermore, healthcare investments are usually concentrated in urban areas. Coupled with the transportation and infrastructure facilities in urban areas, these factors facilitate access to healthcare services.[9]

It was found that applying to a tertiary healthcare institution was 3.032 times among those with less than 5 years of education compared with those with more than 5 years of education. Previous evidence shows that educational status affects the use of healthcare services, and people

Table 4. Sociodemographic characteristics of patients according to the health service unit used

	Total (n=340)	Tertiary healthcare (n=41)	Primary and secondary healthcare (n=299)	p
Age groups				
≥ 70 years	132 (38.8)	22 (53.6)	110 (36.8)	0.038
65–69 years	208 (61.2)	19 (46.4)	189 (63.2)	
Gender				
Female	206 (60.6)	26 (63.4)	180 (60.2)	0.693
Male	134 (39.4)	15 (36.6)	119 (39.8)	
Place of residence				
City	164 (48.2)	27 (65.8)	137 (45.8)	0.016
Rural	176 (51.8)	14 (34.2)	162 (54.2)	
Marital status				
Married	245 (72.1)	30 (73.2)	215 (71.9)	0.866
Not married	95 (27.9)	11 (26.8)	84 (28.1)	
Number of children				
4 and less	121 (35.6)	14 (34.1)	107 (53.7)	0.837
5 and more	219 (64.4)	27 (65.9)	192 (46.3)	
Cohabitants				
Alone	29 (8.5)	4 (9.7)	25 (8.3)	0.764
Not alone	311 (91.5)	37 (91.3)	274 (91.7)	
Duration of education				
<5 years	144 (42.4)	28 (68.3)	116 (38.8)	0.001
≥5 years	196 (57.6)	13 (31.7)	183 (61.2)	
Health insurance				
Yes	235 (69.1)	34 (82.9)	201 (67.2)	0.041
No	105 (30.9)	7 (17.1)	98 (32.8)	
Transport				
Personal	41 (12.1)	9 (21.9)	32 (10.7)	0.039
Public	299 (87.9)	32 (78.1)	267 (89.3)	
Cohabitants				
Alone	87 (25.6)	10 (24.4)	77 (25.7)	0.851
Not alone	253 (74.4)	31 (75.6)	222 (74.3)	
Nearest health institution				
Family health center	253 (74.4)	29 (70.7)	224 (74.9)	0.561
Public hospital	60 (17.7)	7 (17.0)	53 (17.7)	
University hospital	27 (7.9)	5 (12.3)	22 (7.4)	
To know the family physician				
Yes	179 (52.6)	14 (34.1)	165 (55.1)	0.011
No	161 (47.4)	27 (65.9)	134 (44.9)	
Comorbidity				
No	95 (27.9)	13 (31.7)	82 (29.4)	0.562
1 comorbidity	151 (44.4)	15 (36.6)	136 (45.4)	
2 or more comorbidities	94 (27.7)	13 (31.7)	81 (25.2)	

Data are presented as n (%).
Chi-squared test.

Table 5. Evaluation of factors associated with healthcare use

	Beta	SE	Wald	OR	95% CI		p
					Lower bound	Upper bound	
Age groups							
≥ 70 years	0.682	0.373	3.344	1.978	0.952	4.107	0.067
65–69 years (ref)							
Place of residence							
City	1.907	0.397	7.629	2.994	1.375	6.521	0.006
Rural (ref)							
Duration of education							
<5 years	1.109	0.385	8.279	3.032	1.424	6.454	0.004
≥5 years (ref)							
Health insurance							
Yes	0.805	0.472	2.907	2.238	0.886	5.648	0.088
No (ref)							
Transport							
Personal vehicle	1.150	0.496	5.365	3.157	1.193	8.353	0.021
Public transport (ref)							
To know the family physician							
Yes	-0.855	0.378	5.117	0.425	0.203	0.892	0.024
No (ref)							

Logistic regression test.

with a low educational level have difficulty accessing the right level of healthcare services. Furthermore, the use of preventive health services increases with higher education levels, and these individuals have to use healthcare services less commonly.[8,10–12]

In the present study, it was found that applying to a tertiary healthcare institution was 3.157 times more common among those who used private vehicles to reach the hospital compared with those using public transport. Previous studies in the literature have stated that "ease of transportation" was one of the factors facilitating the use of healthcare services, and this had a significant effect on the selection of healthcare services by elderly individuals.[13,14]

In the study, it was found that applying to a tertiary healthcare institution was 0.425 times more common among those who knew who their family physician was compared with those who did not. In Turkey, family physicians have been given the key role of gatekeepers to ensure the proper functioning of healthcare services. Gatekeeping is a critical role for family physicians whereby they arrange and facilitate the access of patients to secondary and tertiary healthcare services and thus ensure cost-effectiveness and efficient use of resources.[15,16] In the present study, the results show that admission to tertiary healthcare institutions decreases when people receive service from family physicians. This result clearly shows that family physicians perform the gatekeeper role properly and refer patients to secondary or tertiary healthcare institutions only when necessary.[17]

The limitations of the study include the absence of an algorithm for making the appropriate treatment decision, the fact that the treatment decision is at the discretion of the physician, and the study cannot be conducted with larger data.

CONCLUSION

Based on the findings of the present study, place of residence, duration of education, had to use personal vehicle, and effective use of family medicine centers were determined as the most important factors preventing the effective use of tertiary healthcare institutions. Accordingly, the effective use of primary healthcare institutions will ensure more effective use of tertiary healthcare institutions.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: All authors declare that they have no conflict of interest.

Ethics Committee Approval: The Research Ethics Committee of the Kafkas University Faculty of Medicine approved this study (Approval date: March 9, 2021, and Approval number: 04). Furthermore, written and verbal consent was obtained from the individuals participating in the present study.

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