

# General characteristics of otorhinolaryngology consultations: 3-year analysis

## Kulak burun boğaz hastalıkları konsültasyonlarının genel özellikleri: 3 yıllık analiz

Muhammet Fatih Topuz<sup>1</sup>

<sup>1</sup> Department of Otorhinolaryngology,  
Kütahya University of Health Sciences Faculty  
of Medicine, Kütahya, Turkey

ORCID ID of the author(s)

MFT: 0000-0002-7996-662X

Corresponding author / Sorumlu yazar:  
Muhammet Fatih Topuz

Address / Adres: KSBÜ Evliya Çelebi Eğitim  
Araştırma Hastanesi - Ek Bina KBB Bölümü,  
Saray Mahallesi Fatih Sultan Mehmet Bulvarı,  
Merkez, Kütahya, Türkiye  
E-mail: drfatihtopuz@yahoo.com

Ethics Committee Approval: The study was  
approved by KUHS Institutional Ethics  
Committee for Non-Invasive Research (dated:  
10/21/2020, reference number: 2020/15-06). All  
procedures in this study involving human  
participants were performed in accordance with  
the 1964 Helsinki Declaration and its later  
amendments.

Etik Kurul Onayı: Bu çalışma, KSBÜ girişimsel  
olmayan etik kurulu (21.10.2020 tarih ve  
2020/15-06 sayılı izin) tarafından onaylandı.  
İnsan katılımcıların katıldığı çalışmalarda tüm  
prosedürler, 1964 Helsinki Deklarasyonu ve daha  
sonra yapılan değişiklikler uyarınca  
gerçekleştirilmiştir.

Conflict of Interest: No conflict of interest was  
declared by the authors.

Çıkar Çatışması: Yazarlar çıkar çatışması  
bildirmemişlerdir.

Financial Disclosure: The authors declared that  
this study has received no financial support.

Finansal Destek: Yazarlar bu çalışma için finansal  
destek almadıklarını beyan etmişlerdir.

Published: 10/28/2020  
Yayın Tarihi: 28.10.2020

Copyright © 2020 The Author(s)  
Published by JOSAM

This is an open access article distributed under the terms of the Creative  
Commons Attribution-NonCommercial-NoDerivatives License 4.0 (CC  
BY-NC-ND 4.0) where it is permissible to download, share, remix,  
transform, and build upon the work provided it is properly cited. The work  
cannot be used commercially without permission from the journal.



### Abstract

**Aim:** Nowadays, with the rapid development and change of knowledge in the scientific field, the number of specialty branches in medicine has increased. Therefore, the rate of consultation requests in different specialties during the patient evaluation process gradually escalates. This study aims to evaluate the characteristics of the diagnostic and therapeutic consultations requested from the Otorhinolaryngology (ENT) branch in a university hospital.

**Methods:** In this cross-sectional study, the data of patients consulted to the ENT clinic of Kütahya University of Health Sciences Evliya Çelebi Training and Research Hospital between January 1st, 2017 and December 31st, 2019 were retrospectively scanned. Apart from demographic findings such as age and gender, departments requesting the consultation, post-consultation diagnoses and surgical treatments performed by an ENT physician were noted.

**Results:** The total number of patients with an ENT consultation was 2340. The mean age of the patients was 45.95 (25.09) years. Most consultation requests were made from the emergency department (n=877, 37.5%), which was followed by 278 requests (11.9%) by the neurology and neurology ICU departments, and 193 (8.2%) requests by the anesthesiology and intensive care unit (ICU) departments. Although varying among age groups, epistaxis (10%) and vertigo (dizziness) (10%) were the most common diagnoses. A total of 146 patients received surgical treatment. The most common surgical operations were tracheotomy and nasal bone fracture reduction.

**Conclusion:** Determining the characteristics of patients for whom ENT consultation is required will be beneficial in shaping the training programs for other clinics, reducing unnecessary consultation requests, thus reducing the workload of ENT physicians.

**Keywords:** Consultation, Otorhinolaryngology, University hospital

### Öz

**Amaç:** Günümüzde bilimsel alanda bilginin çok hızlı bir şekilde gelişimi ve değişimi ile birlikte tıpta uzmanlık dallarının sayısı artmıştır. Bu nedenle hasta değerlendirme sürecinde farklı uzmanlık dallarından konsültasyon istenme oranları giderek artmaktadır. Bu çalışmanın amacı bir üniversite hastanesinde kulak burun boğaz hastalıkları (KBB) branşından tanınal ve tedavi amaçlı istenilen konsültasyonların özelliklerinin değerlendirilmesidir.

**Yöntemler:** Bu kesitsel çalışmada 01.01.2017 - 31.12.2019 tarihleri arasında Kütahya Sağlık Bilimleri Üniversitesi Evliya Çelebi Eğitim ve Araştırma Hastanesi KBB Hastalıkları kliniğine konsültasyonla yönlendirilen hastaların dosyaları retrospektif olarak tarandı. KBB hastalıkları konsültasyonu istenen olguların yaş, cinsiyet gibi demografik bulgularının dışında; konsültasyon istenen branş, konsültasyon sonrası konulan tanıları ve KBB hekimi tarafından yapılan cerrahi tedavileri not edildi.

**Bulgular:** 3 yıl içinde KBB hastalıklarına konsültasyon istemi yapılan toplam hasta sayısı 2340'dır. Hastaların yaş ortalamaları 45,95 (25,09)'dir. En çok konsültasyon istemi 877 (%37,5) hasta ile acil servis bölümünden olmuştur. Acil servis bölümünü 278 (%11,9) hasta ile nöroloji ve yoğun bakım ünitesi (YBÜ), 193 (%8,2) hasta ile anestezi ve YBÜ takip etmiştir. Hastalara konsültasyon sonrası yaş gruplarına göre değişimle birlikte toplamda en sık epistaksis (%10) ve baş dönmesi (%10) tanıları konulduğu görülmüştür. 146 hastaya konsültasyon sonrası cerrahi girişim uygulanmıştır. En sık yapılan cerrahi girişimler trakeotomi açılması ve nazal fraktür onarımı olarak bulunmuştur.

**Sonuç:** KBB konsültasyonu istenilen hastaların özelliklerinin belirlenmesi, diğer branşların eğitim programlarının şekillenmesinde faydalı olacak, gereksiz konsültasyon istemlerinin azalmasını sağlayacak böylece KBB hekimlerinin iş yükünü azaltacaktır.

**Anahtar kelimeler:** Konsültasyon, Kulak burun boğaz hastalıkları, Üniversite hastanesi

## Introduction

Scientific and technological advances in medicine have enabled the diversification and specialization of different medical branches. The specialization of physicians in certain branches has increased the effectiveness and efficiency in the relevant field, however, it has led to the need for multiple physicians in patients with multiple organ complications or systematic diseases. The practice of consultation, in which more than one physician participates in the diagnosis and treatment process, is an important health service in approaching the patient [1].

Consultation can be defined as a request of help or counseling by the primary responsible physician to a physician in another clinic, sharing all the information gathered during the diagnosis, treatment, and follow-up process about the patient. Thus, physicians in different clinics participate in the diagnosis and treatment process of the same patient, and the quality of healthcare service increases by ensuring that the patient is provided with the most appropriate healthcare service. Numerous studies are examining the consultation requests in many branches, which include consultations requested especially by the emergency service. There are also studies on internal medicine, general surgery, thoracic surgery, chest diseases and dermatology, as well [2-6]. However, studies examining the ENT section are very limited. The main purpose of this study is to make a three-year retrospective analysis of patients who were referred to the ENT department from other clinics in a university hospital.

## Materials and methods

This study was conducted after approval was obtained from Kütahya University of Health Sciences (KUHS) Institutional Ethics Committee for Non-Invasive Research, with the reference number 10/21/2020- 2020/15-06.

In this study, the files of patients, who were referred with a consultation to the ENT department of the KUHS Evliya Çelebi Training and Research Hospital between January 01, 2017, and December 31st, 2019 (included), were retrospectively scanned. Apart from demographic findings such as age and gender, the departments requesting the consultation, post-consultation diagnoses and surgical treatments performed by an otorhinolaryngologist were noted. The data of patients whose consultation requests are not finalized by ENT physicians were not included in this study. Patients who received surgical treatment by an otolaryngologist and consulted for emergency services due to postoperative complications were also excluded.

### Statistical analysis

The data obtained from the study were evaluated using open source software 'Jamovi' (version 1.1.9). During the statistical evaluation of the data obtained from the study, categorical data were summarized in frequency (n) and percentage (%).

## Results

The total number of patients for whom consultation was requested from ENT diseases between 01.01.2017 and 31.12.2019 was 2340. The mean age of the patients was 45.95

(25.09) years. Among the patients included in the study, there were 1368 (58.5%) males and 971 (41.5%) females. A total of 394 of these patients were within the pediatric age range and 667 were geriatric patients over 65 years of age. The demographic findings of the patients are summarized in Table 1.

Table 1: The demographic findings of the patients

Number of patients	2340
2017	953 (40.7%)
2018	817 (35%)
2019	569 (24.3%)
Mean Age	45.95 (25.09)
Distribution of patients by age	
Ages 0 – 17	394 (16.8%)
Ages 18 – 64	1279 (54.7%)
Ages > 65	667 (28.5%)
Gender	
Male	1368 (58.5%)
Female	971 (41.5%)
Number of outpatients / inpatients	839 (35.8%) / 1501 (64.2%)

Most of the consultations were from the emergency department with 877 (37.5%) patients. The emergency department was followed by 278 requests (11.9%) from the neurology and neurology ICU departments and 193 requests (8.2%) from the anesthesiology department and the ICU. The distribution of the departments requesting an ENT consultation is summarized in Figure 1.

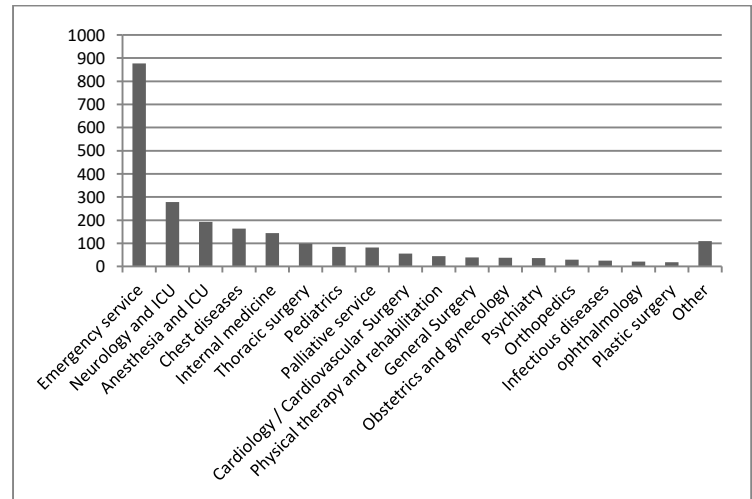


Figure 1: Distribution of departments requesting an ENT consultation

It was observed that the most common diagnoses made by the ENT department during a consultation were epistaxis (10%) and vertigo (dizziness) (10%). Epistaxis (98 patients), foreign body in the nose (69 patients), and nasal bone fracture (62 patients) were the most common reasons for consultation requests from the emergency department. The distribution of diagnoses of the consultations requested from the ENT diseases is summarized in Table 2.

The most common reason for consultation request was foreign body in the nose (18%), foreign body in the ear (11.4%), and nasal bone fracture (8.9%). In the 18-65-year age group, the most frequent cause of consultation was vertigo (dizziness) (12.6%), epistaxis (10.2%) and upper respiratory tract infection (9.5%). In geriatric patients, the most common causes were tracheotomy/tracheostomy and related complaints (13.9%), epistaxis (12.6%), and dizziness (9.1%).

Following ENT consultations, 66 patients were treated for tracheotomy, 65 patients for nasal bone fracture reduction, 5 patients for nasal bleeding, 4 patients for foreign body removal from the external auditory canal, 2 patients for neck exploration due to falling from a height, 2 patients for foreign body removal

from the nose, 1 patient for endoscopic sinus surgery due to firearm injury, and 1 patient received tracheotomy for foreign body aspiration and foreign body removal from the larynx.

It was observed that a detailed and thorough reason for the consultation request was written in the Hospital Information Management System (HIMS) in 1205 (51.5%) of the requests, while insufficient information was provided in 1135 (48.5%) patients.

Table 2: Distribution of diagnoses of consultations in ENT disease

	0-17 age	18-64 age	>65 age	Total
<b>Otology</b>				
Dizziness (vertigo)	10	162	61	233
Cerumen impaction	10	74	35	119
External and Middle ear infections (acute otitis media, acute serous otitis media)	30	46	13	89
Foreign body in the outer ear canal	45	25	6	76
Hearing loss	3	25	22	50
Chronic otitis media	12	22	9	43
Facial nerve paralysis	5	18	18	41
Tinnitus	2	10	1	13
Otorrhea	2	9	2	13
Traumatic eardrum perforation	2	10	-	12
Temporomandibular joint diseases	-	6	6	12
Sudden hearing loss	-	3	3	6
Superficial injury of the ear	1	-	3	4
<b>Head and Neck Surgery</b>				
Acute tonsillitis	11	54	1	66
Benign soft tissue masses	18	21	18	57
Intraoral / Tongue / lip diseases	2	12	16	30
Head and Neck trauma	10	3	1	14
Acute lymphadenitis	1	7	6	14
Foreign body in the mouth	3	5	2	10
Salivary gland diseases	-	5	5	10
Adenoid hypertrophy	9	-	-	9
Malign soft tissue masses	-	8	1	9
Oral candidiasis	-	2	6	8
Myalgia	1	3	2	6
Foreign body in the neck	2	-	-	2
Choanal atresia	1	-	-	1
<b>Laryngology</b>				
Tracheostomy/tracheotomy and related diseases	3	83	93	179
Dysphagia	3	7	24	34
Foreign body in the larynx	10	21	3	34
Voice disorder	1	16	12	29
Laryngeal malignancies	-	15	14	29
Vocal cord paralysis	-	9	3	12
Gastroesophageal reflux	1	5	5	11
Laryngomalacia	1	-	-	1
<b>Rhinology</b>				
Epistaxis	19	131	84	234
Upper respiratory tract infection (acute pharyngitis nasopharyngitis)	5	122	14	141
Nasal bone fracture	35	71	5	111
Foreign body in the nasal passage	71	-	-	71
Nasal septum deviation	5	-	30	35
Allergic rhinitis	7	19	9	35
Acute sinusitis	2	20	4	26
Superficial injuries of the nose	4	5	1	10
Nasopharyngeal / paranasal sinus malignancies	-	1	6	7
Headache	-	5	1	6
Sleep apnea	-	3	3	6
Traffic accident / work accident	9	36	3	48
Assault / gunshot injury	7	21	3	31
Dropping	5	8	4	17
Others	26	151	109	286
<b>Total</b>	<b>394</b>	<b>1279</b>	<b>667</b>	<b>2340</b>

**Discussion**

Aygençel et al. [2] found the rate of consultation requests by the emergency service to be between 20-40% in Turkey. In the same study, the most frequently consultation-requested departments were internal medicine, cardiology, and chest diseases, while the most consulted surgical branch was general surgery. Bali et al. [7] examined the distribution of one-year consultation requests in the context of the requester and requested departments, and found that among 6113 requests, the department which made the most requests was the emergency department with 991 (16.2%) requests, the department which received the most requests was the infectious diseases department, with 2047 (33.5%) requests. The same study reveals

consultation requests made by the ENT department as 19 (0.03%) whereas consultation requests to the ENT department were 85 (1.4%). There is no other study in the literature that provides a request rate about ENT diseases. In the institution where the study was conducted, an average of 87,000 consultation requests were made in the last three years throughout the hospital. Of all consultation requests, 2340 (0.9%) were made to the ENT department. In this study, we found that the rate of consultation requests made to the ENT department is about 30 times higher, compared to the results provided by Bali et al.

In Turkey, studies reveal that the most frequent age group that is consulted in the emergency department is middle age (40-65 years) [8,9]. Parallel to this, the mean age of patients for whom ENT consultation request was made was 45.95 (25.09) years in our study. Reasons of consultation requests differ according to age groups. In the pediatric age group, the most common reason for consultation was a foreign body (18%) in the nose. Among the 18-64 age group, the most common reason for admission was vertigo (dizziness) (12.6%). In geriatric patients, the most common complaints regarded tracheotomy/tracheostomy (13.9%). There is no study in the literature examining the rates of consultation requests based on age groups. For this reason, epidemiological studies to be carried out in larger populations will play an important role in the planning of health services and the development of preventive health services.

In present study, the rate of consultation requests from ENT diseases was 780 patients per year. Bali et al. [7] determined this rate as 85 patients per year. There is no other study in the literature that includes such data in the field of ENT. In the study on general surgery, 221 consultation requests for patients were made in six months, whereas in the thoracic surgery 388 requests were made annually [3,4]. The number of consultation requests from the emergency department to internal medicine is 546, within only two months. [2] These rates may of course vary according to patient density, regional and seasonal differences. Nevertheless, in line with this information, our rate of requesting consultation in surgical clinics is high and lower than that of internal medicine.

In this study, consultations requested from the ENT department of a university hospital were examined. There are similar studies in many branches in the literature. A study reported that 50.51% of the consultations requested from thoracic surgery were by the emergency department [4]. In another study conducted by the chest diseases department, it was found that the most frequent consultation request was made by the emergency department (28.9%) [5]. The only study on ENT was conducted by Kayabaşı et al. [10] and they found this rate as 80.6%. In this study, it is observed that most outpatient consultation requests were made by the emergency department (37.5%). When the qualities of the requests are examined, we found that most diseases do not require emergency surgical intervention and can be treated with a simple intervention or medical treatment. Obviously, special training in these circumstances for emergency room physicians will contribute to eliminating such deficiencies and reduce the consultation requests. However, especially due to the high circulation of

physicians working in the emergency room in our country, hospital-based training will not deliver a definite solution.

Kayabaşı et al. [10] found sore throat (acute tonsillitis) (22.33%), vertigo (dizziness) (14.88%), and epistaxis (14.88%) as the most common reasons for seeking a consultation by the emergency department. In this study, the most common diagnoses after ENT evaluation were epistaxis (10%) and vertigo (dizziness) (10%). Epistaxis occurs in 60% of the population [11]. An epidemiological study concluded that 20–30% of adults experience dizziness at least once in their lifetime, and the prevalence increases further with age [12]. Epistaxis and dizziness are diseases that need to be considered seriously because they affect a significant portion of the society, deteriorate quality of life, cause loss of workforce, and sometimes are a symptom of potentially life-threatening diseases.

In the present study, the number of outpatient consultation requests was 839. The number of outpatient consultation requests outside the emergency department was only 182. Most outpatient consultations were requested by the anesthesia department with 78 patients. Unfortunately, this data does not reflect actual practice. This was thought to be due to outpatient referrals not via HIMS, but in the form of a memo or with verbal directions such as "make an appointment to the ENT department and get examined by an ENT physician". Our clinical experience is that outpatient consultation requests are much higher.

Kayabaşı et al. [10] reported the surgical intervention rate after consultation as 1%. This rate was reported as 33% in the general surgery department [3]. In this study, the number of patients who underwent surgery within 3 years after a consultation was 146 (6.2%). The plastic surgery department deals with maxillofacial traumas in the institution we work in. Therefore, our rate of intervention due to trauma is very low.

In present study, the most common surgical intervention after a consultation was a tracheotomy operation. Patient follow-up rates in ICU have increased with the development of medical treatment techniques. Temporary tracheostomy is more beneficial for patients who may require long-term ventilator support in ICU or palliative care unit wards for various reasons [13]. The procedure of tracheotomy by percutaneous dilatation method by anesthesiologists is increasing day by day, and consultation is requested from ENT physicians only in complicated cases. For this reason, tracheotomy operation is thought to be at higher rates than we found in this study.

It has been shown that the rate of consultation requests has increased gradually over the years [14]. Although the consultation is an important application in the diagnosis and treatment of patients, it also causes negative results such as extending the duration of patient stay in the hospital, sometimes requiring extra laboratory tests and imaging, in parallel, increasing the cost of diagnosis and treatment, and escalation in patient density, especially in departments receiving outpatients. Furthermore, during the consultation process, request being made, disruptions in reaching the consultant physician, and related slowdowns in health services tend to increase violence in patients and their relatives, which result in unwanted incidents. Therefore, when requesting a consultation, physicians should be

more selective and should stay away from the defensive medicine approach. In present study, it was found that the consultation requests decreased over the years (40.7%, 35%, 24.3%). It was thought that the main reason for the decreasing number of requests over the years was to make requests in the form of verbal or paper writing instead of making requests through the hospital information management system (HIMS).

It is very important to fill in the consultation forms with the necessary information to make the correct diagnosis and treatment of the patients. Insufficient communication between physicians may hinder the provision of a safe health service. In this study, it was found that almost half (48.5%) of the sections requesting consultation did not write anything meaningful in the explanations section. Generally, the physician who requests a consultation informs the consultant physician verbally (face to face or by phone) or by hand with a consultation paper. However, consultations that are not officially registered on HIMS play essential roles, both in terms of keeping records and medicolegal issues.

### Limitations

Since the current study is based on retrospective file scanning, it has some limitations. Firstly, it is a single-center study. Neurology consultations may be higher than other health institutions due to the presence of a neurology ICU in our institution. Again, the number of patients hospitalized for physical therapy and rehabilitation due to the separate physical therapy and rehabilitation hospital affiliated to our institution is quite high. This increases the number of consultations in the physical therapy and rehabilitation department. It should be considered normal to see differences in consultation requests due to these differences in the specific health institution. Due to this and similar reasons, this study may not represent the whole country. A multi-center study will be useful in obtaining more detailed information. Another important limitation is that outpatient consultations are not conducted on HIMS, but by writing a memo or verbal reference. Therefore, consultation requests from non-emergency departments were not received at the expected rate. Our experience is that the consultation rates of pediatric, anesthesia, neurology, and chest disease departments are higher than the rates found in our study.

### Conclusion

This is the first study to examine the consultations requested from the ENT department in the Aegean region. Only one study has been conducted on this subject in our country. The patient profile may vary due to regional differences. For this reason, similar studies to be carried out in different regions of our country will contribute to understanding the characteristics of the consultations other departments request from the ENT department. Thus, the reasons for requesting consultation will be better understood and the workload of ENT physicians will be reduced by providing training on some issues that can be concluded without an ENT physician in other related clinics.

### Acknowledgements

I would like to thank Ali Kırılı and İsmail Aldemir, who are in charge of our institution's data processing center, for their kind support.

## References

1. Dönmez SS, Durak VA., Torun G, Köksal Ö, Aydın Ş. Acil Serviste Gerçekleştirilen Konsültasyon Sürecinin İncelenmesi. Uludağ Üniversitesi Tıp Fakültesi Dergisi. 2017;43(1):23-8.
2. Aygencel G, Nas A, Sartaş H, Deryal K, Demircan A. Bir Üniversite Hastanesi Acil Servisindeki İç Hastalıkları Konsültasyonlarının Genel Özellikleri. Fırat Tıp Dergisi. 2012;17(4):219-22.
3. Kahramanca Ş, Kaya O, Azılı C, Güzel H. Genel cerrahi konsültasyonlarının hasta tedavisini yönlendirmedeki rolü. Turkish Journal of Surgery. 2013;29(2):20-4.
4. Çobanoğlu U. Bir üniversite hastanesinde göğüs cerrahisi konsültasyonu yapılan olguların değerlendirilmesi. Tur Toraks Derg. 2009;10(3):117-21.
5. Balbay EG, Soğukpınar Ö, Tanrıverdi E, Süner KÖ. Devlet hastanesinde yatağında istenen göğüs hastalıkları konsültasyonları. Konuralp Tıp Dergisi. 2013;5(1):34-7.
6. Nazik H, Hakkoymaz H. Assessment of patients presented to the emergency department with dermatological complaints. J Surg Med. 2019;3(2):139-42.
7. Bali KK, Kıdak LB, Güngör DÖ. Hastane bilgi yönetim sistemlerinin konsültasyon süreci üzerine etkileri. Hacettepe Sağlık İdaresi Dergisi. 2019;22(4):767-82.
8. Kılıçaslan İ, Bozan H, Oktay C, Göksu E. Türkiye’de acil servise başvuran hastaların demografik özellikleri. Türkiye Acil Tıp Dergisi 2005;5:5-13.
9. Polat O, Kabaçam G, Güler İ, Ergişi K, Yıldız A. İbn-i Sina Hastanesi acil servisine başvuran hastaların surveyans analizi. Türkiye Acil Tıp Derg. 2005;5:78-81.
10. Kayabaşı S, Gül F. Kulak burun boğaz hekimlerine yapılan konsültasyon nedenleri ve sonuçları: retrospektif bir analiz. Harran Tıp Fakültesi Dergisi. 2019;16(1):143-7.
11. Al Khtoum N, Al Roosan M. The evaluation of conservative measures in the treatment of epistaxis. Khartoum Med J. 2008;1:15-7.
12. Neuhauser HK, Radtke A, von Brevern M, Lezius F, Feldmann M, Lempert T. Burden of dizziness and vertigo in the community. Arch Intern Med. 2008;168(19):2118-24. doi: 10.1001/archinte.168.19.2118.
13. Topuz MF. Assessment of diagnosis and treatment of geriatric patients in otorhinolaryngology. J Surg Med. 2020;4(6):496-500.
14. Aksoy SB, Coşkun Ö, Gül HC, Görenek L, Eyigün CP. Enfeksiyon hastalıkları konsültasyon hizmetlerinin antibiyotik kullanımı, direnç ve maliyet üzerine etkisi. Gülhane Tıp Dergisi. 2008;50(2):71-7.

This paper has been checked for language accuracy by JOSAM editors.

The National Library of Medicine (NLM) citation style guide has been used in this paper.