Prevalence of Otolaryngology Refferal from Primary Health Care in Al-hasa Saudi Arabia

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ABSTRACT

Background: Primary healthcare (PHC) is prioritized in the Kingdom of Saudi Arabia's health reforms, with ENT services playing a vital role due to the high prevalence of ENT-related complaints, particularly in children. While most patients are successfully managed by primary care physicians, complex cases beyond their expertise are referred to specialists, making ENT complaints the third-largest group of patients referred to hospital specialist clinics. However, resource limitations, a shortage of qualified specialists, and patient requests for alternative services sometimes result in the need for further management that some hospitals are unable to provide, leading to costly and time-consuming transfers to other facilities. In the pediatric emergency department, ENT complaints are common, and paediatricians frequently consult otolaryngology specialists for various conditions such as foreign bodies, infections, trauma, and congenital issues.

Objectives: To assess the prevalence of referrals to ENT clinics in King Abdulaziz Hospital, Alhasa.

Method: A retrospective descriptive study took place. A total of 269 referred patients from different age groups were included. After the data were extracted from the referral system at King Abdulaziz Hospital in 2022, they were revised, coded, and then fed to the statistical software IBM SPSS version 22.

Result: A total of 269 referred patients were included. The most reported chronic health problems of referred patients from PHC to ENT clinics in King Abdulaziz Hospital are DLP (11.2%), HTN (10.4%), and DM (9.3%), respectively. However, most of the referred patients (70.6%) had no chronic health problems. The most common symptoms in family medicine clinics among the study population were hearing loss, snoring and mouth breathing, recurrent tonsillitis, impacted wax, recurrent epistaxis, and tinnitus. The vast majority of study patients (98.5%) had regular referrals, while only (1.5%) needed urgent referrals. Urgent referral was needed for 5.5% of patients under 10 years, comparable with older participants with statistical significance.

Conclusion: There is a high prevalence of regular referrals to ENT clinics in King Abdulaziz Hospital by 2022. Patient age was the only significant factor associated with the type of referral. It would be beneficial to evaluate patient preferences and clinical outcomes in future research.

KEYWORDS: Primary healthcare (PHC), Ear Nose Throat (ENT), primary care physicians (PCPs), otolaryngology-head and neck surgery (ORL- HNS), Family medicine.

INTRODUCTION

Primary healthcare (PHC) constitutes an essential component within an effective healthcare system. Priority is given to PHC in the health reforms of the Kingdom of Saudi Arabia (KSA), which place it at the center of the Model of Care that was recently proposed provide better care (1). Ear Nose Throat (ENT) is considered one of the services rendered as it is estimated that around 20 % of complaints received by primary care physicians are related to ear, nose, and throat; this rate rises to almost 50% in children (2).

The majority of these patients are successfully assessed and treated accordingly. However, complicated or perplexing cases or one that is beyond the primary care physicians' field are referred to specialists. According to a survey, people with ENT problems make up the third-largest category of patients referred to hospital-specialized clinics (2). Due to a shortage of available resources,

qualified specialists, or requests from patients' families for a different specialist or service, some cases could require further management that some hospitals are unable to give. These considerations compel hospitals to transfer these persons to alternative institutions, a process that may incur significant costs, consume substantial time, and impose limitations on both the patient and their parents. This is especially true when the patient is sent to a facility located beyond their local vicinity (3). There is currently no literature examining primary care physicians (PCPs) referral preferences for otolaryngology. Furthermore, there hasn't been any study on PCPs' requests for consultations in otolaryngology (4).

The referral process can be rationalized to reduce costs and raise the quality of care. There are two categories for primary care physicians' hospital referrals. Patients who need urgent referrals are those who need care right away, which may entail hospitalization or urgent specialist consultations. Such patients will be referred to ER. Non-urgent or routine referrals are used to describe other problems that do not require immediate specialist assessment. The specialist's appointment for these circumstances could occur as soon as in a day or two or in three months. A literature review study at King Khalid Military City situated that old and already filled-out referral forms are given out again to each physician. The physician examines the patient's records to see the results of the standard referrals. Along with the final diagnosis, the available treatments, and the type of follow-up, details of the professional consultation are all recorded (5).

The pediatric emergency department sees a lot of complaints about the ENT (ear, nose, and throat) (6). When otorhinolaryngology diseases necessitate treatment, paediatricians and otolaryngology-head and neck surgery (ORL- HNS) specialists are frequently consulted. Foreign bodies (FB), infection, trauma, and delayed congenital issue diagnoses are some of the possible causes of these occurrences (7).

Thus, we are assuming that the prevalence of referral to ENT clinics is high in primary health care centers in Al-Hasa; this study will be conducted to assess the prevalence of referral and test our hypothesis.

Materials and methods

This study was conducted at King Abdulaziz Hospital (KAH) Clinic in Al-hasa. All pediatric and adult patients at KAH Clinics in Al-Hasa, Saudi Arabia, who were referred from family medicine or emergency department to an Otolaryngologist within the past year, were included in this study.

This research is a retrospective descriptive analysis of all patients with ORL-HNS-related issues who were sent to KAH's ENT clinics in Al-Hasa, Saudi Arabia, between January 2022 and December 2022. In relation to sample size = $Z2(1-P)$, d2, The variables in this equation are sample size (n), confidence level (Z), anticipated prevalence (P), precision (d), and effect size (matching). Related studies or the researchers' own pilot study may be used to determine P. A confidence level of 95% is required if 385 measurements or surveys are conducted to ensure that the true value is within ±5% of the measured or surveyed value.

A randomized technique was used to obtain a sample from patients who were referred from the family medicine or emergency department to an ENT clinic in KAH in Al-Hasa; it includes all pediatric and adult patients of all ages, and data was collected through the health information system of ministry of national guard health affairs (BESTcare) that is used by the hospital to write the any patient's medical history, then data written by physicians will be collected on patients who have been referred from outpatient clinics such as family medicine to the ear, nose and throat (ENT) clinic. The data was collected starting from 20 August 2023. A standardized data collection form was developed; no questionnaire was used. A cross-sectional study as the study design, the collected data was first entered into a Microsob Excel file and later analyzed by using Statistical Package for the Social Sciences (SPSS).

The results of the data collection were interpreted by percentages and mean. The Chi-Square test and T-test were used to analyze the data and to find out the Prevalence of otolaryngology referral from King Abdulaziz Hospital in Al-Hasa, Saudi Arabia; The categorical variables will be analyzed using the Chi-Square test, while the continuous variables will be analyzed using the T-test. $P < 0.05$ will be considered the cutoff value for significance.

There was no risk in conducting this study since it is a descriptive study that aims to identify the prevalence of referral to ENT clinics in King Abdulaziz Hospital Clinics. Also, there was no direct benefit to the participants. The identity of the patients is unknown because we measured the number of patients who were referred without a name, including age, gender and most common cases referred to (ORL- HNS) Otorhinolaryngology and Head and Neck Surgery clinic.

Data analysis

Following data extraction, the information was edited, coded, and entered into IBM SPSS version 22, a statistical program (SPSS, Inc. Chicago, IL). Two-tailed tests were used to all statistical analyses. P-values were deemed statistically significant if they were less than 0.05. For every variable, a descriptive analysis was performed using

the frequency and percent distribution, which included the patient's biographical information, ongoing medical conditions, and the primary symptoms that were presenting. Additionally, study patients' types of referrals were graphed. To evaluate the variables related to the kind of referral among research participants, cross tabulation was used. The exact probability test and Chi-square test were used to analyze correlations in small frequency distributions.

Results

A total of 269 referred patients were included. Patients' ages ranged from 1 month to 85 years, with a mean age of 28.7 ±21.4 years old. A total of 148 (55%) patients were males and 121 (45%) were females (Table 1).

Figure 1. Chronic medical condition of referred patients from PHC to ENT clinics in King Abdulaziz Hospital, Al-Hasa. The most reported chronic health problems included DLP (11.2%), HTN (10.4%), DM (9.3%), obesity (3.3%), allergic rhinitis (1.9%), and hypothyroidism (1.1%). Most of the referred patients (70.6%) had no chronic health problems.

Table 2. Presenting symptoms in family medicine clinic among study patients. The most reported hearing loss, snoring and mouth breathing, recurrent tonsillitis, impacted wax, and recurrent epistaxis and tinnitus.

Figure 2. Type of referral among study patients to ENT clinics in King Abdulaziz Hospital, Al-Hasa. The vast majority of study patients (98.5%; 256) had regular referrals, while only 4 (1.5%) needed urgent referrals.

Table 3. Factors associated with the type of referral among study patients. Urgent referral was needed for 5.5% of patients under 10 years versus none of other age groups with recorded statistical significance (P=.012). Patients' gender and chronic health problems were insignificantly associated with their need for urgent ENT referral.

Table 1. Personal data of the study referred patients from PHC to ENT clinics in King Abdulaziz Hospital, Alhasa

Personal data	No	%
Age in years		
< 10	73	27.1%
10-29	69	25.7%
30-39	51	19.0%
40+	76	28.3%
Mean ± SD	28.7 ± 21.4	
Gender		
Male	148	55.0%
Female	121	45.0%

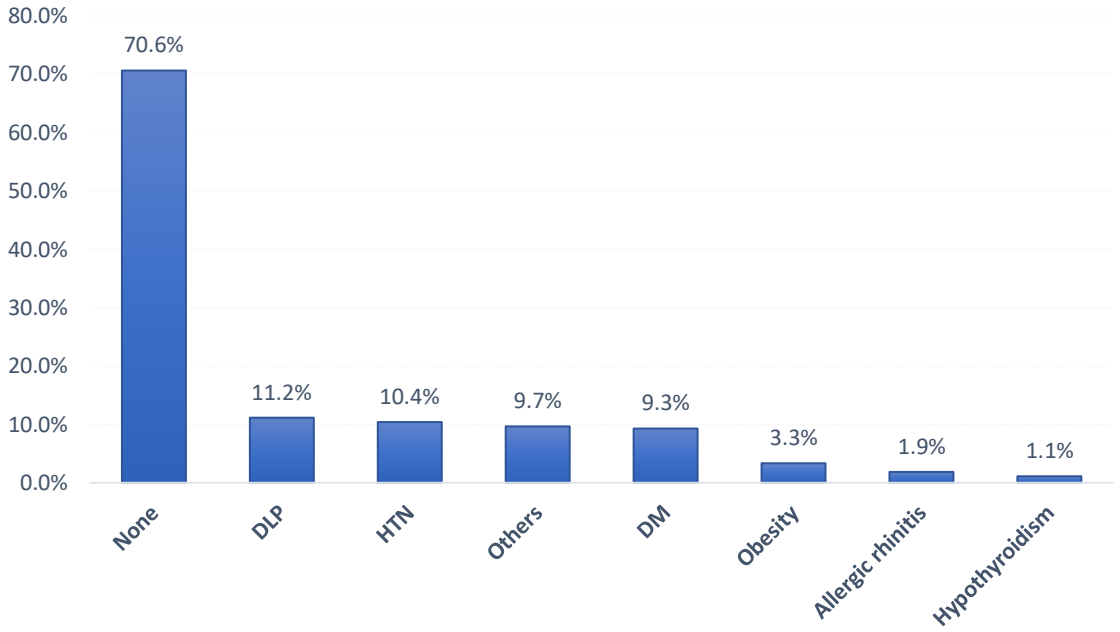

Figure 1. Chronic medical condition of referred patients from PHC to ENT clinics in King Abdelaziz Hospital Alhasa

Table 2. Presenting symptoms in family medicine clinic among study patients

Presenting symptoms	**No**	**%**
Hearing loss	21	7.8%
Snoring, mouth breathing	18	6.7%
Recurrent tonsillitis	14	5.2%
Impacted wax	13	4.8%
Snoring	12	4.5%
Recurrent epistaxis	8	3.0%
Tinnitus	8	3.0%
Nasal obstruction	7	2.6%
Otalgia	6	2.2%
DNS	5	1.9%
Refractory allergic rhinitis	5	1.9%
Dysphagia	4	1.5%
Horseness	4	1.5%
Vertigo	4	1.5%
chronic sinusitis	3	1.1%
nasal obstruction and difficulty breathing	3	1.1%
Snoring, bad breathing	3	1.1%
Snoring and mouth breathing	3	1.1%
chronic nasal obstruction	2	.7%
Difficulty breathing from the nose	2	.7%
dizziness	2	.7%
dysphagia, neck swelling	2	.7%

ear discomfort and decreased hearing	2	.7%
epistaxis	2	.7%
hearing loss, vertigo	2	.7%
missed appointment with ENT and asking for a referral	2	.7%
OSA	2	.7%
otalgia and hearing loss	2	.7%
Snoring, nasal obstruction	2	.7%
Vertigo, tinnitus	2	.7%
asking for ear-piercing	1	.4%
asymptomatic thyroid swelling	1	.4%
Bilateral chronic tinnitus	1	.4%
bilateral hearing loss for 1 month	1	.4%
Bilateral otalgia and left otorrhea	1	.4%
bilateral tinnitus	1	.4%
bilateral tinnitus and hearing loss	1	.4%
bilateral tinnitus for 2 years	1	.4%
blocked nose, rhinitis, nose injury	1	.4%
breathing difficulty, chronic nasal congestion	1	.4%
change of tongue texture	1	.4%
choking, snoring	1	.4%
chronic ear pain, ear discharge	1	.4%
chronic epistaxis	1	.4%
chronic halitosis	1	.4%
chronic Rhinorrhea, nasal congestion	1	.4%
chronic snoring and epistaxis	1	.4%
chronic suppurative otitis media	1	.4%
chronic tinnitus	1	.4%
chronic tinnitus of the left ear	1	.4%
decrease hearing after old trauma	1	.4%
decrease hearing in the left ear	1	.4%
Decrease hearing in the left ear	1	.4%
decrease hearing in the right ear	1	.4%
Decrease hearing in the right ear	1	.4%
Delayed speech	1	.4%
dysphagia, dysphonia, throat pain	1	.4%
dysphagia, ear pain	1	.4%
dysphagia and dyspnea	1	.4%
ear bleeding	1	.4%
ear blockage	1	.4%
ear discharge	1	.4%
ear discharge, tinnitus, hearing loss	1	.4%
ear discomfort, tinnitus and hearing loss	1	.4%
ear itching and discomfort	1	.4%

ear pain, ear discharge, itching	1	.4%
ear pain, discharge	1	.4%
ear pain, hearing loss	1	.4%
ear pain, impacted wax	1	.4%
ear pain, wax impacted	1	.4%
ear tinnitus and hearing loss	1	.4%
ear wax, hearing loss	1	.4%
epistaxis, DNS	1	.4%
epistaxis since 2 months	1	.4%
excessive salivation	1	.4%
Fever, vomiting and throat pain	1	.4%
hearing aids not working	1	.4%
hearing loss, ear pain, tinnitus	1	.4%
hearing loss, ear painful	1	.4%
hearing loss, ear pain, tinnitus	1	.4%
hearing loss, tinnitus	1	.4%
hearing loss, tinnitus, ear pain	1	.4%
Hearing loss after trauma	1	.4%
Hoarseness for 2 months	1	.4%
hoarseness since 6 months after being in mechanical ventilation	1	.4%
Implanted device, asking for a referral	1	.4%
left ear chronic tinnitus	1	.4%
loss of smell after COVID for 1 year	1	.4%
mouth breathing, nasal obstruction	1	.4%
mouth breathing and SOB during sleeping	1	.4%
Nasal blockage and rhinorrhea	1	.4%
nasal blockage and snoring	1	.4%
nasal deviation after old trauma	1	.4%
nasal deviation after old trauma and sneezing	1	.4%
nasal discharge and pain for 1 month	1	.4%
nasal hemangioma	1	.4%
nasal obstruction after old RTA	1	.4%
nasal obstruction after old trauma	1	.4%
nasal obstruction and deviation after trauma for a long time	1	.4%
nasal obstruction and recurrent epistaxis after trauma for 1 year	1	.4%
nasal obstruction and rhinorrhea	1	.4%
nasal obstruction and snoring	1	.4%
nasal obstruction, snoring and difficulty breathing	1	.4%
nasal obstruction, snoring and difficulty feeding since birth	1	.4%
nasal obstruction, snoring and mouth breathing	1	.4%
nasal polyp, nasal blockage	1	.4%
nasal polyps	1	.4%
otalgia	1	.4%

Otalgia and hearing loss	1	.4%
otalgia and vertigo related to the position	1	.4%
otalgia for 1 month	1	.4%
otalgia, otorrhea and hearing loss for 1 month	1	.4%
otorrhea and hearing loss	1	.4%
otorrhea and otalgia in the left ear for 4 years	1	.4%
otosclerosis	1	.4%
Persistent otorrhea	1	.4%
polyposis	1	.4%
Recurrent nasal obstruction	1	.4%
recurrent otitis media	1	.4%
Small ear	1	.4%
Sneezing, shortness of breathing	1	.4%
Sneezing and obstruction	1	.4%
Snoring and chocking	1	.4%
Snoring and intermittent rhinorrhea	1	.4%
Snoring and OSA	1	.4%
Snoring and recurrent tonsillitis	1	.4%
throat pain	1	.4%
thyroid enlargement	1	.4%
Tinnitus, bilateral hearing loss	1	.4%
Tinnitus, hearing loss	1	.4%
tonsillar exudate, horseness	1	.4%
Vertigo with changing head position	1	.4%
Vertigo, left otalgia, Hearing loss	1	.4%
Vertigo, tinnitus and hearing loss	1	.4%

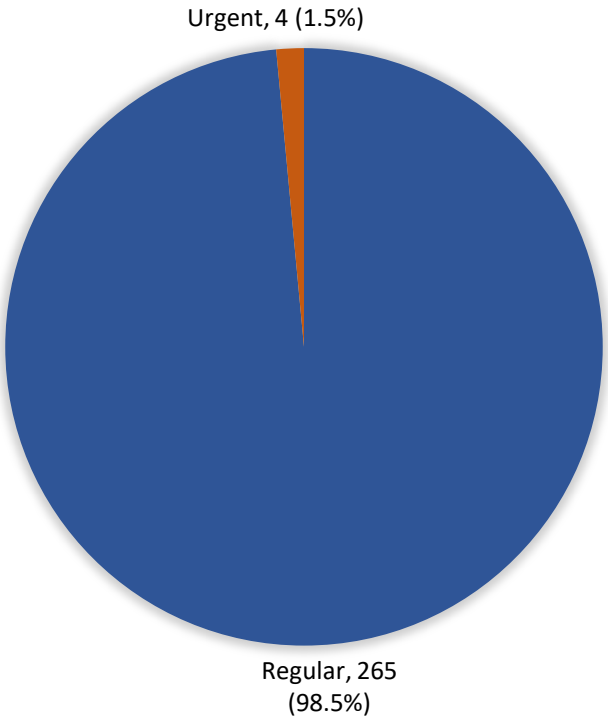

Figure 2. Type of referral among study patients to ENT clinics in King Abdulaziz Hospital, Alhasa

Table 3. Factors associated with the type of referral among study patients

Factors	Type of referral				p-value
	Regular		Urgent		
	No	%	No	%	
Age in years					
< 10	69	94.5%	4	5.5%	
10-29	69	100.0%	0	0.0%	.012*$
30-39	51	100.0%	0	0.0%	
40+	76	100.0%	0	0.0%	
Gender					
Male	146	98.6%	2	1.4%	.839
Female	119	98.3%	2	1.7%	
Chronic medical condition					
Yes	78	98.7%	1	1.3%	.847
No	187	98.4%	3	1.6%	

P: Pearson X^2 test $: Exact probability test
* P < 0.05 (significant)

Discussion

Physicians play a crucial role in determining the quality and cost of patient care by making referral decisions (8, 9). It has been observed that there are significant differences in the referral rates of individual physicians while treating patients with similar medical conditions (10). This implies that there is a significant variation in the referral threshold among physicians. Physicians not only decide whether to refer a patient but also determine which specialists a patient sees (11, 12). Difficulties may develop in the referral process if the primary care physician neglects to adequately articulate the rationale for referral or furnishes insufficient or unsuitable information. In a similar vein, it is possible for the expert to overlook the referring physician's rationale for the referral or neglect to effectively convey their results back to the referring physician (13, 14).

The current study aimed to assess the prevalence of referral from the family medicine department to ENT clinics in King Abdulaziz Hospital, Alhasa, compared to other speciality clinics. The study showed that more than half of the ENT referred cases were males at a young age (below the age of 30 years). Most of the referred cases were healthy, but the most reported co-morbidities included DLP, HTN, DM, and obesity. Similar findings were reported by Bhaga HJ (16) as the mean of 26.9 years and predominantly female (in contrast to the current study). Most patients were unemployed. The majority of referrals were from general doctors at primary health care centers. There was an even distribution of urgent and non-urgent referrals, most being non-malignant. Most of the cases were appropriately referred. A foreign body in the ear was the commonest diagnosis, followed by sensorineural hearing loss and recurrent tonsillitis. Another study was done in Uttar Pradesh (UP), in which the most common presenting age group was between 21 and 30 years old (17). In South Africa, 28.6% of the population is younger than 15 years (18). Gauteng has the highest percentage of people over 60 years, at 24.1%. This percentage correlates with the finding that most of our patients were adults.

Regarding the presenting symptoms in family medicine clinics among study patients, the most reported hearing loss, snoring and mouth breathing, recurrent tonsillitis, impacted wax, and recurrent epistaxis and tinnitus. According to Bhaga HJ (16), the most frequent presenting condition in the adult population was chronic suppurative otitis media (5%), then Laryngopharyngeal reflux disease (4.5%). The prevalence of CSOM is consistent with data published in other low and middle-income countries such as Pakistan (19, 20). On the other hand, developed countries revealed the rate is less than 1% (21). CSOM is an important cause of acquired hearing loss. Hearing loss leads to poor communication and poorer quality of life in adults. The complications of CSOM also add to the burden of disease (14). A study by Ayotunde (22) also reported foreign bodies in pediatric patients to be one of the most common causes of referral at 9.9%. In the Dey study, (23) otitis media was found to be a common cause of referral in children, followed by CSOM (12.2%).

As for the type of referral, nearly all cases were regularly referred as all cases were cold cases with no associated co-morbidities. Referral type was significantly associated with patients' ages, but no gender differences regarding the type of referral were reported. Bhaga HJ's (16) study showed that inappropriate referrals were only 7%. Many studies found that about 31% of their referrals were inappropriate, which dropped to below 10% after modification interventions (24, 25). In Saudi Arabia, in May 2002, a project was initiated to review and audit all referrals made to the emergency room (ER) and speciality clinics of a hospital by the department's physicians. The study retrospectively examines the pattern of referrals from primary care physicians to specialists to determine the impact of clinical audits. The study includes about 140,000 patient visits over the course of seven months in the Department of Primary Care and Emergency Medicine, which serves approximately 120,000 people. The findings indicate that the referral rate is higher for surgery, ophthalmology, obstetrics and gynaecology, whereas it is lower for cardiology and psychiatry. The study also found that the ENT referral rate was similar to that of other studies (5).

Conclusion:

There is a high prevalence of regular referrals to ENT clinics in King Abdulaziz Hospital by 2022. Patient age was the only significant factor associated with the type of referral. It would be beneficial to evaluate patient preferences and clinical outcomes in future research.

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