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Patterns of Ear Disease in Upazila Health Complex Outpatient Department, Boalkhali, Chattogram

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Abstract

Background: Ear diseases are a significant public health concern in Bangladesh, affecting individuals of all ages and socioeconomic backgrounds. The burden of ear diseases significantly impacts the quality of life of affected individuals, leading to hearing impairment, communication difficulties, and reduced social and economic opportunities. To assess the pattern of ear diseases among the patients attending Outpatient Department (OPD) of Boalkhali Upazila Health Complex, Chattogram.

Materials and methods: A cross-sectional type of observational study was carried out at ENT Outpatient Department (OPD) of Boalkhali Upazila Health Complex, Chattogram in between June 2015 to January 2019. In this study 2142 patients were identified with ear diseases after screening of 5100 patients attending at ENT OPD.

Results: 42.8% patients were diagnosed after screening the 5100 patients at ENT OPD where male female ratio was 1:1.2. Most of the patients (32.6%) were from the age group in between 0-18 years of age and a minimum of 9.2% patients were above 60 years old. Mostly identified diseases were CSOM (11.7%), otalgia (9.7%), AOM (7.3%), ASOM (6.8%), impacted wax (5.5%) and tinnitus (5.5%). But only a few of 0.6% were diagnosed as squamous cell carcinoma. Among the 15 common clinical conditions in this study, it was found that female patients were predominant in all cases except in impacted was, foreign body in ear and furunculosis.

Conclusion: This study highlights the need for further research and action to address the burden of ear diseases in Bangladesh and improve the ear care outcomes for its population.

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Introduction

Over 430 million people need rehabilitation for hearing loss that is deemed "disabling" when it exceeds 35 decibels (dB) in the ear with better hearing. The number of individuals with debilitating hearing loss is 432 million adults and 34 million children, and almost 80% of them live in low- and middle-income countries. As hearing loss gets more prevalent as people get older, more than 25% of adults over the age of 60 have a hearing loss that is incapacitating. One in ten people, or more than 700 million people, may have a debilitating hearing loss by the year 2050, according to projections.[1]

Particularly in low- and middle-income countries, hearing loss both causes and contributes to poverty.[2] Hearing loss is the second most common kind of disability in Bangladesh, according to official estimates, with connections to the economy, society, education and job market. Genetics, some maternal diseases during pregnancy, other illnesses, ototoxic medications, prolonged exposure to loud noises, and aging are only a few of the factors that might cause hearing loss.[3]

7.9% of Bangladeshis have a hearing impairment (in the ear with superior hearing), according to small-scale research conducted for the WHO in 2002.[4] The World Health Organization claims that a sizable amount of the world's illness burden is caused by ear conditions. According to WHO, ear diseases are predicted to comprise 10% of the population in Bangladesh, with a higher frequency in rural areas.[5] A study from Bangladesh revealed that 33% of people suffering from some sort of hearing damage in one or both ears, with 35% of those persons living in rural regions and 29% in urban areas.[6]

The majority of the population in Bangladesh lives in rural areas and the lack of specialist and diagnostic facilities has resulted in a lack of proper treatment for ear-related problems, leading

to various issues such as cosmetically, social, educational, and vocational problems, especially hearing impairment.This is crucial since hearing loss is the second most prevalent kind of disability in Bangladesh and has a considerable negative impact on children's education, development, and health.[7]

To avoid ear conditions, hearing loss, and deafness, a national program will be necessary. The primary objective in the early years should be the prevention of ear infections, along with early detection, early intervention, and management of ear illnesses, with a special focus on upper respiratory infections in children.[7] As a result, developing and implementing efficient solutions to address ear-related issues in Bangladesh is urgently needed, especially in rural regions where the majority of the population resides. In Bangladesh, the Upazila Health Complex Outpatient Department (OPD) is often the first point of contact for patients seeking treatment for ear diseases.

The WHO-PDH program is focusing on a number of issues connected to hearing impairment, including noise-induced hearing loss, trauma, chronic otitis media, ototoxicity, genetic and congenital causes, and assuring access to appropriate hearing aid services. The organization has also created a common Ear Disease Assessment Protocol to aid nations in quickly conducting national surveys. In Bangladesh's Upazila to district-level hospitals, there are still not enough qualified medical personnel and adequate testing facilities for ear and hearing care. Additionally, there are not enough resources for ear disease screening, diagnosis, and management at the primary and secondary levels of care.However, a few research has been done on the efficiency of the ear condition treatment offered at the Upazila Health Complex OPD. Because of this, aims of this study is to evaluate the distribution of ear illnesses and the standard of care given for these conditions at the Upazila Health Complex OPD in Bangladesh.

Materials and methods

This cross-sectional type of observational study was carried out at ENT Outpatient Department (OPD) of Boalkhali Upazila Health Complex, Chattogram in between June 2015 to January 2019. In this study 2142 patients were identified with ear diseases after screening of 5100 patients attending at ENT OPD. All the patients were examined by otolaryngologist and made clinical and audiological tests to reach final diagnosis. The data were tabulated and analyzed to make further results by statistical procedures. Necessary permission was taken from the proper authorities.

Results

Total 5100 patients were screened out in ENT Outpatient Department of Boalkhali Upazila Health Complex, Chattogram in between June 2015 to January 2019.

Table I Distribution of cases according to nature

Disease □	Number □	Percentage
Ear disease □	2142 □	42.8%
Non Ear disease □	2858 □	57.2%
Total □	5100 □	100.0%

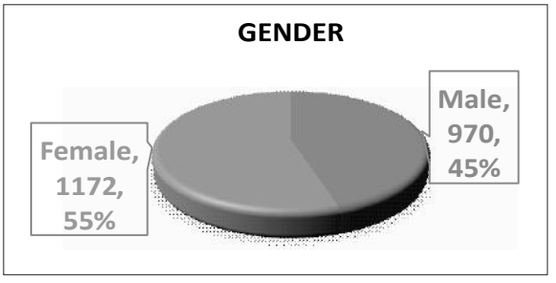

Figure 1 Distribution of cases according to the gender

Maximum 32.6% patients were from the age group in between 0-18 years of age and a minimum of 9.2% patients were above 60 years old. Different age group in between 19-60 years comprises almost same percentage of patients (Table II).

Table II Distribution of cases according to the age

Disease □	Number □	Percentage
0-18 years □	698 □	32.6%
19-30 years □	328 □	15.3%
31-40 years □	284 □	13.3%
41-50 years □	322 □	15.0%
51-60 years □	312 □	14.6%
> 60 years □	198 □	9.2%
Total □	2142 □	100.0%

Almost 27 ear diseases were identified and among them11.7% patients were diagnosed with CSOM, 9.3% otalgia, 7.3% AOM, 6.8% ASOM, 5.5% were impacted wax and tinnitus but only a few of 0.6% were diagnosed as squamous cell carcinoma and 0.7% post auricular sinus (Table III).

Table III Distribution of cases according to the clinical conditions Clinical Conditions

	Number	Percentage
AOM	156	7.3%
ASOM	146	6.8%
OME	69	3.2%
CSOM	250	11.7%
Otalgia	199	9.3%
Furunculosis	77	3.6%
Otomycosis	66	3.1%
Malignant otitis externa	28	1.3%
Impacted wax	117	5.5%
Perichondritis	60	2.8%
Hematoma of auricle	61	2.8%
Foreign body in ear	107	5.0%
Otosclerosis	64	3.0%
Tinnitus	118	5.5%
Trauma in ear	83	3.9%
Keloid of auricle	77	3.6%
Pre auricular sinus	39	1.8%
Post auricular sinus	16	0.7%
Congenital ear deformity	29	1.4%
Congenital deafness	43	2.0%
Hearing loss	67	3.1%
Presbycusis	24	1.1%
Vertigo	110	5.1%
Aural polyp	73	3.4%
Squamous cell carcinoma	13	0.6%
Eustachian tube dysfunction	50	2.3%
Total	2142	100.0%

Table IV Distribution of cases according to gender and age

Clinical Conditions	Gender (%)		`Age group (%)					
	Male	Female	0-18	19-30	31-40	41-50	51-60	Above 60
AOM	45.7	54.3	39.2	10.1	13.1	15.1	16.6	6.0
ASOM	47.6	52.4	39.4	12.4	11.2	15.9	12.4	8.8
OME	42.9	57.1	37.8	16.7	14.1	16.7	11.5	3.2
CSOM	44.4	55.6	36.4	13.6	11.6	16.4	13.2	8.8
Otalgia	45.3	54.7	53.8	14.5	7.7	7.7	9.4	6.8
Furunculosis	55.5	44.5	2.7	9.1	15.5	27.3	27.3	18.2
Impacted wax	59.8	40.2	52.3	15.9	4.7	11.2	8.4	7.5
Foreign body in ear	61.4	38.6	32.5	24.1	15.7	9.6	12.0	6.0
Tinnitus	37.5	62.5	30.0	16.3	12.5	17.5	15.0	8.8
Trauma in ear	42.9	57.1	31.2	15.6	11.7	23.4	18.2	0.0
Keloid of auricle	19.5	80.5	41.6	22.1	18.2	15.6	2.6	0.0
Hearing loss	43.8	56.2	11.0	17.8	19.2	23.3	12.3	16.4
Vertigo	34.8	65.2	43.5	15.9	17.4	11.6	8.7	2.9
Aural polyp	41.8	58.2	10.4	14.9	9.0	13.4	26.9	25.4
Otomycosis	36.4	63.6	18.2	24.2	13.6	16.7	15.2	12.1

Among the 15 common clinical conditions in this study, it was found that female patients were predominant in all cases except in impacted was, foreign body in ear and furunculosis. Most of the patients of differentclinical conditions were from 0-18 years age group but maximum 13.2% CSOM were from 51-60 years of age group, 54.6% furunculosis were from 41-60 years, 23.3% hearing loss were from 41-50 years and 26.9% aural polyp patients were from 51-60 years of age group (Table IV).

Discussion

This study intends to assess the patterns of ear problems' prevalence among patients at Chattogram's Boalkhali Upazila Health Complex. In poorer countries, ear disorders are a serious public health concern. It is possible to learn more about the prevalence and characteristics of this variety of ear disorders. However, the precise distribution of ear illnesses may differ between hospitals or communities based on the availability of trained specialists and adequate medical facilities. In particular in developing countries where poverty, ignorance, a lack of workers, and other problems with basic health facilities are frequent, understanding these ear conditions can help administrators and policy makers in the community establish strategic plans for the community's health. Many conductive hearing impairment instances can actually be prevented from becoming chronic by early detection and following suitable medical or surgical interventions.

Boalkhali Upazila Health Complex, Chattogram has a dedicated Ear OPD and between June 2015 to January 2019, 2142 patients were identified with ear diseases after screening 5100 patients attending ENT OPD among them 42.8% of patients were diagnosed with different ear diseases.

Female patients outnumbered male patients by a margin of 55:1, with a male-to-female ratio of 1:1.2. This contrasts with two studies conducted in Bangladesh, neither of which found any genderrelated differences to be statistically significant.[8,9] According to a study done at an ear OPD in Nepal, the prevalence of ear diseases decreases with age, which is different from WHO statistics. In our study, a maximum of 32.6% of patients were from the age of 0 to 18 years, and the least of 9.2% of patients were over 60 years old.[10]

Almost 27 ear diseases were identified and among them, most of the patients were diagnosed with

otalgia which is similar to a study result conducted at OPD in Gopalganj.[11] Our study reveals CSOM, AOM, ASOM were the common problem in our study group. The frequency of CSOM has been described by various researchers ranging from 6% to 33.9% these studies were showed in Bangladesh, India, Nepal, and Nigeria. In our study, CSOM was more in females and more in (0-18) years that are similar to various studies.[12-13]

7.3% of respondents were suffering from AOM and AOM was more in adolescents (0-18) years and less in those above 60 years which is similar to a study conducted in Nepal.[14]

Acute Suppurative Otitis Media (ASOM) was found to be 6.8% common in this study, whereas impacted wax and tinnitus were both recorded at 5.5% prevalence. Squamous cell carcinoma in the ear and post auricular sinus were also quite uncommon, with prevalence rates of 0.6% and 0.7%, respectively. Similar studies conducted in diverse populations have revealed variable prevalence rates of ear issues. According to studies conducted in Ethiopia and India, the prevalence of ASOM is 4.4%, compared to 7.4% in India.[15] These variances could be brought on by changes in diagnostic standards, population traits, and healthcare accessibility.

Tinnitus and impacted wax reports matched comparable studies' rates in both categories.

According to a study conducted in the US, the percentage of impacted wax was reported to be 10%, whereas a study done in Turkey discovered that the prevalence of tinnitus was reported to be 9.3%.[16] A number of variables, including aging, exposure to loud noises, and poor ear care, may contribute to the high occurrence of impacted wax and tinnitus.

This study's findings about the low frequency of squamous cell carcinoma in the ear and postauricular sinus are consistent with earlier studies. Squamous cell carcinoma in the ear has an incidence rate of 0.16 per 100,000 people, according to a study done in the United States (2017). While post auricular sinus is a rare congenital abnormality, its prevalence is not well-documented in the literature.

According to the current study, female patients predominated in all but the cases of impacted wax, extraneous particles in the ear and furunculosis. This outcome is consistent with earlier research that found that females were more likely than males to have ear conditions. The cause of the higher prevalence of ear illnesses in females is unknown, however hormonal changes and ear canal structural variations have been proposed as potential causes. The majority of the patients with various clinical disorders in the current study were found to be under the age of 18, which is coincide with findings from other studies.[17] This may be related to the increased risk of childhood ear disorders brought on by upper respiratory tract infections and exposure to environmental variables.[18,19]

Intriguingly, the present study discovered that, at furthermost, 13.2% of CSOM patients remained between the ages of 51 and 60, 54.6% of furunculosis patients were between the ages of 41 and 60, 23.3% of hearing loss patients were between the ages of 41 and 50, and 26.9% of aural polyp patients were between the ages of 51 and 60. These results imply that age has a significant role in the emergence of particular ear disorders.This is in line with earlier research that found hearing loss and CSOM to be more common in older persons.[20-21] To further understand the underlying mechanisms driving these relationships and to create effective prevention and treatment plans for various ear ailments, more research is required.

Limitation

It was a cross sectional and single centred study.

Conclusion

In conclusion, female patients had a higher prevalence of ENT illnesses than male patients. Otalgia and CSOM were the most frequently reported symptoms by nearly all of the patients, followed by AOM. Male patients were more likely than female individuals to have a deviated nasal septum.

Recommendation

More research at the Upazila level must be done to identify regional risk factors. In order to deliver future quality treatment and education, healthcare supervision and medical educators are recommended to evaluate this data. Early detection and prevention of complications depend on patient awareness. Medical healthcare practitioners are essential in educating patients about the value of ENT disease management and early treatment.

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Contribution of authors

HSMH-Conception, design, acquisition of data, drafting & final approval.

SA-Data analysis, interpretation of data, critical revision & final approval.

MHT-Acquisition of data, drafting & final approval.

MUF-Data analysis, interpretation of data, critical revision & final approval.

Disclosure
All the authors declared no competing interest.

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