Original Research Article

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Seasonal trends in oto-rhino-laryngology outpatient clinics in the North Indian state of Punjab: a 3 year pilot study

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ABSTRACT

Background: Otorhinolaryngological disorders are amongst the common reason for seeking medical advice in health care setup. This study was conducted in a tertiary care hospital and medical college in North India. The monthly records of 93438 patients were analysed over a period of 3 years from January 2016 to December 2019. All monthly outpatient visits for ear nose throat (ENT) ailments, in the state with extremes of weather were recorded. No such epidemiological data about the attendance rates of patients to outpatient department (OPD) with respect to changing seasonal patterns is available. The aim of this study was to identify the various trends in the attendance pattern of ENT outpatient clinics with respect to the changes in the seasons.

Methods: The monthly record of 93438 patients attending the general and speciality outpatient clinics of Dayanand Medical College, Ludhiana were studied. The study period was from January 2017 to December 2019).

Results: A total of 93438 patients attended ENT OPD in three years from 2017 to 2019. Male: female ratio as 1.22:190. 1 percent of the patients belonged to 3rd and 4th decade of life, 9.9 percent of the patients were children. Patients from rural background comprised (63.1%) of the total number of patients The summer months of July, September have shown the maximum attendance during the year. The winter months of February and December have shown minimum attendance.

Conclusions: Maximum patient visits were recorded in the month of July and minimum during the winter months of November to February.

Keywords: Otorhinolaryngology, Outpatient, Seasonal pattern

INTRODUCTION

The tertiary health care facilities cater to referral patients and the 'walk in patients' throughout the year. Ailments of the ear nose throat, head and neck, include certain conditions that have acute excruciating episodes necessitating urgent consultation as well as those that have an indolent course interspersed with acute episodes. This holds true for most of the otolaryngology ailments. Thus the most common ailments warranting a visit to a doctor or a health care provider in developing countries are related to ear nose and throat (ENT).^{1,2} Seasonal variations, with

effected logistics and vacations dictate the patient consultations. Unlike other states in India where the weather remains nearly the same throughout the year, the states in the North of India, namely Uttar Pradesh, Haryana, Punjab, Rajasthan, Jammu, Uttarakhand have a marked variation in the temperature thereby effecting the ENT ailments, the logistics and ultimately the clinic attendance. This study was conducted in a tertiary care hospital in Northern India over a period of 3 years to study the effect of seasonal variations on outpatient attendance of patients suffering from various ailments of ear, nose, throat and head and neck region. The aim of the study was

to analyze the ENT routine and special clinic visits during extremes of weather.

METHODS

A retrospective study of the outpatient general and speciality ENT of 3 years from January 2017 to December 2019 was carried out. The study was conducted at Dayanand Medical College, Ludhiana, during the period January 2017 to December 2019. Ludhiana is an industrial state in the North Indian state of Punjab. Our hospital is a tertiary care referral center which caters to patients from various parts of Northern India.

Inclusion criteria

Patients presenting with ailments of ear nose throat and head and neck disorders.

Exclusion criteria

Cross consultations of admitted patients.

The patients were divided into 2 groups- group I: patients presenting to routine ENT OPD and group II: patients presenting to speciality clinics of audiology and speech, rhinology, vertigo and head neck clinic.

Data of patients visiting the routine ENT OPD and the specialized clinics, namely the audiology, vestibular, facial, otology, rhinology, laryngology, speech and head neck clinic was recorded. The monthly records of past 3 years were analyzed for outpatient attendance and evaluated according to the under mentioned aspects: months with the maximum patients, months with the minimum patients, gender predominance in adult patients and gender predominance in paediatric patients.

Statistical analysis

All statistical calculations were done using Statistical Package of Social Sciences (SPSS) 17 version statistical program for Microsoft Windows (SPSS Inc. Released 2008. SPSS statistic for windows, version 17.0, Chicago).

RESULTS

Gender

The male: female ratio was observed as 1.22:1.

Age

90.1 percent of the patients belonged to 3rd and 4th decade of life, 9.9 percent of the patients were children.

Demographics

Patients from rural background comprised (63.1%) of the total number of patients included in the study.

Maximum number of patients

In 2019, the months of July and May had the maximum attendance. In 2018, September and July had maximum patients. In 2017, July and September had maximum patients.

Minimum number of patients

In 2019, the months of November and December had minimum attendance. In 2018, February and August had the minimum number of OPD patients. In 2017, January and February had the minimum number of OPD patients.

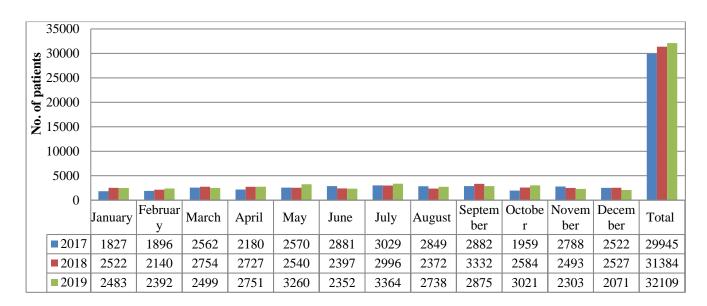


Figure 1: OPD attendance in 3 years.

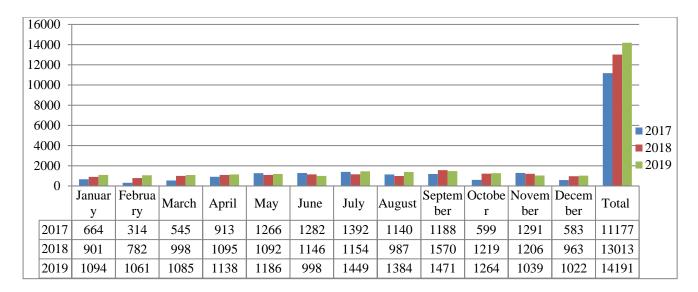


Figure 2: OPD attendance in special clinics.

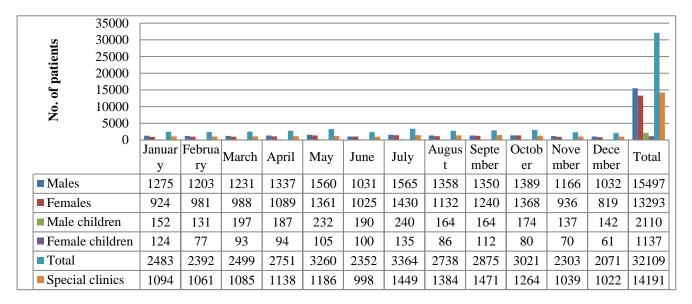


Figure 3: OPD attendance of year 2019.

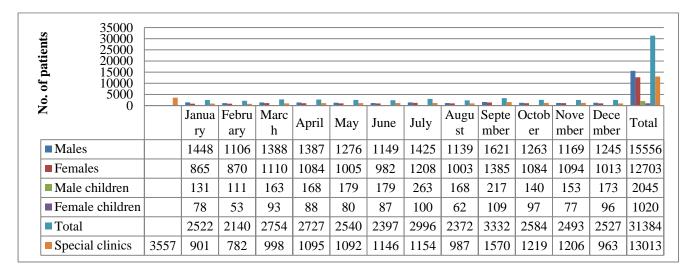


Figure 4: OPD attendance of year 2018.

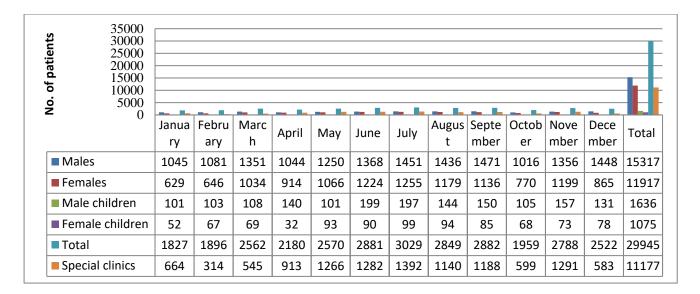


Figure 5: OPD attendance of year 2017.

Yearly census

We have also noted a yearly increase in the ENT routine clinic patients on comparing the census of past 3 years from 2017 to 2019 (Figure 1).

Special clinic data

2019- Maximum number of patients were recorded in July and September and minimum in June, December and November (Figure 3). 2018- Maximum patients were seen in September, October and November and minimum in February, January and December (Figure 4). 2017- Maximum number of patients attended OPD in July, June and May and minimum number in February, March and December (Figure 5).

DISCUSSION

This study was conducted in a tertiary care referral center providing comprehensive care to adult and pediatric patients in Northern India. In our study, a total of 93438 patients attended ENT OPD in three years. Out of these 38381 patients attended special clinics namely rhinology. otology, facial, vertigo, and head and neck clinic. We noted a rural dominated patient population (63.1%), which is explainable by the population statistics of this area. We also found male preponderance in our study, with male: female ratio as 1.22:1, which is again reflection of demographic profile of the region. Similar results have been quoted in other studies. Bleach et al, in a UK based study, reported in their study a male: female ratio of 1.1:1.3 According to a study by Mina et al, the ratio of male: female was 1.13:1.4 It was 1.17:1 in another study conducted Das et al.5

Amongst paediatric population also there was a male predominance with ratio of 1.79:1.

Majority of the patients belonged to 3rd and 4th decade of life, comprising of, adults followed by the 2nd decade of life. Emerson et al observed a predominace of paediatric population.⁶

We noted a yearly increase in the ENT specialty clinic census has been noted, comparing the census of last 3 years from 2017 to 2019. The summer months of July and September have shown the maximum attendance during the year. The winter months of February and December have shown minimum attendance.

The lower attendance to outpatients can be attributed to various factors like festivals, auspicious months, and crop harvest time during the winter months. Since majority of the patients belong to rural background in our study, they are mainly engaged in crop harvest in those months.

The summer months of June and July may witness a peak in routine OPD attendance due to summer vacations in educational institutions and government establishments. Various ENT ailments like epistaxis peak during the summer months due to dry and hot environment.

Singh et al studied the data of various ENT day care surgeries from The Guy's and St. Thomas' NHS Trust and noted an increase in cancellations of day care ENT surgeries during winter months. This significant increase in cancellations during the winter months was related to worsening of the weather, increased transport difficulties. This trend was consistent with another study by Leese et al where they studied ENT outpatient clinic attendance. 8

However, the one limitation in our study was that the records of only one tertiary hospital patients were analyzed. In future, a more comprehensive study can be planned by collecting data from all leading referral hospitals of this region so that population of whole of

Punjab and of Northern region of India is targeted in the study.

CONCLUSION

In this study, all patients who presented to a tertiary hospital in Punjab were studied and the patient peak for ENT OPD consultations was recorded in the month of July and minimum during the winter months of November to February. This study gave an overview of attendance rates during various seasons, thus helping in better preparedness on behalf of the hospitals as well as study the various factors responsible for non-attendance.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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