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Research Article

A Retrospective Epidemiological Study of Hearing Loss in Gims Teaching Hospital, Gulbarga

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ABSTRACT
Introduction: Hearing impairment remains a significant yet overlooked public health issue in developing countries, despite the fact that about half of all instances could be prevented or detected early. The present study is carried out to know the prevalence of hearing loss in the region of Gulbarga district, Karnataka state, India.
Methodology: A retrospective cross-sectional study of hearing impairment was caried out in GIMS teaching hospital, Gulbarga from October 2021 to October 2023. Records of patients visiting ENT OPD with complaints of hearing loss including complete systemic, otological and audiological assessment were compiled and assessed.
Results: In our study, total of 3839 individuals were studied in different age groups, majority of the hearing impairment population (17.8%) belonged to age group of 21-30years. An alarming 86% of the population suffered from bilateral hearing loss, with male preponderance. When comparison was done between conductive, mixed and sensorineural, sensorineural weighed more. A summating 54% of the population was leading a life with disability.
Conclusion: Given the serious health and social consequences of hearing impairment, its prevalence is a cause of concern. Early detection and timely intervention have the potential to ameliorate this burden. Hence, making it important to include audiological assessment in routine health checkup and create awareness among the general public.

Keywords: Ear, Hearing Loss, Deafness, Audiometry.

INTRODUCTION

Helen Keller famously said, 'Blindness cuts us off from things, deafness cuts us off from people." Untreated hearing loss can have profound consequences, including difficulty understanding speech, impaired communication, delayed language development, economic and educational disadvantages, social isolation, and stigma. In children, it interferes with learning. In older people, deafness is linked to cognitive decline, increasing the risk of depression and dementia1. Early screening for hearing loss and early rehabilitation is recommended to reduce the disability caused by hearing impairment[2]

Globally, the World Health Organization (WHO) estimates that 360 million people suffer from disabling hearing loss, with the majority being adults (91%) and a smaller percentage children (9%). Hearing loss ranks as the second most common cause of years lived with disability (YLD), affecting 4.7% of the global YLD.

In Southeast Asia, deafness prevalence ranges from 4.6% to 8.8%, emphasizing its significant impact in the region. In India, 63 million people, or 6.3% of the population, experience significant auditory impairment3. Causes include earwax buildup, aging, middle ear infections such as chronic otitis media, perforated eardrums, and genetic factors.

Despite its widespread impact, hearing impairment remains a neglected health concern in India. The high burden of deafness globally and in India is largely preventable through early intervention and improved healthcare access[4].

Recognizing the urgency, the Government of India launched the National Programme for

Prevention and Control of Deafness in 2006. This initiative aims to prevent avoidable hearing loss, identify and treat ear problems early, and provide rehabilitation for individuals of all ages with hearing impairment[5].

MATERIALS AND METHODS

A retrospective cross-sectional study of hearing impairment was caried out in GIMS teaching hospital, Gulbarga from October 2021 to October 2023. Records of patients visiting ENT OPD with complaints of hearing loss were separated. Respective data pertaining to these individuals were extracted, which included complete systemic, otological and audiological assessment.

Based on earlier studies and available literature, the prevalence of hearing impairment was found to vary from 5% to 17% in different parts of India. All the data available was compiled in excel spreadsheet.

The severity of loss was determined by the PTA using a five-tier classification with normal hearing at less than 20 dB, mild loss at 21 to 40 dB, moderate loss at 41 to 60 dB, severe loss at 61 to 80 dB, and profound loss at greater.

than 80 dB. Hearing Disability Percentage = (Better ear % X 5) + (Poorer ear %) /6 (divided by 6) was applied to designate the percentage of disability.

RESULTS

A total data of 3839 individuals was compiled. Individuals of different age group were included. Maximum number of individuals belonged to age group of 21-30years, 683 i.e., 17.8%; 668(17.4%) in age group of 11-20years; 658(17.1%) in age group of 31-40years; 558(14.5%) in age group of >60years; 507(13.2%) in the age group of 41-50years and 418(10.8%) in the age group of 51-60 years. (Chart 1)

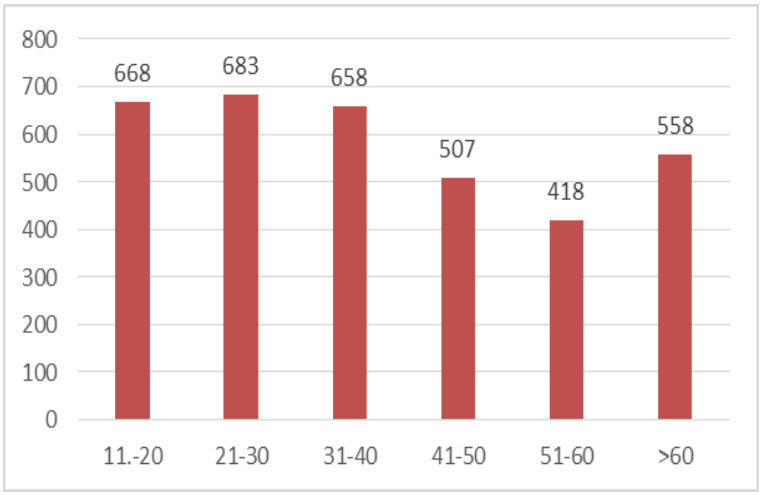

Chart 1: Age-Wise Distribution

Out of total 3839 individuals, 57% were male and 43% were female (Chart 2).

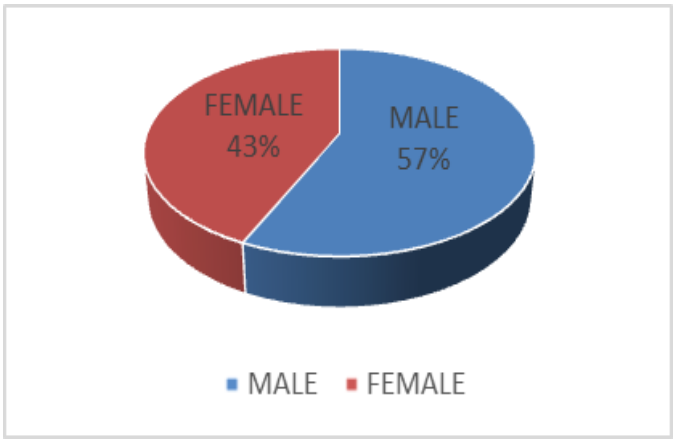

Chart 2: Sex-Wise Distribution

Among the data collected, 3302(86%) individuals suffered from bilateral hearing loss. 307(8%) individuals had only right sided hearing loss and 230(6%) individuals had only left sided hearing loss (Chart 3).

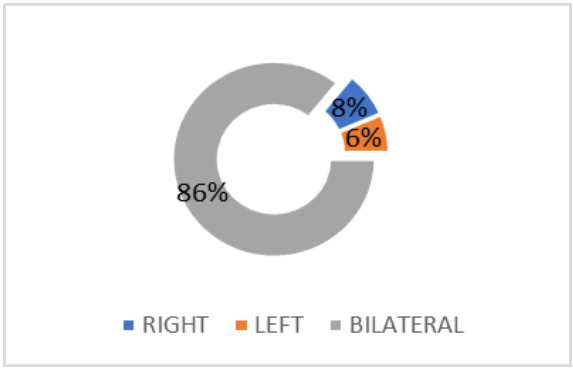

Chart 3: Laterality of the Affected Ear

Out of the population, 1963 suffered from bilateral sensorineural hearing loss, 429 suffered from bilateral conductive hearing loss and 350 suffered from bilateral mixed hearing loss (Chart 4).

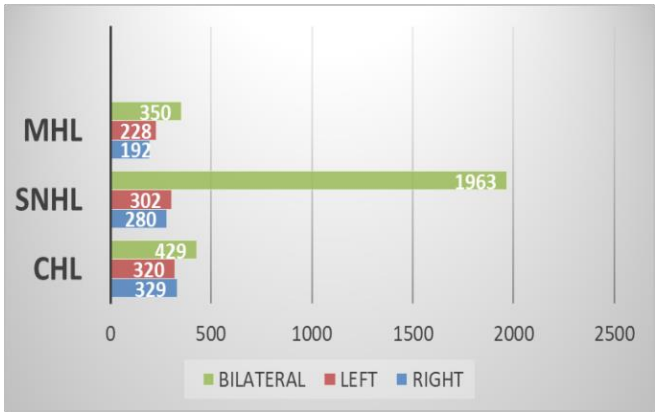

Chart 4: Type of Hearing Loss

Among 3839, 839 had bilateral profound hearing loss, 380 had bilateral moderately severe hearing loss, 338 had bilateral severe hearing loss, 332 suffered from mild hearing loss and 293 had bilateral moderate hearing loss (Chart 5).

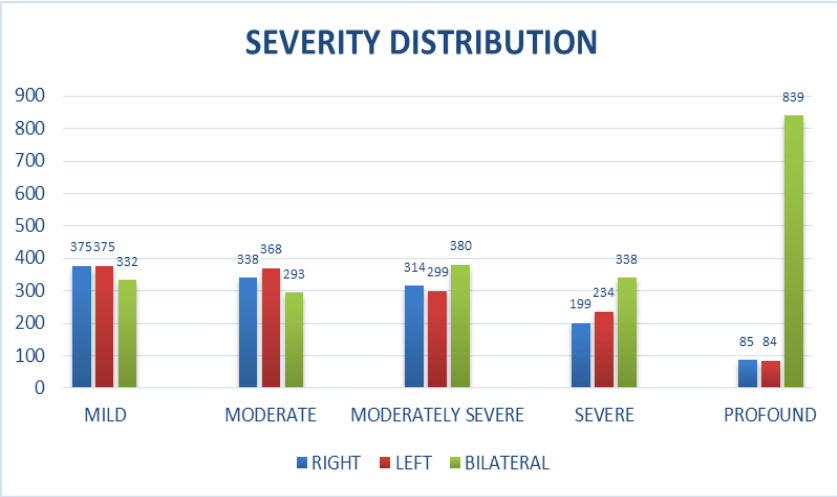

Chart 5: Degree of Hearing Loss

The study showed prevalence of 7.6% among the population visiting our OPD, of which 54% were living with disability (Chart 6).

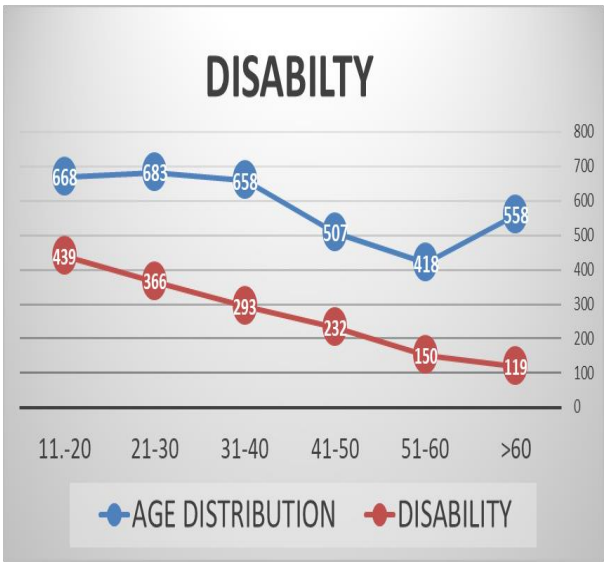

Chart 6: Disability Burden

DISCUSSION

A significant proportion of cases of hearing loss are due to common ear diseases, which if diagnosed early and managed properly can significantly reduce the burden of decreased hearing 2,6-8. In our study, prevalence of hearing loss 7.6%, which was comparable to study conducted by bright et al 5. Five previous surveys of hearing impairment for people of all ages were identified for the South Asia region, one each Bangladesh and Nepal and three in India9-13. Of the studies conducted in India, two were conducted in Lucknow district (Uttar Pradesh state, Northern India) and one in Vellore district (Tamil Nadu state, Southern India)9,10. Of those conducted in Lucknow, the study conducted by Singh et al. 9 found a prevalence of deafness of 19.4% among people of all ages. However, this study used a definition of "deafness" of >15 dB and did not specify the frequencies tested. The second Lucknow study conducted by Mishra et al.10 found a prevalence of hearing impairment 6% using the WHO definition among people aged 6 months and above. The final Indian study, conducted in Vellore District used the same definition as our study and found a prevalence of 5.9% in urban areas and 15.1% in rural areas among individuals aged 6 months and older by Stevens et al.11. In Bangladesh, a study by Tarafder et al.12 conducted in multiple districts found an all-age prevalence of 9.6%, using the WHO definition. Finally, Little et al.13 found an all-age prevalence of 16.6% in Nepal; however, a definition of hearing impairment of thresholds >30 dB HL at 1 to 4 kHz and >50 dB at 0.5 kHz was used. Our findings do agree with global WHO estimates from the South Asia region of 4.6 to 8.8%.

Total of 3839 individuals were studied in different age groups, majority of the hearing impairment population 17.8% belonged to age group 21-30years. In comparison to global estimates studies and also study conducted by Guleria at al8, which report a higher prevalence in males than females, our studied showed male preponderance with 57%. Balasubramanian GK et al study comprises males 64% and females 36%14.

Among the data collected, sensorineural hearing loss overweighed conductive hearing loss, with 1963 individuals suffering from bilateral sensorineural hearing loss, 429 individuals with bilateral conductive hearing loss and 350 individuals with bilateral mixed hearing loss.

According to study conducted by Guleria et al, among individuals with hearing loss, sensorineural hearing loss was present in 70%, conductive hearing loss in 27.5% and mixed hearing loss in 2.5% cases15.

Agrawal Y et al. survey showed results that increase in hearing loss prevalence occurred earlier among participants with smoking, noise exposure and systemic diseases16. According to our study the overall disability burden among the patients visiting GIMS, ENT OPD Gulbarga district was 54%.

The present study focuses on importance of diagnosis of hearing loss. Identifying individuals with hearing loss offers the opportunity to modify their risk of developing consequences prior to development of significant sequelae. Preventing hearing loss remains a challenge but is both feasible and imperative. Close surveillance of burden of hearing loss is critical to projecting its future burden and the resources that will be required for its prevention and control.

CONCLUSION

In the present study overall prevalence of hearing loss among the patients visiting GIMS ENT OPD, Gulbarga was found to be 7.6%. Majority of individuals with hearing loss belonged to age group of 21-30 years, could be due to early identification of loss of function and awareness regarding early detection. Most of the individuals suffered from sensorineural type of hearing loss. Results of this study emphasis the need for early detection and timely intervention, thus, to ameliorate the burden of disease.

Ethical Approval

I declare on my honor that the ethical approval has been exempted by my establishment.

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Conflict of interest

The authors declare having no conflicts of interest for this article.

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