CONDUCTIVE HEARING LOSS CASES TESTED AT THE AIISH

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A conductive hearing loss is one in which effective transmission of sound into the inner ear has met some type of interference at the external canal, tympanic membrane, ossicular chain, middle ear cavity, round window or oval window. Any dysfunction of the outer ear or middle ear in the presence of a normal inner ear is termed a conductive impairment of hearing. Difficulty is not with the perception of sound but with the conduction of sound to the analyzing system. By definition a 'pure' conductive loss result from pathology or mal-functioning of the outer or middle ear with a normal inner ear. This means that a patient with a conductive loss should present an audiogram showing loss by air conduction and normal hearing by bone conduction.

A conductive hearing loss case may present a history of signs and symptoms such as hearing impairment, low-pitched or buzzing tinnitus, vertigo, aural pain, aural discharge or otorrhea, feeling of fullness in the ear, fluctuating hearing loss and good understanding of speech if it is loud enough. It may also be observed that they may speak with very soft voice or/and may hear better in noisy environment than normal hearers.

The present study deals with the pure conductive hearing loss cases tested at the All India Institute of Speech and Hearing, for a period of about 16 years. That is from August 9th of 1965 to March 31st of 1981. During this period, totally 36,982 cases were examined. Out of this 55.07 per cent of the cases were found to have hearing loss.

Each case was given a routine otolaryngological examination; audiological examination was done for all these cases. Standard procedures were used for adults and play audiometry techniques were used for children. In cases of very young children, free-field screening was done. All tests were conducted in sound-treated room using audiometers calibrated to ISO standard.

30.92 per cent of the hearing loss cases are cases of conductive loss of hearing. In this study only 27.86 per cent are purely conductive loss cases. That is 3.06 per cent are cases with conductive loss in one ear and mild sensori-neural or mixed loss in the other ear.

For the purpose of analysis for this paper only bilateral conductive hearing loss and unilateral conductive hearing loss (with other ear having normal hearing) cases are considered. Table 1 presents the details of the conductive hearing loss cases who form the subjects for the present report.

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TABLE 1

Number of cases diagnosed as conductive loss at AllSH

Diagnosis	Total number of Subjects	Percentage
Bilateral conductive hearing loss	3849	21.09
Unilateral conductive hearing loss	1378	6,77
Total	5227	27.86

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The ratio between unilateral and bilateral conductive hearing loss is 1:3.16.

Earlier, the analysis of 1600 cases tested at the All India Institute of Speech and Hearing yielded a ratio of 1:2 between unilateral and bilateral conductive hearing loss (P.S. Subba Rao and Syed Mehaboob, 1970). The observed preponderance of bilateral conductive hearing loss may be due to the fact that patients are more affected in their communicative ability in their social set-up. A unilateral patient may still have good social contact due to his normal hearing in the other ear and may not seek any medical or specialist's attention for his problem.

Table 2 shows distribution of subjects with conductive hearing loss in terms of sex, their percentage and ratio.

TABLE 2

Sex distribution of cases with condutive hearing loss

	Total Cases	Male	Female	Ratio between Female and Male
Bilateral conductive hearing loss	3849	2336	1513	1:1.54
Percentage	21.09%	12.8%	8.29%	
Unilateral conductive loss	1378	974	404	
Percentage	6.77%	4.79%	1.98%	1:2.42
Total	5227	3310	1917	
Percentage	27.86%	17.59%	10.27%	1:1.71

In both the bilateral and unilateral conductive hearing loss, more males than females reported to AIISH. In total a ratio of 1:1.71 exists between females and males. But when considered separately in unilateral conductive hearing loss subjects, the ratio between female and male is more. This may be due to the factor that women are (mostly??) confined to home. The earning demand is less

on them. They may not go for seeking help even if they have problem as they can get along with their daily activities with their one ear's normal hearing.

Age Group

Cases of various age level fall in this conductive loss group. Distribution of cases age-wise is presented in Table 3.

TABLE 3

Conductive hearing loss cases under different age grotips

Age group	Bilat. Cond. Loss		Uni. Cond. Loss	
	Male	Female	Male	Female
0-5	16	8	7	2
5-25	1381	873	475	179
25-40	686	448	367	164
40-60	239	174	121	56
60 and above	14	10	4	3
Total	2336	1513	974	404

Both the conditions bilateral conductive hearing loss as well as unilateral conductive hearing loss are found more common in the age group 5 to 25 years of age. It is observed in male and female population.

The conductive hearing loss population is classified depending on the major etiological factor in the following categories—Otosclerosis, Chronic Suppurative Otitis Media (CSOM), Atresia, Suppurative Otitis Media (SOM) and other, in whose case files no etiological factor is mentioned or if it is questioned.

Table 4 presents the distribution of bilateral conductive hearing loss cases in terms of etiology.

TABLE 4

Bilateral conductive loss cases in terms of etiology

Etiology	Total Subjects	Male	Female
Otosclerosis	820	454	366
CSOM	1429	880	549
SOM	645	417	228
Others	855	S83	372

Chronic suppurative Otitis Media (CSOM) is found more in the age group of 5 to 25 years and otosclerosis more in the age group of 25 to 40 years. More males have been observed in all the types than females.

Table 5 presents the distribution of unilateial conductive hearing loss cases in terms of etiology.

TABLE 5

Etiology	Total Subjects	Male	Female
Otosclerosis	69	34	35
CSOM	467	322	145
Atresia	7	5	2
Others	805	584	221

In unilateral conductive hearing loss cases both otosclerosis and CSOM are more in the age group of 5 to 25. This may be due to the fact that even the otosclerotic cases with bilateral hearing loss who fell in the older age group, might have had hearing loss earlier and reported only later. Because the criteria for age in this report is that age at the time of registration, and not the onset of hearing loss as such. But the unilateral cases reported in total arc much less than the bilateral cases. More males have reported than females.

This is just a self reported case's analysis, no generalized conclusions can be drawn. Depending on the cases tested it may just be reported as follows :

1. Bilateral conductive loss is more common than unilateral conductive loss cases who are identified and diagnosed. P.S. Subba Rao and Syed Mehaboob (1970) have reported a ratio of 1:2 between unilateral and bilateral conductive hearing loss cases in their analysis of conductive loss cases tested at AIISH for a period of about 3 years, that is from August 1965 to July 1968. The present report shows a ratio of 1:3.16.
2. More males than females reported to us with conductive hearing loss. The earlier study of P.S. Subba Rao and Syed Mehaboob obtained a ratio of 2:1, between male and female. The present report shows a ratio of 1.71:1. This change in ratio showing comparatively more females reporting now may be due to the change in attitudes towards seeking help among females or due to the increasing demands on females also owing to increase in the standard and cost of living or due to public education regarding the All India Institute of Speech and Hearing Clinic at Mysore in the course of 13 years, that is from 1968 to 1981.
3. More cases of conductive hearing loss have reported in the age group of 5 to 25 years.

4. CSOM found more common than otpsclerosis and is more in the age group of 5 to 25 years.
5. Otosclerotics are found more in the age group of 25 to 40 years.
6. More male otosclerotics reported than female. The report of P.S. Subba Rao and Syed Mehaboob (1970) also shows that prevalence rate of otosclerosis in males is more than it is among females, as contrary to the internationally accepted view.

REFERENCE

Subba Rao, P.S. and Syed Mehaboob: 'Conductive Loss of Hearing', *Journal of All India Institute of Speech and Hearing,* Vol. 1, pp. 69 to 72, 1970.