

Original Research Article

Situation and Control of Early Hearing Loss among Below Poverty Line People in Southern India

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ABSTRACT

Introduction: Hearing loss is a common problem caused by noise, aging, disease, and heredity. Hearing is a complex sense involving both the ear's ability to detect sounds and brain's ability to interpret those sounds, including the sounds of speech.

The National Sample Survey (NSS) 58th round (2002) surveyed disability both in the urban and rural household and found that hearing disability was the second most common cause of disability after locomotor disability. It has been noted by WHO that half the causes of deafness are preventable and about 30%, through not preventable, are treatable or can be managed with assistive devices.

Aim and Objective: Few studies in the India have used pure-tone audiometer to derive hearing loss estimates. In this paper, BPL patients who attended District Disability and Rehabilitation center (DDRC), BLDE Hospital & Research centre in Vijayapura, Karnataka, were examined to assess the hearing loss prevalence & related determinants by using pure-tone audiometer.

Material and method: Data were collected from 128 BPL patients attended to BLDE Hospital & Research Centre. Primary information was obtained; clinical ENT examination was done by pure-tone audiometer.

Results and conclusion: In this study overall preponderance in male was more than for females. For deaf patients, early diagnosis & treatment is most important. Early management of ear diseases can reduce the Deafness. Health education, improvement of socio-economic status & health facilities will be helpful in reducing the prevalence of deafness.

Keywords: Hearing loss, pure-tone audiometer, below poverty line.

INTRODUCTION

Hearing loss is a common problem caused by noise, aging, disease, and heredity. Hearing is a complex sense involving both the ear's ability to detect sounds and brain's ability to interpret those sounds, including the sounds of speech.

Situation Analysis of Deafness in India

One consequence of Global epidemiological transition is the economic burden associated with chronic diseases is on the rise, especially in low- and middle-

income (LAMI) countries. ^[1] Deafness or hearing loss, one neglected chronic condition is the most common sensory disability. According to the WHO (2005), 278 million people worldwide having disabling hearing impairment, i.e., moderate-to-profound hearing loss in both ears (i.e.>41 dB hearing loss). ^[2] Hearing loss is the second most common cause of years lived with disability (YLD) accounting proportionately high in the

Southeast Asia region with prevalence ranging from 4.6% to 8.8%.^[3]

Using WHO guidelines, the estimated prevalence of hearing impairment in India was 6.3% in 2003.^[4] Earlier, the prevalence of hearing impairment in India was found to be 10.2% in an Indian Council of Medical Research (ICMR) study. They found that severe hearing loss accounted for 24.4% and mild hearing loss for 15.9%. Overall, rural areas showed a higher prevalence of hearing loss compared with urban areas.^[5]

The National Sample Survey (NSS) 58th round (2002) surveyed disability both in the urban and rural household and found that hearing disability was the second most common cause of disability after locomotor disability. Hearing loss accounted for 9% of all disabilities in the urban and 10% in the rural areas. Depending upon the extent of a person's inability to hear properly, the degree of hearing disability was ascertained.^[6]

It has been noted by WHO that half the causes of deafness are preventable and about 30%, through not preventable, are treatable or can be managed with assistive devices. Thus, about 80% of all deafness can be said to be avoidable.^[3]

Aim and Objective

Hearing loss in patients influences the development of communication and behavioral skills. To control the situation, the Government of India initiated the National Programme for Prevention and Control of Deafness (NPPCD) in 2006. The NPPCD was launched with the long-term objective of reducing the total disease burden of hearing impairment and deafness by 25% at the end of the eleventh 5-year plan.^[7] However, there is a still large gap between NPPCD goals and present scenario. There is a severe shortage of small level data of hearing loss in southern India particularly in the backward region of Karnataka state, few studies in the India have used pure-tone audiometer to derive hearing loss estimates. In this paper BPL patients, who attended District Disability

and Rehabilitation center (DDRC), BLDE Hospital & Research centre in Vijayapura, Karnataka, were examined to assess the hearing loss prevalence & related determinants by using pure-tone audiometer.

MATERIALS AND METHODS

This is cross-sectional observational study. Vijayapur is a socio-economically backward district of northern Karnataka in India. Data were collected from 128 BPL patients attended to BLDE Hospital & Research Centre, from 29.07.2015 to 02.12.2015. Primary information was obtained, clinical ENT examination by pure-tone audiometer, SPSS and MS Excel software's were used for analysis.

RESULTS

Table 1 shows, majorly 0-10 years old male (56.2%) were suffering from deafness followed by 11-15 years old males (23.3%), while among females also, a major proportion of deafness was in the 0-10 years (36.4%) followed by 11-15 years (27.4%). Deafness was more serious in early age groups. Overall male preponderance was more than females. There was no significant association between gender and age (p-value 0.129).

Table 2 shows the Audiological assessment of patients by Gender. Among males, majority belonged to moderately severe deafness (67.1%) followed by severe deafness (22%). While among females, more than two third females patients were suffering from moderately severe deafness followed by severe and moderate deafness. The association of gender and Audiological assessment was also not significant (P. values 0.462).

Table 3 shows number of the patients by hearing impairment categories. 62% patients were suffered from > 70 dB hearing loss among whom 60% males and 67% females were suffered from > 70 dB hearing loss. Deafness and gender were not significantly associated (p-value is 0.333).

Table 1: Age distribution of patients by Gender

Age (Years)	Male		Female		Total		P value
	N	%	N	%	N	%	
0-10	41	56.2	20	36.4	61	47.7	0.129
11-15	17	23.3	15	27.3	32	25.0	
16-20	7	9.6	9	16.4	16	12.5	
21-60	8	11.0	11	20.0	19	14.8	
Total	73	100.0	55	100.0	128	100.0	

Table 2: Audiological assessment (Kemker's criteria) of patients by Gender

Audiological Assessment	Male		Female		Total		P value
	N	%	N	%	N	%	
Mild	0	0.0	1	1.8	1	0.8	0.462
Moderate	8	11.0	8	14.5	16	12.5	
Moderately severe	49	67.1	38	69.1	87	68.0	
Severe	16	21.9	8	14.5	24	18.8	
Total	73	100.0	55	100.0	128	100.0	

Table 3: Number of BPL patients by Hearing impairment category

Sex	<70dB		≥70dB		P value
	N	%	N	%	
Male	30	41.1	43	58.9	0.333
Female	18	32.7	37	67.3	
Total	48	37.5	80	62.5	

Figure 1 shows that there is concentration of Hearing impairment patients at early ages. More than 85% deaf people had less than or equal to 20 years of age.

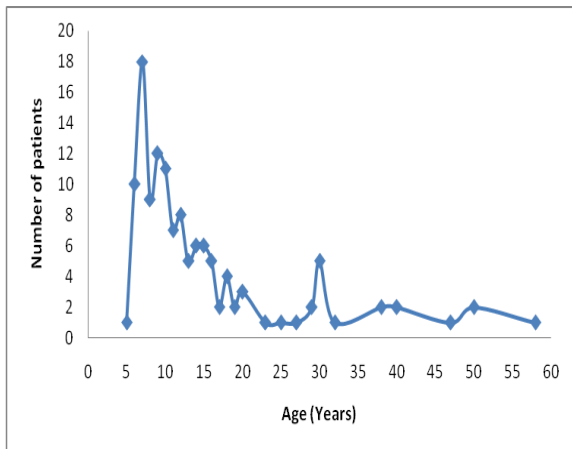


Figure 1: Age of diagnosis of Hearing impairment

DISCUSSION

There is massive impact of deafness on the social, economic and productive life in India. Due to its burden and wide gap in human resources to meet this health challenge, primary health care is the core strategy of choice for the provision and implementation of prevention of deafness and hearing loss in India.

The NPPCD was launched with the long-term objective of reducing the total disease burden of hearing impairment and deafness by 25% at the end of the eleventh

5-year plan. However, there is a still large gap between NPPCD goals and present scenario. The results from this study show that the burden of hearing impairment is still huge and people are not much benefitted by govt. schemes to reduce deafness. Marginalised groups like women and children are at receiving end.

To prepare a micro-plan on an ongoing basis and to operationalize programme components at the district level through coordination between different agencies government, non-government and community members, and a well-equipped district health society and programme committee is required.

Integration of primary ear care with primary and district health systems would provide the most cost-effective solutions. The strategies in the NPPCD may become instrumental if implemented with political will and strong leadership. That can decrease the scale of ear problems and prevent avoidable deafness in India. For the success of the programme, networking and partnerships with different organizations, professionals and personnel would be critical. It is crucial to take firm and positive actions to reduce the burden of deafness in India in the supportive environment facilitated by the NPPCD.

CONCLUSION

In this study overall preponderance in male was more than for females. For deaf patients, early diagnosis & treatment is most important. Early management of ear diseases can reduce the Deafness. Health

education, improvement of socio-economic status & health facilities will be helpful in reducing the prevalence of deafness. It is crucial to take firm and positive actions to reduce the burden of deafness in India in the supportive environment facilitated by the NPPCD.

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REFERENCES

1. Abegunde DO, Mathers CD, Adam T, Ortegón M, Strong K. The burden and costs of chronic diseases in low-income and middle-income countries, *Lancet* 2007; 370:1929-38.
2. World Health Organization. Facts sheet, Deafness and hearing impairment. Available at <http://www.who.int/mediacentre/factsheets/fs300/en/index.html>.
3. World Health Organization. State of hearing and ear care in the South East Asia Region. WHO Regional Office for South-East Asia. WHO-SEARO. SEA/Deaf/9. Available at http://www.searo.who.int/LinkFiles/Publications_HEARING_&_EAR_CARE.pdf
4. World Health Organization. Ear and hearing disorders survey protocol and software package. Available at <http://www.who.int/pdf/deafness/en/protflyer.pdf>.
5. Indian Council of Medical Research Report. Collaborative study on prevention and etiology of hearing impairment. New Delhi: Indian Council of Medical Research; 1983.
6. National Sample Survey Organization. Disabled persons in India, NSS 58th round (July-December 2002) Report no. 485 (58/ 26/1). New Delhi: National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India, 2003.
7. Directorate General of Health Services, *National programme for prevention and control of deafness, Project proposal*. New Delhi: Ministry of Health and Family Welfare; 2006.

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