



The Emotional and Social Impact of Hearing Loss

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Harsh Nawal,¹ Diptanshu Mukherjee,² Shamima Yasmin,³ Saumendra Nath Bandyopadhyay²

ABSTRACT

Introduction

Hearing loss affects not only auditory function but also significantly impacts a person's emotional and social functions. The purpose of this study is to assess the emotional and social handicap in patients presenting with hearing loss.

Materials and Methods

A cross-sectional, observational, descriptive study was conducted among 179 adult patients presenting with hearing loss at the otolaryngology outpatient department of a tertiary care hospital in Eastern India. A structured questionnaire was utilized to collect socio-demographic details and hearing loss characteristics. Pure-tone audiometry (PTA) was performed to determine the degree of hearing loss. The Hearing Handicap Inventory for Adults (HHIA) questionnaire was chosen to assess and quantify the self-reported social and emotional handicap.

Results

The study participants, aged 18 to 80 years (mean age 51.4), included 65.9% employed individuals and 49.2% who were married. Bilateral hearing loss was observed in 38%, while 43% had experienced hearing loss for 10–12 months. Pure Tone Audiometry revealed that 15.6% had mild, 18.4% moderate, 51.5% severe, and 14.5% profound hearing loss. HHIA scores indicated that 74.3% experienced a severe overall handicap, with 72.1% reporting significant social impairment and 76.5% emotional impairment. The social and emotional handicaps were significantly associated with sex, laterality of hearing loss, and symptom duration.

Conclusion

Hearing loss significantly affects both the social and emotional well-being. There is a need for tailored interventions which will address the audiological, social, and emotional needs.

Keywords

Hearing Loss; Deafness; Handicapped

Traditionally defined as ‘a partial or complete inability to detect sounds,’ hearing loss is now recognized as a widespread sensory impairment affecting communication. Recent studies show that, beyond impaired hearing, it also significantly impacts emotional health and social well-being. Hearing loss

significantly affects daily life, often leading to social withdrawal due to embarrassment and communication difficulties. The emotional toll, including loneliness and frustration, frequently outweighs the social limitations.^{1,2,3} Research shows that emotional distress from hearing impairment often surpasses the impact on social interactions.^{4,5}

Hearing loss reduces quality of life, especially for those with profound impairment, and presents challenges beyond what audiometric tests capture.^{6,7} Psychological distress, including insecurity, stress, and anxiety, further discourages social participation, leading to isolation.⁵ Early identification and hearing aids can alleviate these issues,

1 - Final year MBBS Student, Medical College Kolkata
2 - Department of ENT and Head Neck Surgery, Medical College Kolkata, West Bengal
3 - Department of Community Medicine, Medical College Kolkata, West Bengal

Corresponding author:

Dr Shamima Yasmin
email: 2021shamima@gmail.com

but many, especially those with unilateral loss, resist using them. Support and encouragement in adopting these devices, along with emotional guidance, counselling, reassurance are critical for better outcomes.^{3,8,9}

This study aims to assess the emotional and social handicap associated with hearing loss among adult patients attending the ENT OPD of a tertiary care hospital in Eastern India. By examining the prevalence and severity of hearing loss, as well as its impact on emotional and social well-being, this research seeks to contribute to a better understanding of the challenges faced by individuals with hearing loss in this region and to inform the development of targeted interventions.

Materials and Methods

A cross-sectional, observational study was conducted among adult patients attending the Otorhinolaryngology Outpatient Department of tertiary care hospital from April 2024 to July 2024. Participant selection and assessment commenced only after approval from the Institutional Ethics Committee (IEC/NON SPON/2246/03/24). The sample size was 179, with the minimum required sample size calculated using the Cochran formula: $n = (Z^2pq)/L^2$. In this formula, n is the sample size, Z is 1.96 for a 95% confidence interval, p is the prevalence of hearing handicap from a previous study (45.6%),³ and the relative error was set at 15%. The final sample size was rounded to 169, but a total of 179 patients were assessed.

Systematic random sampling was used, with inclusion criteria of age over 18 and hearing loss lasting at least 3 months. Exclusion criteria included refusal to provide consent, hearing loss due to impacted wax, foreign bodies, furuncles, acute infections, known comorbidities, and recent surgery or invasive procedures within the last 3 months. All selected patients were clinically examined, with a thorough history and appropriate diagnostic tests conducted.

Assessment of Hearing Loss

The degree and laterality of hearing loss was inferred based on the pure-tone audiometry (PTA) report. The results were plotted on a standard audiogram to analyze the type and degree of hearing loss. This test is essential for diagnosing hearing impairment and guiding management strategies.¹⁰

Assessment of Social and Emotional Handicap

The self-perceived social and emotional handicap was assessed using the Hearing Handicap Inventory for Adults (HHIA) questionnaire, a reliable tool for evaluating the emotional and social impact of hearing loss. The 25-item questionnaire is divided into two subscales: emotional and social/situational. The emotional subscale addresses feelings related to hearing loss, while the social/situational subscale covers challenges in different listening environments. Scores help quantify the hearing handicap and guide intervention development.¹¹

The researcher individually administered the HHIA, which consists of 25 questions scored on a 0–4-point scale. Total scores, ranging from 0 to 100, categorize hearing handicap from no perceived handicap (0-16) to significant handicap (above 42). The questionnaire was translated and validated in Bengali and Hindi.

Statistical Analysis

The collected data was compiled and statistically analyzed using Microsoft excel. To examine the relationship between hearing handicap and sociodemographic and clinical parameters, Spearman's correlation coefficient was employed. Additionally, the chi-square test was used to assess potential associations between handicap and gender. For all above analyses, statistical significance was set at p value < 0.05 .

The Study was conducted after obtaining approval from the Institutional Ethics Committee and informed written consent. Patient privacy and confidentiality was maintained. Data security was assured.

Results

Table I: Distribution of Study population according to socio-demographic variables and hearing loss related characteristics. (n=179)

VARIABLES		NUMBER	PERCENTAGE
Sex	Female	58	32.4
	Male	121	67.6
	Hindu	115	64.2
	Muslim	61	34.1
	Others	1	.6
Address	Rural	114	63.7
	Urban	65	36.3
Education	Graduate	6	3.4
	Higher Secondary	16	8.9
	Illiterate	51	28.5
	Middle School	44	24.6
	Primary School	48	26.8
	Secondary	14	7.8
Employment	Employed	118	65.9
	Unemployed/Student	61	34.1
Marital status	Married	88	49.2
	Unmarried	91	50.8
Laterality of hearing loss	B/L	68	38.0
	U/L	111	62.0
Duration in months	3-4 months	23	12.8
	4-6 months	49	27.4
	7-9 months	30	16.8
	10-12 months	77	43.0

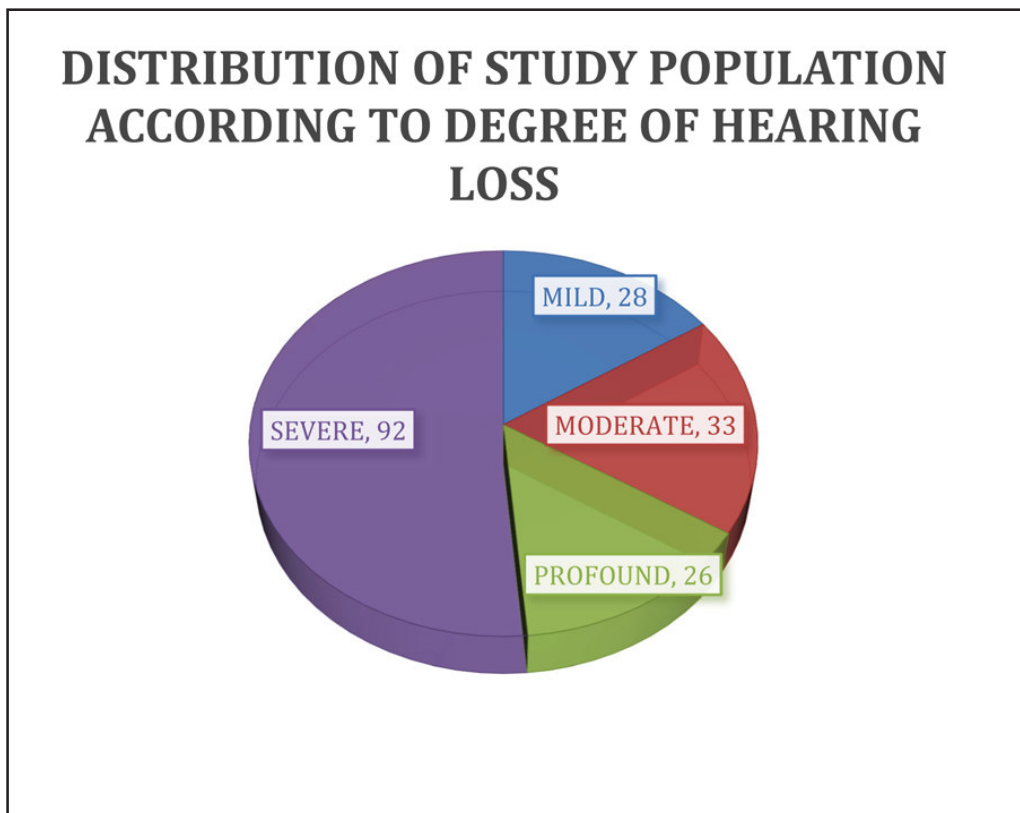


Fig. 1. Distribution of Study Population According to Degree of Hearing Loss (n=179)

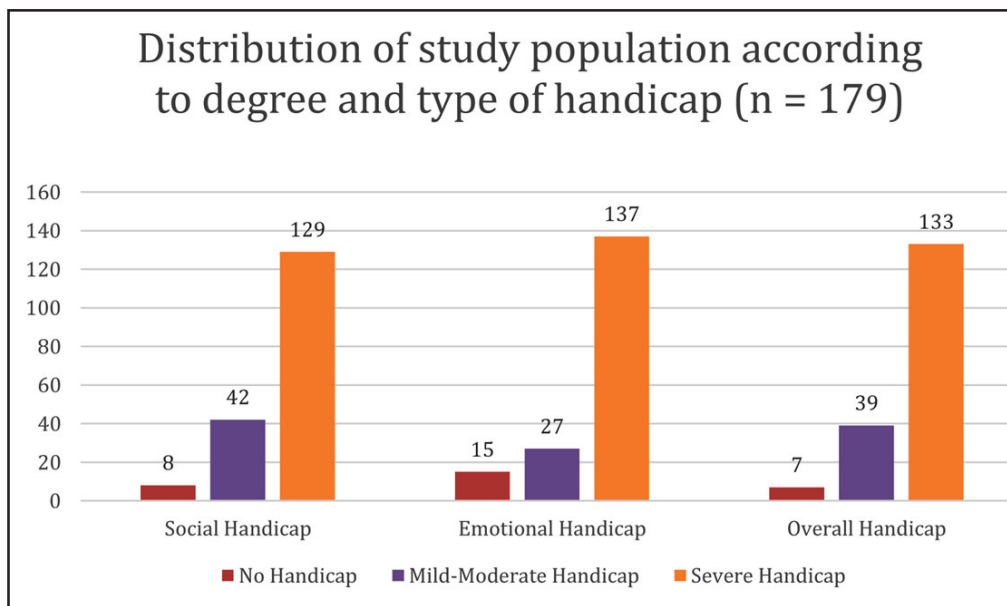


Fig. 2. Distribution of study population according to degree and type of handicap (n = 179)

Table II: Distribution of study population according to degree of social handicap and other variables (n = 179)

VARIABLES		DEGREE OF SOCIAL HANDICAP				CHISQUARE VALUE	P VALUE
		NO HANDICAP	MILD TO MODERATE	SEVERE HANDICAP	TOTAL HANDICAP		
Sex	Male	7 (5.8%)	19 (15.7%)	95 (78.5%)	121 (100.0%)	13.186	<0.05
	Female	1 (12.5%)	23 (39.7%)	34 (58.6%)	58 (100.0%)		
Residence	Urban	1 (1.5%)	13 (20.0%)	51 (78.5%)	65 (100.0%)	3.062	> 0.05
	Rural	7 (6.1%)	29 (25.4%)	78 (68.4%)	114 (100.0%)		
Employment Status	Employed	5 (4.2%)	26 (22.0%)	87 (73.7%)	118 (100.0%)	0.476	> 0.05
	Unemployed	3 (4.9%)	16 (26.2%)	42 (68.9%)	61 (100.0%)		
Laterality Of Hearing Loss	Unilateral	6 (5.4%)	35 (31.5%)	70 (63.1%)	111 (100.0%)	11.97	< 0.05
	Bilateral	2 (2.9%)	7 (10.3%)	59(86.8%)	68(100.0%)		
Duration Of Symptoms	Upto 6 Months	25 (34.7%)	4 (5.6%)	43(59.7%)	72(100.0%)	9.372	<0.05
	6-12 Month	17 (15.9%)	4 (3.7%)	86(80.4%)	107(100.0%)		

Table III: Distribution of study population according to degree of Emotional handicap and other variables (n = 179)

VARIABLES		DEGREE OF SOCIAL HANDICAP				CHISQUARE VALUE	P VALUE
		NO HANDICAP	MILD TO MODERATE	SEVERE HANDICAP	TOTAL HANDICAP		
Sex	Male	Male	6 (5.0%)	12 (9.9%)	103 (85.1%)	15.422	<0.05
	Female	Female	9 (15.5%)	15 (25.9%)	34 (58.6%)		
Residence	Urban	Urban	5 (7.7%)	8 (12.3%)	52 (80.0%)	0.739	> 0.05
	Rural	Rural	10 (8.8%)	19 (16.7%)	85 (74.6%)		
Employment Status	Employed	Employed	9 (7.6%)	17 (14.4%)	92 (78.0%)	0.432	> 0.05
	Unemployed	Unemployed	6 (9.8%)	10 (16.4%)	45 (73.8%)		
Laterality Of Hearing Loss	Unilateral	14 (12.6%)	23 (20.7%)	74 (66.7%)	111 (100.0%)	16.12	< 0.05
	Bilateral	1 (1.5%)	4 (5.9%)	63 (92.6%)	68 (100.0%)		
Duration Of Symptoms	Upto 6 Months	14(19.4%)	8(11.1%)	50(69.4%)	72(100.0%)	3.38	> 0.05
		6-12 Month	13(12.1%)	7(6.5%)	87(81.3%)		

Table IV: Distribution of study population according to degree of overall handicap and other variables (n = 179)

VARIABLES		DEGREE OF SOCIAL HANDICAP				CHISQUARE VALUE	P VALUE
		NO HANDICAP	MILD TO MODERATE	SEVERE HANDICAP	TOTAL HANDICAP		
Sex	Male	4 (3.3%)	16 (13.2%)	101 (83.5%)	121 (100.0%)	17.147	<0.05
	Female	3 (5.2%)	23 (39.7%)	32 (55.2%)	58 (100.0%)		
Residence	Urban	2 (3.1%)	13 (20.0%)	50 (76.9%)	65 (100.0%)	0.425	> 0.05
	Rural	5 (4.4%)	26 (22.8%)	83 (72.8%)	114 (100.0%)		
Employment Status	Employed	4 (3.4%)	26 (22.0%)	88 (74.6%)	118 (100.0%)	0.253	> 0.05
	Unemployed	3 (4.9%)	13 (21.3%)	45 (73.8%)	61 (100.0%)		
Laterality Of Hearing Loss	Unilateral	6 (5.4%)	34 (30.6%)	71 (64.0%)	111 (100.0%)	16.359	< 0.05
	Bilateral	1 (1.5%)	5 (7.4%)	62 (91.2%)	68 (100.0%)		
Duration Of Symptoms	Upto 6 Months	5 (6.9%)	19 (26.4%)	48 (66.7%)	72 (100.0%)	4.950	>0.05
	6-12 Month	2 (1.9%)	20 (18.7%)	85 (79.4%)	107 (100.0%)		

A total of 179 patients, aged 18 to 80 years (mean age 51.44 ± 19.12 , median 52.0), were included in the study. The demographic and hearing loss characteristics are detailed in Table I. Of the participants, 67.6% (121 out of 179) were male, only 3.4% were graduates, and 28.5% were illiterate. Employment was reported by 65.9%, and 49.2% were married. Bilateral hearing loss was present in 38.0% (68 out of 179), while 62.0% (111 out of 179) had unilateral hearing loss. Furthermore, 43% of participants had experienced hearing loss for 10 to 12 months.

Figure 1 illustrates the severity of hearing loss, categorized according to WHO classification, with audiometric thresholds measured at 500, 1000, 2000, and 4000 Hz. Hearing loss was classified as slight impairment (26 to 40 dB), moderate (41 to 60 dB), severe (61 to 80 dB), and profound (greater than 81 dB).¹²

Regarding audiological findings, 15.6% had mild hearing loss, 18.4% moderate, 51.5% severe, and 14.5% profound, as per Pure Tone Audiometry reports. Figure 2 depicts the classification of HHIA scores into “no handicap” (0–16), “mild to moderate handicap” (18–42), and “severe handicap.”

In terms of overall handicap, 3.9% reported no handicap, 21.8% had mild to moderate handicap, and 74.3% had severe handicap. For social handicap, 72.1% reported significant impairment, 23.5% had mild to moderate impairment, and 4.5% had no handicap. Emotional handicap scores revealed that 76.5% had significant impairment, 15.1% had mild to moderate impairment, and 8.4% reported no handicap.

Tables II, III, and IV show the relationships between social, emotional, and overall handicaps with socio-demographic and hearing loss characteristics. Significant associations were found between the degree of social, emotional, and overall handicap and factors such as sex, laterality of hearing loss, and symptom duration.

Discussion

Developed in 1982 by Ventry and Weinstein, the Hearing Handicap Inventory for the Elderly (HHIE) consists of 25

questions and was one of the first tools designed to assess self-perceived hearing handicap in older adults, incorporating social and emotional components.¹³ In 1990, Newman et al. modified three questions from the HHIE to create the Hearing Handicap Inventory for Adults (HHIA), making it more suitable for younger individuals.¹³

The HHIA has been widely utilized in studies involving patients with both unilateral and bilateral hearing loss.^{7, 11, 14, 15} However, some authors^{14, 15} have found this questionnaire inadequate for assessing the handicaps experienced by patients with unilateral sensorineural hearing loss (USNHL). They argue that the HHIA contains very few questions specific to unilateral hearing loss and have added additional questions^{14, 15, 16} to capture a more accurate representation of the handicap faced by these patients. Some studies have exclusively employed this tool on patients with USNHL.^{3, 17}

Our study included participants aged 18 to 80, with both bilateral and unilateral deafness lasting more than 3 months. The results align with findings from various studies. For instance, a study by R. Sood among the Himalayan population¹⁷ reported an overall mean score of 52.21 (SD 25.20, median 56). The social scale mean was 26.21 (SD 12.65, median 26), while the emotional scale mean was 25.97 (SD 13.82, median 26). In contrast, our study yielded an overall mean score of 65.98 (SD 24.9, median 78.00), with a social scale mean of 31.84 (SD 12.27, median 36.00) and emotional scores averaging 34.13 (SD 13.998, median 40.00).

In terms of overall handicap 21.8% of participants fell within mild – moderate category while 74.3% were categorized as significant, and the remaining participants reported in no handicap zone. For social handicap 23.5% were in the mild- moderate range and 72.1% experienced significant impairment. In the emotional handicap category, 15.1% were mild to moderate, while 76.5% reported significant impairment. A similar study conducted in South India³ assessed psychosocial and auditory handicaps in patients with USNHL, revealing that 54.4% showed no handicap, 30.4% had mild to moderate

handicap, and 15.2% had a severe handicap. This study also found that the mean emotional subscale score was significantly higher than the mean social subscale score. They did not observe any influence of age, sex, education, occupation, income, side of hearing loss, or duration of hearing loss on their findings. Even the study on Indian population of North India¹⁷ no significant correlation of degree of handicap with age, duration, and degree of hearing loss.

Conversely, our study demonstrated a significant association between the degree of social, emotional, and overall handicap with factors such as sex, laterality of hearing loss, and duration of symptoms. Some research indicates that more educated and employed individuals may experience a higher degree of handicap due to greater social demands and interactions; however, our findings revealed no significant difference in emotional and social handicap (see Tables II and III). This may be attributed to the lower educational status and rural background of most participants. (Table I)

In the study by Dalton DS,¹⁸ it was seen 28% had mild, 24% had moderate to severe hearing loss. Severity of hearing loss was significantly associated with having a hearing handicap and with self-reported communication difficulties. Individuals with moderate to severe hearing loss experienced reduced quality of life, particularly in both physical and mental health components. In our study participants had hearing loss in the category 15.6% mild, 18.4% moderate, 51.5% severe, and 14.5% were in the profound hearing loss range. Although in our study we have not measured quality of life but the proportion of emotional, social, and overall severe handicap necessitates further study to measure quality of life in these population.

Another study by Nuesse T,¹⁹ it was reported that Pure-tone hearing loss was the strongest predictor, accounting for 29% of variance in HHIE/A scores. Additional factors like frailty, mental health, and willingness to use hearing aids also significantly influenced self-perceived handicap. Thus, our study supports the conclusion²⁰ that hearing impairment negatively impacts well-being and is a major contributor to years lived with disability.

Conclusion

This study highlights the significant social and emotional challenges faced by individuals with hearing loss, revealing that a substantial proportion experience severe handicaps in both areas. The findings indicate that hearing loss impacts not only auditory function but also overall quality of life, leading to feelings of isolation, frustration, and emotional distress. Demographic factors such as sex, the laterality of hearing loss, and the duration of symptoms were strongly associated with the degree of social and emotional handicap, emphasizing the need for personalized interventions.

Effective rehabilitation must address both the social and emotional dimensions of hearing loss. Comprehensive strategies, including counseling, emotional support, and the use of hearing devices, are essential for improving overall well-being. Early identification and proactive management can prevent or alleviate the challenges associated with hearing loss, enhancing patients' quality of life.

Ultimately, this study underscores the importance of a holistic approach to managing hearing loss, integrating medical and psychological support to foster social engagement and emotional resilience. By prioritizing tailored interventions that address the unique needs of each patient, we can significantly enhance their ability to cope with the challenges posed by hearing loss and promote a more inclusive and supportive environment.

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