**DEPARTMENT OF AUDIOLOGY**

**Profile**

The major objectives of the Department of Audiology are to impart professional training, render clinical services, conduct research and educate the public on issues related to hearing impairment. In order to increase the manpower in the field of Audiology, imparting professional training through various short & long term training programs of diploma, graduate & postgraduate level. Further to offer a whole range of clinical services, it includes prevention of hearing loss, assessment of hearing, selection and fitment of hearing devices, provision of custom ear molds and rehabilitation of the individuals with hearing impairment. In addition, to promote research in the field of Audiology in order to keep abreast with the rest of the world.

**Academic Activities**

The faculty members have involved in the academic activities related to the following academic programs conducted by the institute: BASLP, BSc (Speech & Hearing), B.Sc Internees, B.S.Ed. (HI), Masters in Audiology, M.S.Ed. (HI), PG Diploma in Neuro-Audiology, Diploma in Hearing Aid Repair & Earmold Technology, Diploma in Hearing Language and Speech, Certificate Course for Caregivers of Children with Developmental Disabilities, Ph.D in Audiology.

 **Short-term Training Programs**

 The short-term training programs organised by the department during the preceding year are

 given in table.....

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic / Name of the program** | **Objectives** | **Targeted Audience** | **Number of participants** | **Date** |
| Observed clinical activities of the Department | To sensitize the target population on prevention and identification of hearing impairment | Presentation Secondary School Miltown, County & Kertty, Ireland  | 1 candidate | 07.06.10 |
| Observed clinical activities of the Department | C4D2, AIISH, Mysore | 11 candidates | May, June & July 2010 |
| Audiological diagnosis & management | To provide clinical knowledge in evaluation and management of hearing impairment | Univ. of Applied Science, Utrecht, Dutch | 3 internship students (Clinical)  | 12-28.07.10 |
| Audiological diagnosis & management | KIMS Hubli | 2 PG students  | 18-19.10.10 |
| Audiological diagnosis & management | KIMS Hubli | ENT PG student  | 16-21.12.10 |
| Audiological diagnosis & management | MMC&RI, Mysore | ENT PG students | 15-16.12.10 |
| Audiological diagnosis & management | MMC&RI, Mysore | 1 ENT PG student | 04-05.01.11 |
| Audiological diagnosis & management | Medical College, Kolar | 2 ENT PG students | 04-05.01.11 |
| Audiological diagnosis & management | Medical College, Kolar | 2 ENT PG students | 17-18.01.11 |

**In-house Training Programs**

The details of lectures delivered during in-house training program are given in Table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Coordinator** | **Theme** | **Objectives** | **Target Audience** | **No. of partici-pants** | **Date** |
| Dr. Vijayakumar Narne | Staff enrichment program on Introduc-tion and application of MATLAB | To orient regarding the Application of MATLAB for stimulus generation, stimulus analysis, editing, EEG analysis and Statistics. | JRF, and staff from the department of Audiology | 15 | 15.08.10 |
| Dr Manjula P & Ms Megha | Workshop on Cochlear Implant | To orient on rehabilitation, speech coding strategies, fitting parameters of Maestro 4.0 software, candidacy of middle ear input and Auditory brainstem implant | I MSc. (Aud), II MSc. (Aud), JRFs, Staff of the Department | 57 | 05.03.11 |

**Research Activities**

**Postgraduate Research**

32 II M.Sc (Audiology) students submitted their research work as partial fulfillment of Masters Degree under the guidance of faculty of the department. The details are provided in Table.

 Table: Details of the completedPostgraduate Research Works

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.****No.** | **Name** | **Title** | **Guide** |
| 01 | Anuprasad | WARP processing vs. conventional processing. A comparative study in individuals with sensorineural hearing loss | Ms. Mamatha NM |
| 02 | Archana | Test battery for music perception in individuals using hearing devices | Prof. Manjula P |
| 03 | Badariya M | Effect of age on fatiguing characteristics of efferent inhibition | Dr. Sandeep M |
| 04 | Bhavya Rani M.S | Evaluation of speech evoked ABR for selection of hearing aids | Dr. V. Basavaraj |
| 05 | Chayakant Patro | Lexical neighbourhood test: an Indian-English version for children | Prof. Asha Yathiraj |
| 06 | Darshan S | Temporal fine structure (TFS) sensitivity in individuals with normal hearing and sensorineural hearing loss | Ms. Mamatha NM |
| 07 | Dhanya M | OAE profile in individuals with tinnitus | Dr. Animesh Barman |
| 08 | Divya Joseph | Conventional BTE vs.RIC (Receiver-in-the-canal) BTE hearing aids: A comparative study on perceptual and acoustic analysis of speech and music | Dr. Sandeep M |
| 09 | Giridhar G Krishnan | Dichotic rhyme test in Malayalam: A normative data on adults | Dr. K. Rajalakshmi |
| 10 | Hasna Fathima | Effect of prescriptive formulas on music perception in hearing aid users | Dr. V. Basavaraj |
| 11 | Kamala Sarathy | Effect of syllabic and dual compression on speech identification score across different degrees of hearing loss | Ms. Devi N |
| 12 | Kumari Apeksha | Effect of sensorineural hearing loss and digital hearing aid on speech evoked auditory later latency response | Ms. Devi N |
| 13 | Love Deep | Development and standardization of spondee work list in Rajasthani language | Dr. K. Rajalakshmi |
| 14 | Mohan | Maturation of the cortical evoked potential. | Dr. Animesh Barman |
| 15 | Nayana S | Development of the profile for evaluating hearing aid benefit in children. | Ms. Devi N |
| 16 | Neeraja Singh | Findings of Cochlear Hydrops Analysis Masking Procedure (CHAMP) in subjects with suspected and confirmed Meniere’s disease | Dr. V. Basavaraj |
| 17 | Prashanth Prabhu P | Development of auditory comprehension test for children in Kannada | Prof. Manjula P |
| 18 | Prashasti | Compressive non-linearity in sensorineural hearing loss – validates through electrophysiological test | Dr. Rajalakshmi K |
| 19 | Prathibha K K | Efficacy of ASSR as a tool for estimating loudness growth in children. | Dr. Rajalakshmi K |
| 20 | Priyanka M | Neurophysiological correlates of auditory training – brainstem and cortical structures | Dr. Sandeep M |
| 21 | Ramya | Ear mould modifications and its effect on different subjective and objective measures | Prof. Manjula P |
| 22 | Rathnakar | High frequency speech identification test in Telugu | Ms. Mamatha NM |
| 23 | Reesha OA | Music perception in audio and audio-visual impaired. | Ms. Devi N |
| 24 | Rohith H | Auditory evoked cortical responses in children using speech and non-speech stimuli | Dr. Animesh Barman |
| 25 | Sarooj Sahoo | Evaluation of performance with open fit and occluded RIC hearing aid | Prof. Manjula P |
| 26 | Sreela P.K | Effect of reverberation on speech identification scores of digital hearing aid users | Ms. Devi N |
| 27 | Swagathika | Effect of hormonal influence during menstrual cycle on immittance findings | Ms. Mamatha NM |
| 28 | Udit Saxena | Effect of background noise on temporal processing in children and young adults | Dr. Rajalakshmi K |
| 29 | Usha Shastri | Comparison of performance with BAHA and air conduction hearing aids in individuals with conductive hearing loss and mixed hearing loss | Prof. Manjula P |
| 30 | Vijayakumar | Effect of fine grain auditory training in the perception of voicing of stops in individuals with auditory dys-synchrony. | Prof. Asha Yathiraj |
| 31 | Vinu Francis | VEMP in individuals with otitis media  | Dr. Animesh Barman |
| 32 | Vivek Mandal | Effect of aging on VEMP  | Dr. Animesh Barman |

1. **Under progress:**  36 II M.Sc (Audiology) students are doing their research work under the guidance of faculty of the department.

 Table 11: Details of the Dissertations under progress

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.****No.** | **Name of the researcher** | **Dissertation topic**  | **Name of the guide** |
| 01 | Achaiah M.A | Comparison of preferred and prescribed gain in experienced hearing aid users | Dr. Vijayakumar Narne |
| 02 | Akash Juneja | Acoustic change complex in developing children (7-15 years of age) | Ms. Devi N |
| 03 | Akshay Raj Maggu | Effect of temporal pattern training on specific central auditory processes | Dr. Asha Yathiraj |
| 04 | Anisha A.B. | Immittance findings in infants using different probe tone frequencies | Ms. Mamatha N.M |
| 05 | Anjana Beninja Jacob | Effect of non-linear frequency compression in children with limited benefit from high frequency amplification | Ms. Geetha C |
| 06 | Anoop B.J. | Test retest reliability of VEMP parameters | Mr. Niraj Kumar Singh |
| 07 | Anoop O. Thomas | Effect of musical training on temporal resolution and speech perception in noise | Dr. Rajalakshmi K |
| 08 | Ashwini Rao P.N. | Electrically evoked stapedial reflex thresholds: Relationship with behavioral ‘T’ and ‘C’ levels in cochlear implant users | Dr. Asha Yathiraj |
| 09 | Bhamini Sharma | Relationship between DPOAE fine structure and hearing sensitivity across different age groups and gender | Dr. VB / Mr. Sujit Kumar Sinha |
| 10 | Bharath Bhushan K.R. | Physiological correlates of masking level difference | Dr. Animesh Barman |
| 11 | Chaitra V. | Effect of filtering and compression on right ear advsntage | Mr. Niraj Kumar Singh |
| 12 | Dhatri S. Devaraju | Developmental changes in co-modulation masking release for puretones: A cross sectional study | Ms. Mamatha N.M |
| 13 | Divyashree M.S. | Central auditory maturation and language development in children with hearing impairment | Ms. Mamatha N.M |
| 14 | Hanan Mohammed N.T. | Effect of context on brainstem encoding of speech | Dr. Sandeep M |
| 15 | Jyoti | Effect of number of channels of hearing aids on speech perception in varying degrees of sloping hearing loss | Mr. Niraj Kumar Singh |
| 16 | Mukesh Kumar | Dichotic word test for native Hindi speaking children | Ms. Chandni Jain |
| 17 | Navdeep Kanwer | Hearing aid benefit questionnaire for adults | Ms. Devi N. |
| 18 | Nike Gnanateja G. | Relation between consonant perception and psychoacoustic measures in auditory dys-synchrony | Dr. Animesh Barman |
| 19 | Nimisha Saxena | Temporal resolution in listeners with unilateral deafness | Dr. VB / Dr. Vijaykumar Narne |
| 20 | Pallavi | Correlation of electrocochleograph (ECochG) and cochlear hydrops analysis masking procedure (CHAMP) in Meniere’s Disease | Mr. Prawin Kumar |
| 21 | Pavan M. | Correlation of Ripple noise discrimination with perception of amplitude compressed speech by individuals with cochlear hearing loss | Dr. Rajalakshmi K |
| 22 | Prabhash Kumar  | Effects of hearing aid processed speech on brain stem response | Dr. Sandeep M |
| 23 | Pragati Rao M.V. | Hearing aid usage: Relationship between auditory plasticity and audiological measures | Dr. Manjula P |
| 24 | Prajna Nayak | Evaluation of hearing aid parameters for optimal music perception in individuals with hearing impairment  | Dr. Manjula P |
| 25 | Praveen H.R. | Optimizing and evaluating the performance of hearing aid in the ear contra-lateral to the ear with cochlear implant in children | Dr. Manjula P |
| 26 | Priyanjali Harit | Vocal emotion recognition by normal-hearing listeners, individuals with hearing impairment and by auditory neuropathy/auditory dyssynchrony patients | Ms. Devi N |
| 27 | Ranjeet Ranjan | Effect of stimulus rate on sub-cortical auditory processing in children | Dr. Animesh Barman |
| 28 | Sharanya R. | Effect of hearing impairment and noise on the processing of simultaneous sentences | Dr. Rajalakshmi K |
| 29 | Shruti D. Gulvadi | Role of auditory working memory in prescribing hearing aid and type of compression in geriatrics | Ms. Geetha C |
| 30 | Sindhushree H.S. | Perception of emotions in cochlear implant users, hearing aid users and normal hearing children | Dr. Asha Yathiraj |
| 31 | Sonitha Kumar | Binaural interaction component of auditory brainstem response in children using click and speech stimuli | Mr. Sujit Kumar Sinha |
| 32 | Srikar V. | Acoustic change within a syllable in auditory neuropathy | Dr. Vijayakumar Narne |
| 33 | Suma Chatni | Acoustic change complex in native and non-native speakers of a tonal language | Dr. Sandeep M |
| 34 | Swathi V.M. | Effect of dance training on vestibular evoked myogenic potentials | Mr. Sujit Kumar Sinha |
| 35 | Tanvi G.N.  | Management of tinnitus: A comparative study | Ms. Geetha C |
| 36 | Vivek S.  | A comparison between outcomes using preferred gain and prescribed gain formulae in children  | Dr. Vijayakumar Narne |

**Doctoral Research**

 Table : Ph.D. program under progress

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.****No.** | **Name** | **Topic** | **Guide** |
| 01 | Ms. N Devi, Lecturer | Auditory evoked potential correlation of speech and music in musicians and non-musicians | Dr. Vijayalakshmi Basavaraj (Till 18.03.11) |
| 02 | Mr. Sujeet Kumar Sinha, Lecturer  | Brainstem encoding of speech sounds in the aging auditory system - An electrphysiological study | Dr. Vijayalakshmi Basavaraj(Till 18.03.11) |
| 03 | Mr. MK Ganapathy, JRF | Effect of age and noise on acoustic change complex – An electrophysiological study | Dr. Vijayalakshmi Basavaraj(Till 18.03.11) |
| 04 | Mr. Prawin Kumar, Lecturer  | Computer-assisted listening training program for individuals with hearing impairment | Dr. Asha Yathiraj |
| 05 | Mr. P.M. Jijo, JRF | The effect of enhancement of amplitude and durational cues on speech perception in individuals with auditory neuropathy spectrum disorders | Dr. Asha Yathiraj |
| 06 | Ms. Roshni PillaiJRF | Auditory, visual and auditory-visual processing in children with learning disability | Dr. Asha Yathiraj |
| 07 | Mr. N. Hemanth, JRF | The Effect of amplification on objective measure at brainstem and cortical level and behavioral measure in individuals with peripheral hearing impairment | Dr. Manjula P |
| 08 | Ms. C Geetha Lecturer | Optimization of compression parameters in hearing aids using Aided Audibility Index | Dr. Manjula P |
| 09 | Mr. KS Sharath Kumar Clinical Assistant | Effect of noise reduction algorithms (NRA) in hearing aids on acoustic and perceptual measures | Dr. Manjula P |
| 10 | Mr. MP Reuben Jebaraj, JRF | Influence of various hearing aid fitting strategies on speech recognition in individuals with sloping hearing loss  | Dr. Manjula P |
| 11 | Mr. Ranganath,External candidate | Development of a test tool for assessment of memory (working memory) in children | Dr. Rajalakshmi K |
| 12 | Ms. J Delcy Janet, External candidate | Auditory Perception test in Tamil (APTT) – A tool for the assessment of auditory perception skills of children with hearing impairment in Tamil language | Dr. Rajalakshmi K |

**Research Projects with Extramural Funding**

|  |  |
| --- | --- |
| 1.Title  | Issues and strategies for development of human resources for deafness prevention, identification and management |
|  Objectives | To identify human resources and strategies for development of for prevention, identification and management of hearing impairment |
|  Investigators  | Dr.Vijayalakshmi Basavaraj (Principal Investigator) Prof. Manjula P (Co-Investigator) |
|  Amount | Rs.2,00,00/- |
|  Funding Agency | World Health Organization |
|  Status | Completed |

|  |  |
| --- | --- |
| 2.Title | Support for the dissemination and use of hearing aids |
| Objectives | To empower hearing aid beneficiaries by developing and distributing support material /educational material for individuals hearing impairment regarding hearing aid use andcare, tinnitus, prevention of hearing impairment. |
| Investigators  | Dr.Vijayalakshmi Basavaraj (Principal Investigator) Prof. Manjula P (Co-Investigator) |
| Amount | Rs.2,17,000/- |
| Funding Agency | World Health Organization |
| Status | Completed |

|  |  |
| --- | --- |
| 3.Title | Comparative efficacy of BTEs over body level hearing aids in the development of speech and language among the hearing impaired children. |
| Objectives | To study merits of BTEs and binaural BTEs over body level and monaural hearing aids |
| Investigators  | Prof. M Jayaram (Principal Investigator) Prof. Manjula P (Co-Investigator) |
| Amount | Rs.2,17,000/- |
| Funding Agency | DRC (S&T) |
| Status |  |

**Research Projects with ARF Funding**

1.Title Maturation of auditory processes in children aged 6-11 years

 Objectives To develop age appropriate norms on children for a battery of

 tests to identify (C)APD in a group of typically developing

 children at 2 centers.

 Principal Investigator: Dr. Asha Yathiraj

 Co-Investigator(s) Dr. Vanaja C.S

 Amount Rs.3,90,000/-

 Status Data collection for children with suspected (C)APD is under

 progress at Pune.

2. Title Pre-arithmetic school readiness test for children with

 hearing impairment

 Objectives To develop a test for assessing the readiness of children with

 hearing impairment in pre-arithmetic skills and to assess the utility

 of the developed tests.

 Principal Investigator: Dr. Asha Yathiraj

 Co-Investigator(s) Dr. I P. Gowramma, Dr. G.Malar, Ms.Prithi Nair and Ms. P.

 Vijetha

 Amount Rs.2,20,000/-

 Status Final test is being designed.

3. Title Prediction of speech identification scores using Speech

 intelligibility index

 Objectives A multi-centric study to evaluate the effectiveness of speech

 intelligibility index in prediction of SRS in Hindi, Marathi and

 Tamil languages

 Principal Investigators Dr. Asha Yathiraj & Dr. Manjula P

 Co-Investigators Dr. Vanaja C.S, Mr. Heramba, G

 Amount Rs.2,25,000/-

 Status In progress

4. Title Efficacy of fine-grained auditory training in individuals

 with auditory dys-synchrony

 Objectives To determine the efficacy of fine-grained auditory training among

 individuals with auditory dys-synchrony in the perception

 of voiced stop consonants on behavioural and electrophysiological measures.

 Principal Investigator Dr. Asha Yathiraj

 Amount Rs.3,21,000/-

 Status Data collection is in progress

5. Title Servicing and repair of hearing aids: A profile

 Objectives To explore various problems encountered by the hearing aid users

 who have obtained the hearing aids through ADIP scheme and

 HADS scheme and to quantify/list the problems faced by them when their hearing aids are given for repair. To take up steps or

 strategies for preventing such problems.

 Principal Investigator : Dr. Manjula P

 Co-Investigators Ms. Devi N, Dr. Ramadevi K.J, Ms.Kalai Sevi

 Amount : Rs.2,22,000/-

Status : The data were collected for 6 months and the tabulation of data is in progress

6. Title Audiovisual perception and processing in individuals with auditory

 dyssynchrony

 Objectives To study audiovisual speech processing and perception in

 individuals with auditory dys-synchrony.

Principal Investigator Dr. Sandeep M

Co-Investigator Ms. Geetha C

Amount Rs.3,11,000/-

Status Ongoing

7.Title Cortical potential as measure of auditory temporal processes

 Objectives To study relation between cortical potentials, gap detection and

 speech perception in individuals with auditory neuropathy, cochlear

 hearing loss and normal hearing.Study difference in performance

 between these groups

 Principal Investigator Dr. Vijayakumar Narne

 Co-Investigators Dr. Animesh Barman, Mr. Sujeet Kumar Sinha

 Amount Rs.3,24,000/-

 Status Statistical analysis and report writing is yet to be completed

8.Title Protocol for vestibular assessment and its efficacy in

 differential diagnosis of balance disorders.

 Objectives To develop a protocol for differential diagnosis of balance

 disorders.To assess the efficacy of the developed protocol in

 differential diagnosis of the pathologies related to giddiness.

Principal Investigator Mr. Niraj Kumar Singh

Co-Investigators Mr. Sujeet Kumar Sinha, Dr. Rajeshwari G

 Amount Rs.3,26,000/-

 Status In progress

**Research Paper Presentation**

Faculty members, staff, research scholars and students of the departments presented research papers at national and international conferences as follows.

**International Conference/Seminar/Workshops**

2. Manjula P. *Audiological profile in individuals with cochlear nerve hypoplasia.* 1st International workshop on CI. Maulana Azad Medical College, New Delhi, 3 April

Swapna N & Shylaja. *Non-word repetition in children with specific language impairment: An exploratory study*.

8th Asia Pacific Conference on *Speech, Language & Hearing.* Christchurch, New Zealand, 11-14 January

2011.

4. Gopi Kishore P, Remya H Y, Ranjini G.C & Kanthima V Namboothiri. *Efficacy of voice therapy in sulcus vocalis: A single case study.* Joint International Symposium on *Frontiers of Research on Speech and Music and C o m p u t e r M u s i c M o d e l l i n g a n d R e t r i e v a l (FRSM/CMMR).* Bhuvaneshwar, 9-12 March 2011.

5. Rajasudhakar R. & Nirmal Sugathan. *Acoustic vowel space in individuals with Broca's aphasia.* Joint International Symposium on *Frontiers of Research on Speech and Music and Computer Music Modelling and Retrieval (FRSM/CMMR).* Bhuvaneshwar, 9-12 March

2011.

6. Rajasudhakar R, Baljeet Rana & Nayana. *Variability of fundamental frequency under voice disguised condition.* Joint International Symposium on *Frontiers of Research on Speech and Music* and *Computer Music Modelling and Retrieval* (FRSM/CMMR). Bhuvaneshwar, 9-12

March 2011.

7. Rajasudhakar R, Sachin L. C & Somy E Sam.

*Measurement of time dose in different professions.* Joint International Symposium on *Frontiers of Research on Speech and Music and Computer Music Modelling and Retrieval (FRSM/CMMR).* Bhuvaneshwar, 9-12 March 20

8. Savithri S.R, Sreedevi N, Aparna V.S & Deepa Anand.

*Effect of gender on speech rhythm in 3-4 year old Kannada speaking children.* Joint International Symposium on *Frontiers of Research on Speech and*

*Music and Computer Music Modelling and Retrieval*

*(FRSM/CMMR).* Bhuvaneshwar, 9-12 March 2011.

9. Savithri, S.R, Sreedevi N, Aparna V.S & Deepa Anand.

*Speech rhythm in 11-12 years old Kannada speaking children.* Joint International Symposium on *Frontiers of*

*Research on Speech and Music and Computer Music*

*M o d e l l i n g a n d R e t r i e v a l ( F R S M / C M M R ) .*

Bhuvaneshwar, 9-12 March 2011.

10. Sreedevi N, Aparna V.S & Manju M. P. *Effects of speaking rate on formant frequencies and duration of vowels in malayalam*. Joint International Symposium on *Frontiers of Research on Speech and Music and Computer Music M o d e l l i n g a n d R e t r i e v a l ( F R S M / C M M R ) .* Bhuvaneshwar, 9-12 March 2011.

11. Sreedevi N, Reuben T. V & Aparna V S. *A comparison of spectral characteristics of vowels in malayalam across mobile phone and live recordings*. Joint International Symposium on *Frontiers of Research on Speech and Music and Computer Music Modelling and Retrieval (FRSM/CMMR).* Bhuvaneshwar, 9-12 March 2011.

12. Swapna N & Manju M. *Verbal perseveration in malayalam-english bilingual elderly individuals*. 8th Asia Pacific Conference on *Speech, Language & Hearing*. Christchurch, New Zealand, 11-14 January 2011

**National Conferences/Seminars/ Workshops**

1.Animesh Barman. *Hearing assessment in children with special needs*. National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December 2010.

2.. Animesh Barman. *Vestibular pathways related to VEMP*. National Symposium on *Evaluation and Management of Vestibular Problems.* All India Institute of Speech & Hearing, Mysore, 29-30 January 2011.

 3.Aswathy A.K. *Hearing impairment and agrammatism.N*ational Seminar on *Language Acquisition or Learning*. University of Kerala, Trivandrum, 3-4 February 2011.

4. Basavaraj V. *Strategy and protocol for universal hearing screening followed at AIISH, Mysore*. Two-day Workshop on *Newborn Hearing Screening : Formulating Strategy for India.* Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai, 3-4 May 2010.

Basavaraj V. *Role of newborn hearing screening.* 6th South Zone and 28th Karnataka State *ENT* Conference. Mysore, 22 October 2010.

7. Basavaraj V. (2011). *Developing communication skills in persons with communication disorders*. National Conference on *IT for persons with disabilities.* Department of IT, BT and S&T, Government of Karnataka, Bangalore , 11 January 2011.

8. Chandni Jain. *Hearing assessment in paediatric population using subjective measures*. National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17

December 2010.

9. Dhananjay R & Sujeet Kumar Sinha. *Brain-stem correlates of temporal processing in middle aged individuals: A preliminary study*. 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23 January 2011.

10. Geetha C. *Paediatric hearing aid fitting : Selection and verification.* National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December 2010.

11. Geetha Y.V, Aishwarya Anand & Nisha Sudhi. *Do children with stuttering vary in their rate of speech with respect to capacity (DDK) and performance (articulatory rate)?* 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23

January 2011.

12. Gopi Kishore P. *Rehabilitation of voice in professional voice users*. National Workshop on *Professional Voice Assessment and Management.* All India Institute of Speech & Hearing, Mysore, 9-10, December 2010.

13. Hasna Fathima. *Phonological activation during visual word recognition in deaf signers and hearing adults.* National Seminar on *Language Acquisition or Learning*. University of Kerala, Trivandrum, 3-4 February, 2011.

14. Jayashree C. Shanbal, Sangeetha G & Vrunda C.*Translation priming in bilingual children with learning disability*. 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23 January 2011.

15. Jayashree C Shanbal, Sharon Susan Sam & Anjali Maratt. *Diagnosing learning disabilities in children: A speech language pathologist perspective*. National Seminar on *Language Acquisition or Learning.* University of Kerala, Trivandrum, 3-4 February 2011.

16. Jyothi, Kanchan & Sujeet Kumar Sinha. *Test-retest- reliability of cochlear hydrops analysis masking procedure test.* 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23 January 2011.

Manjula R. *Augmentative and alternative communication and education*. 3rd National conference of ISAAC India Chapter. Indian Institute of Cerebral Palsy, Kolkata, 2- 4

February 2011.

18. Manjula P. *Cochlear implant programming*. National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December 2010.

20. Niraj Kumar Singh. *Objective hearing assessment in pediatric population.* National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December

2010.

21. Niraj Kumar Singh. *VEMP recording techniques: Factors affecting and interpretation of VEMP*. National Symposium on *Evaluation and Management of Vestibular Problems.* All India Institute of Speech & Hearing, Mysore, 29-30 January 2011.

22. Prawin Kumar. *Issues on management of children with APD.* National Seminar on *Pediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December 2010.

23. Pushpavathi M & Gopisankar. *Nasalence value for rainbow and zoo passage of non native English speakers.* 9th Annual Conference of Indian Society of Cleft Lip, Palate and Craniofacial Anomalies. AII India Institute of Medical Sciences, New Delhi , 24 April 2010.

24. Pushpavathi M & Indu Thammaiah. *Early intervention module for children with cleft palate* .10th Annual Conference of Indian Society of Cleft Lip, Palate and Craniofacial Anomalies. Chennai, 28-30 January 2011.

25. Pushpavathi M, Indu Thammaiah & Jasmine. *Awareness of parents of CLP on the nature of Cleft palate.* 10th Annual Conference of Indian Society of Cleft Lip, Palate and Craniofacial Anomalies. Chennai, 28-30 January 2011.

Sandeep M. *Screening and identification of hearing loss in children.* National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December 2010.

30. Santosh M, Anusha S. & Rajashekhar B. *Prevalence of voice problems in university teachers.* 7th Annual Conference of Association of Phonosurgeons of India (PHONOCON). The Army Hospital (Research & Referral) New Delhi, 25-27 February 2011.

Sreedevi N, Merin John & Nisha Sudhi. *Sensitivity evaluation of CAPP-M in children with hearing impairment.* 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23

January 2011.

34. Sreedevi N & Merin John. *Phonological processes in 3-*

*3.6 years typically developing malayalam speaking children.* National Seminar on *Language Acquisition or Learning.* University of Kerala, Trivandrum, 3-4 February

2011.

35. Sreeraj K. *Use of assistive listening devices in paediatric population with hearing impairment*. National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17

December 2010.

36. Sujeet Kumar Sinha. *Clinical applications of VEMP*.

National Symposium on *Evaluation and Management of Vestibular Problems.* All India Institute of Speech & Hearing, Mysore, 29-30 January 2011.

37. Swapna N, Ansu A Grace, Shylaja K. *Non-word repetition in sequential and simultaneous bilinguals*. (Poster presentation). 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23 January 2011.

Vivek Mandal & Animesh Barman. *On vestibular evoked myogenic potentials*. 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-

23 January 2011.

Yathiraj A. *Listening training in paediatric population with hearing impairment.* National Seminar on *Paediatric Hearing: Assessment and Rehabilitation.* All India Institute of Speech & Hearing, Mysore, 16-17 December

2010.

42. Yathiraj A. *Assessment and management of CAPD*. 63rd A n n u a l C o n f e r e n c e o f t h e A s s o c i a t i o n o f Otolaryngologists of India*,* Chennai, 6 - 9 January 2011.

43. Yathiraj A. *Multi-disciplinary services and research in the area of cochlear implant*. 43rd Annual Convention of Indian Speech & Hearing Association (ISHACON), Kolkata, 21-23 January 2011.

**Research Paper Publication**

Faculty members and staffs publish their research works in national, international and online journals. Seven articles were published in international, 45 in national and six in online journals, last year, as follows.

**International Journals**

1) Akshay Raj Maggu & Asha Yathiraj (2011). *Effect of noise desensitization training on children with poor speech-in-noise scores*. Canadian Journal of Speech- Language Pathology and Audiology,V.35(1).

3) Kumar P & Yathiraj A (2009). *Perception of speech simulating different configurations of hearing loss in normal hearing individuals.* Clinical Linguistics and Phonetics, V.23 (9).

5) Manjula R, Rupela V & Velleman S.L. (2010).

*Phonological processes in Kannada speaking adolescents with Down's Syndrome.* Clinical Linguistics

& Phonetics, V.24(6).

Shyamala K.C, Vishnu K.K, Arya Abraham & Sapna Bhat (2010). *Fast mMapping of novel words: A cross-linguistic study.* International Journal of Mind, Brain & Cognition, V.1(1).

**National Journals**

Basavaraj V, Venkatesan S, Vasantha Lakshmi M.S & Purusotham P (2010). *Pilot study on process evaluation of DHLS program conducted through real vis-à-vis virtual modes : 2007-08*. Journal of All India Institute of Speech and Hearing, V.29(2).

2. Brajesh Priyadarshi & Kartikeyan B.M (2010).

*Comparison of coarticulatory effects in speech of tamil speaking children and adults with Down's Syndrome: An*

*acoustic explanatory study*. Indian Linguistics: Journal of the Linguistic Society of India, V.71

Ganapathy S.H & Basavaraj V. (2010). *The effect of bone vibrator coupling force in bone conduction ABR.* Journal of Indian Speech and Hearing Association, V.24(2).

5. G a r v i t a M e h t a & S a n d e e p M ( 2 0 1 1 ) .

*Neurophysiological representation of hearing aid processed speech*. Journal of Indian Speech and Hearing Association, V.25(1).

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7. Govindaraju R & Venkatesan S. (2010). *Knowledge and awareness in teachers about government programs to combat school drop outs*. Journal of Indian Academy of Applied Psychology, V.36( 2).

8. Hema N & Shyamala K. C (2010). *Discourse in traumatic brain injury.* Journal of All India Institute of Speech and Hearing, V.29(2).

9. Jayakumar T. & Savithri S.R. (2010). *Respiratory similarity in monozygotic twins*. Journal of All India Institute of Speech and Hearing,V.29 (1).

10. Jayashree C Shanbal, Chaithra S & Prathima S (2010).

*Phonological awareness skills and reading in children who are at risk for learning disability: Role in the Indian*

*context*. Journal of All India Institute of Speech and

Hearing, V.29(2).

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Karimi A & Venkatesan S (2010). *Psychometric properties and norm differences in mathematics anxiety scale for high school students in India*. Asian Journal of Developmental Matters, V 4. (1).

13. Khan N.A, Kanchan A, Jahan M. & Singh A.R (2011).

*Human figure drawings of normal Indian adults*. SIS Journal of Projective Psychology and Mental Health, V18(1).

14. Khan N.A Kanchan A, Singh A, Senger K.S & Nag A.K (2010). *A comparative study of neuro-cognitive impairment in elderly patients with schizophrenia and elderly normals*. Eastern Journal of Psychiatry, V.13(1&2)

15. Khoshali A.K & Venkatesan S (2010). *Development of play activity checklist for children with mental retardation*. Indian Journal of Clinical Psychology, V.37(2).

16. Kumar P & Yathiraj A (2010). *Auditory comprehension passage test for children in Indian-English.* Journal of Indian Speech and Hearing Association, V.24 (2).

17. Kumari Apeksha & Devi N (2010). *Effect of sensorineural hearing loss on speech evoked aided auditory late latency response*. Journal of All India Institute of Speech and Hearing, V.29(2).

18. Manjula R & Priya M.B (2010). *Effect of posture on respiratory and phonatory measures in typically developing children: Implications in cerebral palsy*. Journal of Indian Speech Language and Hearing Association,V.24(2).

19. Mariam Liveem T, Aparna V.S. & Prema K.S (2010).

*Cross linguistic study of phonological similarity effect.* Journal of All India Institute of Speech and Hearing, V.29 (2).

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22. Pushpavathi M, Venkatesan S & Purushotham K (2011).

*Adjustment patterns in voice disorders*. Journal of Indian

Speech and Hearing Association, V.25 (1).

23. Rajasudhakar R. & Savithri S. R (2010). *Effects of teaching and voice rest on acoustic voice characteristics of female primary school teachers*. Journal of All India Institute of Speech and Hearing, V. 29 (2).

24. Rhea M.K, Seby M.M & Swapna N (2011). Cluster disfluencies: *A comparison between children with and without stuttering*. Journal India Speech and Hearing Association, V. 25(1).

Sangeetha M. & Geetha Y.V (2010). *Prevalence of seizure disorders in children with communication disorders: A preliminary study*. Journal of All India Institute of Speech and Hearing, V29 (1).

26. Santosh M. & Rajshekar B (2011). *Perceptual and acoustic analysis of voice in individuals with total thyroidectomy: Pre-post surgery comparison.* Indian Journal of Otolaryngology and Head and Neck Surgery, V.63.

27. Savithri S. R, Sreedevi N, Jayakumar T & Kavya V. (2010). *Development of speech rhythm in Kannada speaking children.* Journal of All India Institute of Speech and Hearing, V.29(2).

28. Sreedevi N, Anusha S & Varsha J (2010). *A comparison of acoustic characteristics of speech in cochlear implant and BTE users with normal hearing age matched individuals.* Journal of All India Institute of Speech and Hearing, V.29 (1).

29. Sreedevi N, Shishira S. B & Sushma S (2010). *Speech intelligibility in typically developing children (3-4 years).* Journal of All India Institute of Speech and Hearing, V. 29 (1).

30. Sudarshan H.M & Venkatesan S. (2010). *Marital adjustment in rural women identified with HIV/AIDS and undergoing anti retro viral drug therapy*. Asian Journal of Developmental Matters, V.4.(2).

31. Sujeet Kumar Sinha & Basavaraj V. (2010). *Auditory brainstem responses to forward and reversed speech in normal hearing individuals*. Journal of All India Institute of Speech and Hearing, V.29(2).

32. Sujeet Kumar Sinha & Basavaraj V (2010). *Lateral asymmetry in speech processing at the brainstem: Evidence from speech evoked ABR.* Journal of All India Institute of Speech and Hearing, V.29(2).

33. Sujeet Kumar Sinha & Basavaraj V (2010). *Speech evoked auditory brainstem responses: A new tool to study brainstem encoding of speech sounds.* Indian Journal of Otolaryngology and Head & Neck Surgery, V.62(4).

34. Swapna N, Steby S, Sindhupriya C & Rupali M (2010).*Cognitive-linguistic abilities in bilingual children.* Journal of All India Institute of Speech and Hearing, V.29(1).

35. Swapna N, Sushma M, Amulya P.R & Ranjini M (2010).

*Fast mapping in typically developing Kannada speaking toddlers*. Journal of All India Institute of Speech and Hearing, V.29 (1).

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**CLINICAL SERVICES**

The department offers a whole range of clinical services, to individuals starting from a few days old to elderly. The activities include prevention of hearing loss, assessment of hearing, selection and fitment of hearing devices, provision of custom ear molds and rehabilitation of the individuals with hearing impairment. These services may be broadly categorized as hearing evaluation and audiological management.

1. **Hearing Evaluation**

A battery of tests is administered with the state-of-the-art equipment on clients, complaining of problem in hearing, who visit the institute from all over the country and abroad. Physiological and electrophysiological tests play an important role in detecting the clients with functional hearing loss, whose number has shot up to avail the increased financial aid.

 A few of the behavioural tests used at the department are Pure Tone Audiometry and Speech

 Audiometry. Facilities to carry out Behavioural Observation Audiometry (BOA) and Visual

 Reinforcement Audiometry (VRA) are also available. With VRA it is possible to obtain voluntary responses to sound stimuli from children as young as six months of age. Using objective tests, responses to auditory stimuli can be obtained without voluntary response from the individual. The objective tests used at the department include, Immittance evaluation, measurement of Oto Acoustic Emissions (OAE) Measurement of Auditory Evoked Potentials (AEP) and Auditory Steady State Responses (ASSR). After the hearing assessment, appropriate referrals or rehabilitative procedures are recommended. The referral could be for a medical / surgical line of treatment. Audiological treatment when recommended will be carried out at the department.

Table 14 gives the details of clients seen for hearing evaluation and of certificates issued for eligible clients to avail welfare measures. Figure 1 provides details of status of hearing in clients evaluated and the audiological tests carried out.

 Table 14**:**  Clients seen in hearing evaluation section

|  |  |
| --- | --- |
| Total no. of clients evaluated/screened for hearing problems | 11063 |
| No. of ears tested  | 17832 |
| * Normal hearing
 | 3459 |  |
| * Conductive hearing loss
 | 2596 |  |
| * Mixed hearing loss
 | 4270 |  |
| * Sensori-neural hearing loss
 | 7507 |  |
| No. of audiogram copies issued | 6403 |
| No. of clients tested in Hindi  | 413 |
| No. of certificates issued  | 1515 |
| * Financial aid
 | 893 |  |
| * Admission to school for the deaf
 | 129 |  |
| * Physically handicapped
 | 212 |  |
| * Tax exemption
 | 54 |  |
| * Education scholarship
 | 107 |  |
| * At camp
 | 4 |  |
| * Others
 | 120 |  |
| No. of clients for whom case history taken | 13157 |
| No. of clients for Pure tone audiometry | 10229 |
| No. of clients for Speech audiometry | 10306 |
| No. of clients for Immittance evaluation | 10536 |
| No. of clients for BOA | 767 |
| No. of clients for ABR | 2631 |
| No. of clients for OAE | 793 |
| No. of clients for VRA | 98 |
| No. of clients for CAPD tests | 39 |
| No. of clients for VEMP | 37 |

 **Fig.1 :** No. of clients tested in hearing evaluation section

 **Fig**.2 No. of ears tested with normal hearing & with different types of hearing loss

 **Fig: 3** No. of certificates issued in various categories

**Hearing Aid Trial**

For those clients who require hearing devices, evaluation is done to select appropriate hearing devices such as hearing aids and assistive listening devices. Evaluation is also done to decide cochlear implant candidacy. Programming of the cochlear implants is also being carried out for clients. The clients are also counselled on the hearing aid use and care. They are distributed with printed education material on the use of hearing aids. Table 15 and Figure 4 give the details of hearing aid evaluation carried out at AIISH and at camps.

 Table 15**:** Clients seen in hearing aid trial unit

|  |  |
| --- | --- |
| Total no. of clients evaluated for hearing devices  | 10597 |
| No. of clients seen for hearing aid trial at AIISH  | 8761 |
| No. of clients seen for hearing aid trial at Camps | 751 |
| No. of hearing aid prescribed at camps | 623 |
| No. of clients counseled | 4038 |
| Hearing aids prescribed | 5061 |
| * Body level
 | 3740 |  |
|  - ADIP | 3569 |  |  |
|  - Purchased | 171 |  |  |
| * Analogue BTE
 | 23 |  |
| * Digital BTE
 | 1195 |  |
| * Trimmer Digital BTE
 | 102 |  |
| * Digital ITC
 | 49 |  |
| * Digital CIC
 | 9 |  |
| No. of clients recommended  | 1922 |
| * Auditory training
 | 1127 |  |
| * Speech reading
 | 795 |  |
| No. of hearing aids prescribed on exchange  | 274 |
| No. of clients for whom aided ASSR done  | 6 |
| No. of unaided/aided audiograms | 609 |
| No. of unaided/aided audiograms for CI | 29 |
| Candidacy for CI | 45 |
| Mapping for CI | 65 |
| Aided VRA  | 132 |
| Programming of digital hearing aids | 882 |
| No. of certificates issued for DL/LIC/Financial aid | 258 |
| No. of IGO done | 55 |
| No. of EAC of hearing aids done | 360 |
| No. of clients tested in Hindi | 316 |
| No. of clients recommended for retrial with custom ear mould | 336 |
| No. of clients for whom ALDs tried | 3 |
| No. of clients referred to AIISH | 67 |

 **Fig 4 :** Activities at HAT Unit

**Counseling and Guidance**:

Counseling and demonstration on hearing aid use were carried out for 4038 clients who have been issued hearing aids. Individuals with poor speech identification ability were advised to use communication strategies and speech reading.

**Fig 5 :** No. of clients seen for different activities at HAT Unit

**Ear Moulds**

Custom ear moulds were made for clients who were prescribed and issued hearing aids. Ear moulds were also made with acoustic modification for research purposes. The central prosthetic lab had received ear impressions to be processed as ear moulds. Table 19 and Figure 6 give the details of activities carried out in the ear mould lab at AIISH and at camps.

 Table 16**:** No. of clients seen in ear moulds lab

|  |  |
| --- | --- |
| No. of clients seen | 3411 |
| No. of impressions taken | 5421 |
| No. of ear moulds made free-of-cost | 3247 |
| No. of ear moulds made on 50% payment | 0 |
| No. of ear moulds made on 100% payment | 2175 |
| No. of ear moulds completed | 5103 |
| No. of ear moulds issued  | 4674  |
| No. of hard regular moulds made | 3210 |
| No. of hard shell moulds made | 160 |
| No. of soft moulds made | 1940 |
| No. of ITC impression made | 45 |
| No. of swimmer plug (soft) | 49 |
| No. of molds with acoustic modifications | 4 |
| No. of ear moulds impression taken at camps | 342 |
| No. CPL impressions received | 314 |
| No. of CPL moulds completed | 311 |
| No. of CPL moulds defective | 3 |

**Fig. 6:**  No. of clients seen and no. of ear impression taken

**Fig.7 :** Types of earmolds made at the ear mould Lab

**AIISH Hearing Aid Dispensing Scheme:**

For clients who are not eligible to avail a hearing aid under the ADIP scheme and for those clients who can afford to purchase the hearing aids, the hearing aids are dispensed at discounted rates through this scheme. The details of hearing aids prescribed for purchase under hearing aid dispensing scheme (HADS) are given in Table 17 & figure 8.

 Table 17**:** Hearing aids dispensed under HAD scheme

|  |  |
| --- | --- |
| Total number of hearing aids dispensed  | 967 |
| * Body level
 | 36 |  |
| * BTE Analogue
 | 5 |  |
| * BTE Digital
 | 53 |  |
| * BTE Trimmer Digital
 | 848 |  |
| * ITC Digital
 | 24 |  |
| * CIC Digital
 | 2 |  |
| * ITE Digital
 | 1 |  |

 **Fig.8** : No. of hearing aids dispensed every month at AIISH

Age-wise statistics of clients seen in hearing evaluation (HE), hearing aid trial (HAT) & counseling and ear mold (EM) sections of the department of Audiology is given in the Table 18 and Figure 8.

 Table 18**:** Age-wise statistics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Age****group** | **Hearing****Evaluation** | **Hearing Aid****Trial** | **HAT****Counseling** | **Ear moulds** |
| **Male** | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** |
| 00-01 | 163 | 108 | 132 | 104 | 48 | 27 | 61 | 58 |
| 02-05 | 644 | 513 | 908 | 683 | 174 | 149 | 344 | 304 |
| 06-10 | 437 | 376 | 516 | 379 | 178 | 117 | 180 | 129 |
| 11-15 | 347 | 273 | 294 | 218 | 117 | 74 | 114 | 97 |
| 16-20 | 396 | 301 | 241 | 161 | 96 | 69 | 101 | 65 |
| 21-25 | 412 | 297 | 215 | 130 | 114 | 66 | 73 | 52 |
| 26-30 | 386 | 306 | 193 | 89 | 94 | 69 | 72 | 47 |
| 31-35 | 351 | 256 | 150 | 128 | 55 | 55 | 49 | 34 |
| 36-40 | 351 | 268 | 166 | 139 | 108 | 85 | 63 | 53 |
| 41-45 | 326 | 236 | 176 | 121 | 81 | 73 | 62 | 50 |
| 46-50 | 311 | 239 | 210 | 120 | 119 | 82 | 76 | 66 |
| 51-55 | 347 | 219 | 244 | 143 | 143 | 88 | 96 | 55 |
| 56-60 | 370 | 262 | 325 | 170 | 168 | 96 | 121 | 64 |
| 61-65 | 416 | 256 | 398 | 165 | 235 | 131 | 153 | 87 |
| 66-70 | 391 | 262 | 415 | 198 | 262 | 128 | 182 | 76 |
| 71-75 | 351 | 186 | 368 | 133 | 225 | 130 | 133 | 52 |
| 76-80 | 227 | 95 | 295 | 96 | 161 | 53 | 107 | 33 |
| 81-85 | 135 | 69 | 169 | 48 | 74 | 56 | 50 | 19 |
| 86-90 | 60 | 27 | 60 | 35 | 38 | 15 | 20 | 8 |
| 91+ | 10 | 6 | 19 | 7 | 7 | 7 | 4 | 2 |
| **Total** | 6431 | 4555 | 5494 | 3267 | 2497 | 1570 | 2061 | 1351 |
| **10,986** | **8,761** | **4,067** | **3,412** |
| **Grand Total – 27,226** |

**Fig.9:** No. of clients **(**gender-wise) evaluated at HE, HAT, counselling and EM sections

B ) Specialized Clinical Services

**Listening Training Unit**

Listening training is provided for clients who use hearing devices such as hearing aids, cochlear implants and for clients with tinnitus & hyperacusis. Training is provided mainly by student clinicians under the supervision of the staff. Training is given for some of the cochlear implantees by the staff of the department. Table 19 and figure 10 provide the details of the clients who have undergone listening training.

 Table 19: Activities in listening training unit

|  |  |
| --- | --- |
| Total no. of clients seen  | 2261 |
| Total no. of sessions | 14493 |
| No. of clients for whom demonstration therapy given | 145 |
| No. of new clients | 436 |
| No. of repeat clients | 1827 |
| No. of clients discharged | 68 |
| No. of clients discontinued | 105 |
| Parent counseling session (Individual) | 917 |
| No. of clients given training in Hindi  | 183 |
| No. of clients with CI  | 138 |
| No. of sessions for clients with CI | 906 |
| No. of sessions for tinnitus/hypercusis | 155 |
| Total no. of students posted | 1083 |

**Fig.10:** Details of Listening Training Unit

 Workshops/Conferences/Seminars organised

the seminars/workshops/conferences that are being organised by the department during 2010-11 are given in Table

**Table : Details of** seminars/workshops/conferences

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Coordinator** | **Theme** | **Objectives** | **Target Audience** | **No. of partici-pants** | **Date** |
| Dr. K.J. Ramadevi, & Mr. Darga Baba Fakruddin | Fine-tuning of digital hearing aids: For individuals with hearing impairment | To provide information on care, use, trouble shooting of digital hearing aids & recent advances in hearing aid technology | Hearing aid users | 12 | 02.09.10 |
| Dr. P. Manjula, & Ms. Geetha, C | National Seminar on Paediatric Hearing Assessment and Rehabilitation | To provide information regarding identification, assessment, & rehabilitation of children with hearing loss.  | Audiologists | 34 | 16.12.10 & 17.12.10  |
| Dr. Animesh Barman, &Mr. Sujeet Kumar Sinha | National Symposium on Evaluation and Management of Vestibular Problems | This symposium was being organized to understand the role of the vestibular system, the causes, assessment and management of these vestibular disorders.  | Practicing Audiologists, ENT Specialists and students | 129 | 29.01.11& 30.01.11 |