

**SCREENING AND DIAGNOSTIC TEST MATERIALS AND
INTERVENTION MANUALS FOR SPEECH AND LANGUAGE
DISORDERS**

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TABLE OF CONTENTS

Chapter	Title	Page No.
I	Introduction	1
II	Review	4
III	Method	9
IV	Brief description of the tests/tools	13
V	References	21

LIST OF TABLES

Table No.	Title	Page No.
1	Details of Articulation tests included under SaLT - AIISH	4
2	Details of Voice protocols included under SaLT - AIISH	5
3	Details of Fluency tests included under SaLT - AIISH	5
4	Details of Child Language tests included under SaLT - AIISH	6
5	Details of Adult Language tests included under SaLT - AIISH	6
6	Details of Reading tests included under SaLT - AIISH	7
7	Details of Writing tests included under SaLT - AIISH	7
8	Details of Prosody tests included under SaLT - AIISH	7
9	Details of tests/tools included in the project	10

CHAPTER 1

INTRODUCTION

All India Institute of Speech and Hearing (AIISH) is a premier institute in the country imparting training in the field of Speech, Language and Hearing. AIISH was established on 9th August, 1965 as an autonomous organization functioning under the aegis of the Union Ministry of Health and Family Welfare. It caters to manpower generation in the field, promoting research and providing clinical services in the area of Speech, Language, Hearing and their disorders.

AIISH was primarily established as a training institute in 1967. At the time of its inception a postgraduate program in Speech and Hearing was started and an undergraduate program was initiated in 1968. From 1967 onwards, there has been a constant growth in the number of training programs offered by the institute. The increase in the number of programs has resulted in an increase in manpower generation at different levels required to cater to the needs of persons with communication disorders.

As per the memorandum of association, rules and regulations, bye-laws of AIISH, amended up to 19.12.2005, the objectives of the institute includes training, research, clinical services and public education. At present, AIISH offers three Diploma program– Diploma in Hearing Aid and Ear mould Technology (DHA & ET), Diploma in Training the Young Hearing Impaired (DTYHI), Diploma in Language, Hearing and Speech through distance mode (DHLS); two graduate programs – Bachelors in Speech and Hearing and B.S.Ed. (Hearing Impairment); three Masters programs (M.Sc. in Audiology, M.Sc. in Speech-Language Pathology and M.S. Ed. in Hearing Impairment); four PG Diploma courses (PG Diploma in Forensic Speech Sciences and Technology, Clinical Linguistics, Neuro-audiology, Augmentative and Alternative Communication); two doctoral programs (Ph.D. in Audiology & Speech-Language Pathology); and Post Doctoral Fellowships. The institute also conducts short term training and orientation programs for professionals in allied specialties as well as for the public.

AIISH has been recognized as a reputed organization for training manpower in the field of Speech, Language and Hearing and related areas throughout the country. The institute has been recognized as a Centre of Excellence in the Area of Deafness (WHO), as a Centre for Advanced Research (UGC) and as a Science and Technology Institute (DST). The institute is affiliated to the University of Mysore for the award of degrees. The academic programs of the institute have the recognition of the Rehabilitation Council of India, a statutory body in the area of rehabilitation sciences.

AIISH has always been a forerunner in conducting research in the various areas of Speech, Language and Hearing and their disorders. In addition to availing grants from external agencies for research purposes, AIISH is also home to intramural funds by the name, AIISH Research Fund (ARF). This was one of the important initiatives by AIISH for dedicated research funds in the field of Speech, Language and Hearing. These research grants have led to the development of indigenous evidence based clinical protocols, assessment and intervention tools. These tools are being prepared keeping in mind the ethnocultural diversity of India, thus catering to the Indian population with diverse language backgrounds.

In addition to the research outcomes from projects granted by extramural and/or intramural funds, a large body of clinical research is also taken up by students pursuing postgraduate, doctoral and postdoctoral programmes at AIISH. As a result, several assessment tools and intervention manuals have been developed in various Indian languages. These materials have immediate clinical and research implications in the Indian context, if put to use. Unfortunately, these have not been accessed by the professionals due to unavailability in a published format, although there is a great need for the same. It is however imperative that such resources be made available to professionals in different clinical set ups. This will promote the use of indigenous resources for effective assessment and management of persons with communication disorders. Further, with increase in the number of training programs in the field of Speech, Language and Hearing across the country, it is essential that every student and practicing professional be aware of these indigenous clinical tools and their clinical utility for the Indian population. It is the need of the hour to make the clinicians understand the limitations of direct usage of western assessment tools and

intervention programs in the Indian context. Thus, this project was proposed with the objective of compiling these materials and making them accessible to professionals in the field across the country; so that the available screening, diagnostic and intervention manuals in Indian languages can be used effectively for the clinical population.

CHAPTER 2

REVIEW

The Masters' and Doctoral dissertations submitted by the students at AIISH from 1967 onwards were reviewed. Of these, the materials which have direct clinical implication were shortlisted. Among these, a number of tests were compiled for immediate clinical use as part of a project funded by ARF titled "Speech and Language Tests at AIISH (SaLT-AIISH)" (Prema, Savithri & Jayaram, 2004).

The details of the tests included under SaLT – AIISH are as listed in the following tables. Tables 1 to 8 show the details of the tests in the area of articulation, voice, fluency, child language, adult language, reading, writing and prosody respectively.

Table 1. *Details of Articulation tests included under SaLT - AIISH*

Sl. No.	Author (Year)	Title
1.	Tasneem Banu (1977)	Articulatory Acquisition in Kannada: A Study of Normal Children
2.	Usha, D. (1986)	T.A.T. - A Test of Articulation in Tamil
3.	Padmaja, B. (1988)	T.A.D.T. - Test of Articulation and Discrimination in Telugu
4.	Rohini, H. (1989)	Deep Test of Articulation in Kannada Sentence Form
5.	Maya, S. (1990)	Articulation Test Battery in Malayalam
6.	Animesh Barman (1991)	Deep Test of Articulation in Bengali - Picture Form
7.	Bhavani Pradhan (1995)	Deep Test of Articulation in Nepali - Picture Form
8.	Sangeetha, K. (1995)	Deep Test of Articulation in Tamil - Picture Form
9.	Deepa Shankar (1998)	Deep Test of Articulation In Hindi- Picture Form

Table 2. *Details of Voice protocols included under SaLT - AIISH*

Sl. No.	Author (Year)	Title
1.	Krishnamurthy, B.N. (1986)	Measurement of Mean airflow rate in Normals
2.	Chandrashekhar, K.R. (1987)	Electroglottography in Dysphonics
3.	Balaji, O. (1988)	Long-term Average Spectrum and Electroglottography in Dysphonics
4.	Bhattacharya, D. (1991)	Electroglottograph in Normal Children and Adults
5.	Bhuvaneshwari, K. (1992)	Pitch and Amplitude Perturbations in 10 Years Old Children
6.	Jotinder, Preet Sandhu (1994)	Aerodynamic Parameters Across Age Groups
7.	Rajiv, P. (1995)	Normative Data on Aerodynamic Parameters in Normal Adults
8.	Ramya, K.M. (2003)	Development of a Voice disorder outcome Profile (Voice-DOP) for Indian population
9.	Savitha, V.H. (2003)	Fundamental frequency changes during puberty

Table 3. *Details of Fluency tests included under SaLT - AIISH*

Sl. No.	Author (Year)	Title
1.	Indu, V. (1990)	Some Aspects of Fluency in Children (4-5 Years)
2.	Nagapoornima, M. (1990)	Disfluencies in Children (3-4 Years)
3.	Yamini, B.K. (1990)	Disfluencies in Children (5-6 years)
4.	Aravind Kumar Sharma (1991)	Disfluencies in Hindi Speaking Children (6-7 Years)
5.	Rajendra Swamy (1991)	Some Aspects of Fluency in Children 6-7 Years

Table 4. *Details of Child Language tests included under SaLT - AIISH*

Sl. No.	Author	Title
1.	Sudha, K.Murthy (1981)	Syntax Screening Test in Tamil
2.	Kathyayani, H.N. (1984)	Language Test in Kannada for Expression in Children
3.	Geetha Harlekar (1986)	3 D Language Acquisition Test (3 D-LAT)
4.	Sreedevi, N. (1988)	KPVT - A Screening Picture Vocabulary Test in Kannada
5.	Shipra, K. Ojha (1992)	Test of Word-Finding Abilities in Children (Hindi)
6.	Bhuvaneshwari, S. (1993)	TPVT - A Screening Picture Vocabulary Test in Tamil
7.	Javer Gala (1993)	Test of Word-Finding Abilities in Children (Gujarati)
8.	Rukmini, A.P. (1994)	Malayalam Language Test – MLT
9.	Monika Sharma (1995)	Linguistic Profile Test (LPT) (Hindi) Normative Data for Children in Grades I to X
10.	Suhasini, G. (1997)	Linguistic Profile Test (LPT) (Telugu) Normative Data for Children in Grades I to X

Table 5. *Details of Adult Language tests included under SaLT - AIISH*

Sl. No.	Author	Title
1.	Veena, N.R. (1982)	Revised Token Test in Kannada
2.	Jenny, E. Philip (1992)	Test of Aphasia in Malayalam
3.	Annamma George (1996)	English-Malayalam Bilingual Aphasia Test
4.	Anupama, T. R. Sampath (1996)	Right Hemisphere Language Battery in Kannada
5.	Hia Datta (1999)	Linguistic Assessment Protocol for Traumatic Brain Injury in Adults
6.	Aruna Kamath (2001)	Cognitive-Linguistic Assessment Protocol for Adults

Table 6. *Details of Reading tests included under SaLT - AIISH*

Sl. No.	Author	Title
1.	Devaki Devi (1978)	Reading Readiness Test in Kannada: Its Development and Standardization
2.	Monika Loomba (1995)	Descriptive Analysis of the Sequential Progression of Early Reading Skills Among Indian Children
3.	Swaroop, K.P. (2001)	Checklist for Screening Language Based Reading Disabilities (CHE-SLR) in Children.
4.	Seetha, L. (2002)	Reading acquisition in Malayalam: A profile of the second graders

Table 7. *Details of Writing tests included under SaLT - AIISH*

Sl. No.	Author	Title
1.	Kiran, J. (1994)	Test of Writing for Children in Hindi (TOWCH)
2.	Yeshoda, K. (1994)	Test of Writing for Children in Kannada (TOWCK)
3.	Jayashree Shanbal B (2003)	Tool for screening children with writing difficulties (ToSC-WD)

Table 8. *Details of Prosody tests included under SaLT - AIISH*

Sl. No.	Author	Title
1.	Mohan Natarajan (1991)	Synthetic Test of Intonation Patterns
2.	Jayanthi Ray (1993)	Synthetic Test of Rhythm

Though several clinical tools have been developed at AIISH, they have not been put to clinical use at the national/regional level. Despite considerable demand from the professionals to avail these materials for clinical applicability, they have not yet been used due to lack of accessibility of these materials in a published format. Thus, in order to make such materials available to the professionals across the

country, this project was initiated. The outcome of the project will reflect the growth of the profession and the contribution of the professionals at large.

The objectives of the project were:

- Reviewing and compilation of the clinical tools developed at AIISH for assessment and management of Speech and Language disorders.
- Preparing a comprehensive clinical format for the use of the tools in various clinical setups.

CHAPTER 3

METHOD

The material available at AIISH were reviewed and based on the review for each material, a compiled data base of demographic requirements, conditions in which it could be administered, population it could be catered to, test stimuli and administration procedures, scoring and interpretation were stated as given by the author(s) in the original materials. During the review and preparation of the material, it was found that some of the materials were lacking in certain clinical usage aspects. Hence, appropriate editions were made to provide a professional appearance to the tool/s. However, no modifications with reference to the overall contents of the original test material were made. All the test materials considered under the project have been provided with an ISBN number.

Keeping in mind the above mentioned framework, the method for the project was broadly divided into the following phases:

Phase – 1:

- Reviewing the dissertations related to development and disorders of speech and language. After reviewing, the tests developed from the year 2005 to 2011 were considered for this project. A total of 58 dissertations were listed in the first phase of the study. Considering the demand from the professionals and the clinical utility, 39 dissertations were further short-listed. Amongst these 39 dissertations, 16 dissertations were zeroed down owing to time constraints and immediate clinical utility with minimum modifications required. The details of the test materials considered under the project are given in Table 9.

Table 9. *Details of tests/tools included in the project*

Sl No.	Authors (Year)	Test/ Tool
1.	Ramya, H. Y. & S.P. Goswami (2011)	Bedside Screening Test for persons with Aphasia - Kannada
2.	Radhika, S. & R. Manjula (2008)	Protocol for appraisal of verbal praxis in typically developing children
3.	Navitha, U. & K. C. Shyamala (2009)	Comprehensive language assessment tool for children
4.	Anuroopa, L & K. C. Shyamala (2006)	Development of cognitive linguistic assessment protocol for children
5.	Bijoya, M. & S.P. Goswami (2010)	Development of Revised Token test -Oriya
6.	Veena, K. D. & S.P. Goswami (2010)	Cognitive Linguistic Assessment Protocol- Telugu
7.	Kuppuraj, S. & Jayashree Shanbal (2009)	Dyslexia Assessment Profile for Indian Children
8.	Kanthima, N. & S.P. Goswami (2011)	Bedside Screening Test for persons with Aphasia - Malayalam
9.	Ranjini, G. C. & Jayashree Shanbal (2010)	Treatment Manual in English for Indian Children with Dyslexia
10.	Rupali Mathur & S.P. Goswami (2010)	Protocol for measuring participation of persons with Aphasia
11.	Aruna Kamath & Prema K. S. (2001)	Cognitive Linguistic Assessment Protocol- Kannada
12.	Lakshmi M. & S.P. Goswami (2010)	Cognitive Linguistic Assessment Protocol- Malayalam
13.	Lincy Mary Varghese & S.P. Goswami (2010)	Development of Revised Token Test-Malayalam
14.	Meera, C. S. & R. Manjula (2009)	Clinical Protocol for Assessment of Swallowing in Adults
15.	Kavya, V. & K. C. Shyamala, (2007)	Development of cognitive linguistic assessment protocol for children with Learning Disability
16.	Swathi, B. & S.P. Goswami (2008)	Questionnaire to Evaluate the Extent of Burden on Caregivers of persons with Aphasia [QBCA]

Phase-2:

- A. A formal request for consent and suggestions/remarks from the faculty under whose guidance these research works were carried out was sent through Director-AIISH. A total of ten faculty were communicated and all of them consented to put to use these clinical materials. The faculty also stated that new norms are required for the tests developed before 2005. This suggestion was taken into account as the norms in speech and language skills do vary and re-standardization of such tools is usually needed after one decade of its development. Compilation of the tools from 2005 onwards was thus taken up.
- B. During compilation, the following issues were observed:
- Lack of uniformity in the information
 - Unavailability of IPA version of speech and language test stimuli
 - Incompatibility of the soft copies of the stimuli of most tests for appropriate formatting and hence the same had to be retyped in the present format.
 - Inability to effectively use the available soft copies of these materials as the details of the software used to type the test stimuli in the corresponding Indian script were not provided
 - Lack of appropriate instructions in several subtests
 - Poor quality of picture stimuli in some of the tests, necessitating the need to replace the same with suitable pictures.
 - Lack of uniformity in the pictures as some were in black and white format, while others were in color format.
 - Lack of comprehensive score sheets and normative tables
- C. Considering the above issues, the following aspects were included in the final versions of the tests/tools included under the project:
- Brief description of the test/tool and its purpose
 - Test construction and design
 - Language of the tool that was developed
 - The target population on which the tool can be applied

- Administration of the test including the instructions
- Test stimuli
- Scoring procedure
- Normative data (wherever applicable)

Phase 3:

The test materials were formatted into a manual to give a professional look. This included:

- Ensuring uniformity with reference to the size of the manual (Crown paper size)
- Uniform font type (Times New Roman) and size (12) was followed throughout the manuals
- Baraha version 9.3 was used to type the stimuli in the respective Indian script
- Wherever applicable, picture stimuli were separated from the manual for ease of administration
- A cover page was designed for each test.
- The details of the author(s), editor(s) were incorporated on the cover page. Due credit to the faculty under whose guidance these tests were developed was ensured by considering them as one of the authors.
- The year of publication, cost and details of copyright were stated in each manual.
- The back cover pages of all the manuals include the genesis of AIISH.
- ISBN number was provided for each manual.

The manuals thus finalized shall be useful in providing an insight about screening, diagnostic and intervention of persons with communication disorders. The materials shall also be useful in test selection, administration and interpretation of test findings in the assessment of various Speech and Language conditions. Thus, the compiled material will be useful to all the professionals in the area of Speech and Hearing across the country. These manuals do reflect the contribution of AIISH to provide indigenous materials for the professionals and also broadens the publication scope of AIISH, Mysore.

CHAPTER 4

BRIEF DESCRIPTION OF THE TESTS/TOOLS

A brief description of each of the 16 tests/tools included under the project has been given below:

1. Protocol for appraisal of Verbal Praxis in typically developing children (Radhika & Manjula, 2008)

Praxis control is very important for speech production in terms of generation of articulatory postures and seriation of speech gestures. In children with Developmental Apraxia of Speech (DAS), the deficits in verbal praxis are primarily due to inability to sequence or seriate muscle contractions, thereby leading to inaccurate control of skilled speech action sequences. A need to develop a scale for assessment of verbal praxis in typically developing children and to know the patterns of speech praxis control during the course of normal development was observed. As per the need, a protocol for assessment of verbal praxis in Kannada language on typically developing children was developed.

The test protocol was standardized on children aged 2.6-4.0 years. The protocol includes assessment of oral mechanism for speech and detailed verbal praxis. The scale is designed to estimate the level of performance on verbal praxis in a given child and thus aid in the early diagnosis of Kannada speaking children at risk for verbal praxis breakdown. It also serves as a useful clinical tool in therapy for children with verbal praxis breakdown. Comprehensive table for normative data and the graphical representation of the normative data are also provided in the manual.

- 2. Bedside Screening Test for persons with Aphasia – Kannada [BST -K]
(Ramya & Goswami, 2011) &**
- 3. Bedside Screening Test for persons with Aphasia – Malayalam [BST-M]
(Kanthima & Goswami, 2011)**

Aphasia is defined as a disorder of language where linguistic processing and linguistic knowledge is affected. In the initial post-acute stages of recovery, screening tools play a very important role to predict whether the person's language is deviating from the normalcy. In order to improve the quality of assessment and for better understanding of the person's strengths and weakness, there was a demand for developing test materials in native languages.

Bedside Screening test was developed in Kannada and Malayalam languages to screen persons with aphasia above 18 years in the respective language. The screening test includes assessment of important linguistic domains such as Spontaneous Speech, Auditory Verbal Comprehension, Repetition, Naming, Reading and Writing. A three point rating scale is used to score the responses of persons with aphasia. Instructions, score sheet and normative data for each domain are available in the manual.

- 4. Development of Revised Token Test –Oriya [RTT-O] (Bijoya & Goswami, 2010) &**
- 5. Development of Revised Token Test –Malayalam [RTT-M] (Lincy & Goswami, 2010)**

In the context of aphasia, it is necessary to have a test to identify and classify the problem into various groups for the purpose of diagnosis, prognosis and therapy. Aphasia tests developed in Indian languages are intended mostly at testing the expressive ability of a person with aphasia in comparison to the comprehension abilities. However, it is equally essential to assess the comprehension abilities of persons with aphasia in the respective language. Revised Token Test is the most common test used to assess comprehension abilities in the auditory modality in persons with aphasia.

On similar lines, Revised Token Test was developed in Oriya and Malayalam languages to assess receptive abilities of persons with aphasia in the respective language. These tests have been administered on neurotypical adult participants in the respective languages and hence, give a basis for comparison between the comprehension abilities of neurotypical persons and persons with aphasia. The RTT consists of 10 subtests involving the 20 test stimuli which assess comprehension of commands of increasing length and complexity, and different sentence types. A comprehensive layout for placing the tokens, separate scoring sheet and statistical data for comparison is provided in the manual.

6. Protocol for measuring Participation of Persons with Aphasia [PPPA] (Rupali Mathur & Goswami, 2010)

It has been well established that aphasia can diminish participation of persons across several real life contexts such as activities of daily living, at home, in social situations, in academics, and at work place. PPPA is an assessment tool especially designed for persons with aphasia to measure their activity and participation in real life context based on the framework of International Classification of Functioning, Disability and Health [ICF]. This measurement tool will in turn enhance understanding of the impact of aphasia on the life of person with aphasia and their caregivers.

The questionnaire consists of 4 sections namely; Understanding and Expression, General Tasks and Demands, Interpersonal Interactions and Relationships, and Facilitator and Barriers. Appropriate pictures are provided to increase understanding of each question. Rating scales are provided under each sections for the person to rate their ability to perform different tasks. Separate score sheets for each section is also provided in the manual. Details about the performance of persons with different types of aphasia on various sections of the protocol have also been included for a brief insight.

7. Dyslexia Assessment Profile for Indian Children (DAPIC) (Kuppuraj & Jayashree, 2009)

Dyslexia is a difficulty in the acquisition of literacy skills that may be caused by combination of phonological processing, visual and auditory system deficits. According to the different causes of dyslexia, there are several types of learning disability quoted in the literature. Tools for assessing children with dyslexia require greater specificity, such as a child's ability in phonological and non phonological tasks, which will enable us to classify them under appropriate subtype. This will in turn pave way for an appropriate treatment plan.

DAPIC can be used as a tool to profile Indian children with dyslexia who show difficulties in phonological and non phonological tasks of literacy. It also suggests that differentiating among dyslexia subtypes with specific impairments allows a more fine grained understanding of the disorder than simply comparing children with dyslexia and typically developing children.

8. Treatment Manual in English for Indian Children with Dyslexia (TMD – E) (Ranjini & Jayashree, 2010)

Children with dyslexia exhibit difficulties in a wide range of domains i.e. reading and writing skills, and hence the remediation for this population should focus on all aspects. One of the clearly defined current challenges for both researchers and Speech-Language Pathologists is to develop, disseminate and implement methods for training children on reading skills.

TMD has been developed for children with dyslexia, incorporating all the important domains crucial for the acquisition of fluent reading. This treatment manual can be used with English speaking Indian children diagnosed to have dyslexia in the age range of 11-13 years. The four important domains included in the manual are, Listening Comprehension, Phonological Awareness, Reading Skills and Reading Comprehension. The manual consists of

instructions, examples, stimuli and scoring patterns. TMD also serves as an important tool for clinicians working with children with dyslexia.

- 9. Cognitive Linguistic Assessment Protocol - Kannada [CLAP-K] (Aruna Kamath & Prema, 2001),**
- 10. Cognitive Linguistic Assessment Protocol- Telugu [CLAP-T] (Veena & Goswami, 2010)&**
- 11. Cognitive Linguistic Assessment Protocol - Malayalam [CLAP-M] (Lakshmi & Goswami, 2010)**

Cognitive functions such as attention, working memory and episodic memory are affected in senescence. Cognitive tools are a medium that helps transcend the limitations of the mind, such as memory, in activities of thinking, learning, and problem solving.

Cognitive Linguistic Assessment Protocol (CLAP) has been developed in three Indian languages namely Kannada, Telugu and Malayalam. CLAP will help assess the cognitive-linguistic abilities of persons in the age range of 65-80 years in the respective language. The assessment protocol consists of four main cognitive domains namely Attention, Memory, Reasoning and Problem Solving, and Organization. The manual consists of test domains, procedure, stimuli in the respective language script and IPA format, scoring sheet and normative data.

- 12. Development of Cognitive Linguistic Assessment Protocol for Children [CLAP-C] (Anuroopa & Shyamala, 2006)**

There is an intricate relationship between cognition and language. Cognitive processes like attention, memory and organization are especially important for comprehending and producing language. A speech pathologist plays a very important role in assessing these cognitive linguistic skills and rendering appropriate intervention for the clinical population lacking these skills.

The cognitive linguistic assessment protocol for children (CLAP-C) assesses the cognitive-linguistic abilities in Kannada speaking children in the age range of 4 – 8 years. The domains included in the test are Attention, Memory and Problem Solving. Testing is done both in the visual and auditory modalities. Test stimuli under each domain, instructions and scoring pattern are explained in the manual.

13. Development of Cognitive-Linguistic Assessment Protocol for children with Learning Disabilities [CLAP-LD] (Kavya & Shyamala, 2007)

Dyslexia, a common form of learning disability, is observed in 10% of the school-going population. Children with learning disability are also known to exhibit difficulties in cognitive-linguistic abilities and hence assessment in this domain becomes necessary.

CLAP- LD can be used to assess children with learning disability in the age range of 8-14 years. The domains included in the test are Attention, Memory and Problem Solving. Testing is done both in the visual and auditory modalities. Test stimuli under each domain, instructions and scoring pattern are available in the manual. Further, an insight into the performance of children with Learning Disability on the protocol has also been provided.

14. Comprehensive Language Assessment Tool for Children [CLAT-C] (Navitha, & Shyamala, 2009)

Cognitive processes like attention, memory and organization are important for comprehending and producing language. Language milestones are appropriate indicators for detecting language problems and are particularly helpful in the assessment of young children.

CLAT-C is a standardized assessment tool suitable for testing language and cognitive abilities of Indian children in the age range of 3- 6 years. Stimuli under the domains of reception, expression and cognition are given in the manual. The tool should be administered on parents/caregivers of children using the interview approach. Separate sheet is provided to record the

responses. Normative scores are also provided in the manual to facilitate comparison of the child's performance.

15. Clinical Protocol for Assessment of Swallowing in Adults [CP-ASA] (Meera, & Manjula, 2009)

Swallowing requires a complex series of events and coordination of the neurological, respiratory and gastrointestinal systems. The report of high incidence of dysphagia following stroke and consequent risk associated emphasizes the need for early identification and evaluation of dysphagia in adult population.

CP-ASA can be clinically used for the assessment of dysphagia in adults. The protocol comprises of five main domains, with sections and subsections within each. The important domains assessed are Posture, Respiratory, Sensory and Cognitive abilities, Cranial Nerve functions, Physical Examination of the Oral Mechanism, and the different stages of swallowing. Detailed procedure of assessment of each of these domains is given in the manual. The list of test materials and food items to be used during the administration is included in the manual. A four point rating scale is used for scoring the responses in each domain to obtain a profile of the person with swallowing difficulties.

16. Questionnaire to Evaluate the Extent of Burden on Caregivers of persons with Aphasia [QBCA] (Swathi & Goswami, 2008)

The onset of aphasia brings spectrum of changes in personal, familial and social domains and these changes vary with age, education, economic status, family composition, pre-morbid personalities, awareness of deficits and cognitive deficiencies. The family members of persons with aphasia need to devote significant amount of time and energy in taking care of the person. The Caregiver is the most effective communicator with the person with aphasia. Taking care of a person with aphasia can also be taxing for the family member financially, physically and emotionally. Communication breakdown can also occur between the caregiver and the person with aphasia. This burden may be

eased only when caregivers are educated adequately which can be effectively carried out using a questionnaire.

Thus, QBCA was developed in three different languages - English, Kannada and Malayalam. QBCA is a questionnaire which will help to understand the extent of burden on caregivers of person with aphasia. This in turn will help professionals to plan intervention more effectively. The questionnaire evaluates seven important domains namely Psychosocial, Emotional, Personal Relationships, Caregiver responsibility, Caregiver health, Communication Expectations and Caregiver Communication Style.

Conclusion

The above mentioned tools have thus been prepared in the format suitable for professional usage. Steps have been taken to print these materials and they will shortly be available for purchase from the All India Institute of Speech and Hearing, Mysore. This is one of the first attempts to disseminate the available clinical tests/tools developed as part of Masters' dissertation at AIISH. Any shortcomings/suggestions in this regard may be communicated to the Director, AIISH, Mysore and the same will be appreciated.

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