LEXICAL NEIGHBOURHOOD TEST FOR CHILDREN IN TELUGU

Prerna Alok Chandekar

Asha Yathiraj

All India Institute of Speech and Hearing

LEXICAL NEIGHBOURHOOD TEST FOR CHILDREN IN TELUGU

Prerna Alok Chandekar

Asha Yathiraj

All India Institute of Speech and Hearing

Lexical Neighbourhood Test for Children in Telugu
Prerna Alok Chandekar, Asha Yathiraj

PREFACE

The All India Institute of Speech and Hearing (AIISH) is a premier organization in the country mandated for human resource development, research, clinical care and public education in the field of communication disorders. The institute promotes research by giving particular emphasis to clinically relevant applied research on causes, control and prevention of communication disorders, assessment and treatment issues as well as the testing and refinement of new technologies for the speech, language and hearing disorders. A considerable number of tests, word lists and therapy materials are being created as by-products of such research works carried out as postgraduate and funded research. However, these valuable resources are mostly unused as they are not readily accessible for use in the clinical settings. Hence, a project has been initiated to identify, reorganise into suitable formats and publish clinically useful research works carried out at AIISH as independent books, and make them useful for the practicing audiologists and speech-language pathologists working across the country in different setups for the evaluation and management of communication disorders.

All the tests/ therapy materials that are prepared under this project are published under a series titled "*AIISH Tests & Therapy Resources*". The project team comprises: Dr. Prashanth Prabhu P., Assistant Professor in Audiology (Principal Investigator), Dr. Priya M. B., Lecturer in Speech Sciences (Principal Investigator), Dr. Shijith Kumar C., Library and Information Officer (Co-Investigator) and Ms. Merin Susan Mathew and Ms. Rekha D (Research Officers).

This book titled **Lexical Neighbourhood Test for Children in Telugu** is an outcome of the effort in the above direction. It was originally developed by **Ms. Prerna Alok Chandekar**, in partial fulfilment of her Master's dissertation under the guidance of **Prof. Asha Yathiraj.**

Dr. M. Pushpavathi
Director, AIISH

CONTENTS

Introduction

Speech stimuli have been found to aid in detecting perceptual difficulties that may go undetected if only pure tones were used. Pathologies in the retrocochlear region and higher auditory pathways have been reported to not manifest themselves if evaluated using only pure tones. Several word identification tests are available to determine the auditory perceptual difficulties of children with hearing impairment. At one extreme are simple tests such as the pattern perception test. On the other extreme are phonemically balanced (PB) open set word tests that can be made more difficult by adding distortion such as noise. For children who are in the process of developing speech and language, there is a need for a speech identification test that is neither too easy nor too difficult.

The Lexical Neighbourhood Test (LNT) (Kirk, Pisoni, & Osberger, 1995) has been found to serve as one such test. This test permits the evaluation of the auditory perceptual difficulty of children with hearing impairment before they get to the stage where they can be evaluated with PB words. It assesses spoken word recognition in order to reveal the perceptual processes employed by children, especially among those using cochlear implants. The test items of LNT were formed based on the frequency of occurrence of words in the language (word frequency) and the number of phonetically similar words surrounding the word (lexical density).

Brief description about the test

The Lexical Neighbourhood Test in Telugu has been developed and administered on 30 typically developing Telugu speaking children in the age range of 6 - 8 years. The test has two word lists with 40 words each, constructed based on the frequency of occurrence and lexical density. Each list has equal number of 'hard' and 'easy' words i.e., 20 easy words and 20 hard words which are randomized (Appendix A). Lexically easy words refer to more frequently occurring words with sparse neighbourhood whereas lexically hard words refer to less frequently occurring words with dense neighbourhood. The recorded word lists are presented through loudspeakers placed at zero degree azimuth. The subject will be instructed to listen to the words carefully and repeat them.

Presentation Level: 40 dB SL ref. Speech Recognition Threshold

1

Scoring

Score '1' for each correct response and '0' for incorrect response for both words and phonemes in the score sheet (Appendix B). If the purpose of evaluation is to get an overall idea of the perceptual difficulties of the child, then calculation of only word score is adequate. However, if the purpose of evaluation is to determine the specific difficulties of the child and to plan auditory listening training, then the phoneme score would enable in planning therapy better. Maximum word score is 40 for each list and maximum phoneme score for list 1 is 157 (Easy words - 82 & Hard words - 75) and list 2 is 161 (Easy words - 81 & Hardwords - 80).

Interpretation

The scores of the subject can be compared with the scores obtained from the study (Appendix C) to infer the results.

Clinical Implications

1. The test material is a clinically valid tool for assessing speech perception abilities in children.
2. The test can be administered on those children who perform well on simple closed set tests but perform poorly on open set PB word tests, as the difficulty of the test lies in between these two extremes of perceptual difficulty.
3. The scores obtained in the test are helpful in selection of appropriate listening devices and provide guidelines for planning therapy effectively.
4. The scores help in monitoring the progress of the child overtime, thereby being useful to evaluate the effectiveness of any therapy approach.
5. The test is used to tap the perceptual differences in children and can be used as a valid clinical tool in examining the perceptual processes underlying spoken word recognition in Telugu language.

Appendix A

List 1

Sl.No.	Words		Easy/Hard	Sl.No.	Words		Easy/Hard
1.	అన్న	/ənna/	Hard	21.	చూడు	/ʧūɖʊ/	Hard
2.	ఉండు	/ʊʊɳɖʊ/	Easy	22.	డబ్బు	/ɖəbbʊ/	Easy
3.	ఎండ	/ɛɳɖa/	Easy	23.	తండ్రి	/t̪əɳɖrɪ/	Easy
4.	అద్దం	/əd̪d̪əm/	Hard	24.	నేను	/nēnʊ/	Easy
5.	ఎంత	/ɛnt̪a/	Easy	25.	దున్న	/d̪ʊnna/	Hard
6.	అచ్చు	/əʧʧʊ/	Hard	26.	నిద్ర	/nɪd̪ra/	Easy
7.	ఐదు	/əɪd̪ʊ/	Easy	27.	నాది	/nād̪i/	Hard
8.	ఎక్కు	/ɛkkʊ/	Hard	28.	పాప	/pāpa/	Easy
9.	కాకి	/kākɪ/	Easy	29.	నెల	/nɛla/	Hard
10.	ఓడ	/ōɖa/	Hard	30.	బస్సు	/bəssʊ/	Easy
11.	కళ్ళు	/kəɭɭʊ/	Hard	31.	నూరు	/nūrʊ/	Hard
12.	గుర్రం	/gʊrrəm/	Easy	32.	భాష	/bʰāʃa/	Easy
13.	కట్టు	/kəʈʈʊ/	Hard	33.	నల్ల	/nəlla/	Hard
14.	గడ్డి	/gəɖɖɪ/	Easy	34.	పెట్టు	/pɛʈʈʊ/	Hard
15.	గుర్తు	/gʊrt̪ʊ/	Easy	35.	ప్రక్క	/prəkka/	Hard
16.	గొప్ప	/goppa/	Easy	36.	రోజు	/rōdʒʊ/	Easy
17.	కల	/kəla/	Hard	37.	రైతు	/rəɪt̪ʊ/	Easy
18.	చెవి	/ʧɛvɪ/	Easy	38.	మొన్న	/monna/	Hard
19.	కూలి	/kūlɪ/	Hard	39.	సన్న	/sənna/	Hard
20.	చీమ	/ʧīma/	Easy	40.	నీతి	/nīt̪ɪ/	Hard

Appendix A

List 2

Sl.No.	Words		Easy/Hard	Sl.No.	Words		Easy/Hard
1.	ఎలా	/ɛlā/	Easy	21.	తల్లి	/t̪əllɪ/	Hard
2.	అవ్వ	/əvva/	Hard	22.	దొంగ	/d̪oŋga/	Easy
3.	ఏమి	/ēmɪ/	Easy	23.	పైన	/pəɪna/	Easy
4.	ఆమె	/āmɛ/	Hard	24.	పాము	/pāmu/	Easy
5.	ఒక	/oka/	Easy	25.	పిండి	/pɪɳɖɪ/	Easy
6.	కోతి	/kōt̪ɪ/	Easy	26.	నీరు	/nīrʊ/	Hard
7.	కప్ప	/kəppa/	Hard	27.	నగ	/nəga/	Hard
8.	కొంగ	/koŋga/	Easy	28.	బుద్ధి	/bʊd̪d̪ʰɪ/	Easy
9.	క్రింద	/krɪnd̪a/	Easy	29.	నిప్పు	/nɪppʊ/	Hard
10.	కాయ	/kāja/	Hard	30.	మామ	/māma/	Easy
11.	కారు	/kārʊ/	Hard	31.	పెన్ను	/pɛnnʊ/	Hard
12.	కారం	/kārəm/	Hard	32.	రాత్రి	/rāt̪rɪ/	Easy
13.	చేప	/ʧēpa/	Easy	33.	రవి	/rəvɪ/	Easy
14.	గుద్దు	/gʊd̪d̪ʊ/	Hard	34.	పొట్ట	/poʈʈa/	Hard
15.	చెక్క	/ʧɛkka/	Hard	35.	రెండు	/reɳɖʊ/	Easy
16.	చెప్పు	/ʧɛppʊ/	Hard	36.	లేదు	/lēd̪ʊ/	Easy
17.	తల్లి	/t̪əllɪ/	Easy	37.	బరై	/bərɛ/	Hard
18.	తోలు	/t̪ōlʊ/	Hard	38.	రాదు	/rād̪ʊ/	Hard
19.	తాత	/t̪āt̪a/	Easy	39.	లారి	/lārɪ/	Hard
20.	దాని	/d̪ānɪ/	Easy	40.	వేడి	/vēɖɪ/	Hard

Appendix B

Score Sheet - List 1

Sl. No.	Words	Easy/ Hard	Score Word	Phoneme	Sl. No.	Words	Easy/ Hard	Score Word	Phoneme
1.	/ənna/	Hard			21.	/ʧū̃ɖʊ/	Hard		
2.	/ʋʊɳɖʊ/	Easy			22.	/ḍəbbʊ/	Easy		
3.	/ɛɳɖa/	Easy			23.	/t̪əɳɖrɪ/	Easy		
4.	/əḍḍəm/	Hard			24.	/nēnʊ/	Easy		
5.	/ɛɳt̪a/	Easy			25.	/ḍʊnna/	Hard		
6.	/əʧʧʊ/	Hard			26.	/nɪḍra/	Easy		
7.	/əɪḍʊ/	Easy			27.	/nāḍɪ/	Hard		
8.	/ɛkkʊ/	Hard			28.	/pāpa/	Easy		
9.	/kākɪ/	Easy			29.	/nɛla/	Hard		
10.	/ōɖa/	Hard			30.	/bəssʊ/	Easy		
11.	/kəɭɭʊ/	Hard			31.	/nūrʊ/	Hard		
12.	/gʊrrəm/	Easy			32.	/bʰāʃa/	Easy		
13.	/kəʈʈʊ/	Hard			33.	/nəlla/	Hard		
14.	/gəɖɖɪ/	Easy			34.	/pɛʈʈʊ/	Hard		
15.	/gʊrt̪ʊ/	Easy			35.	/prəkka/	Hard		
16.	/gʊppa/	Easy			36.	/rōdʒʊ/	Easy		
17.	/kəla/	Hard			37.	/rəɪt̪ʊ/	Easy		
18.	/ʧɛvɪ/	Easy			38.	/monna/	Hard		
19.	/kūlɪ/	Hard			39.	/sənna/	Hard		
20.	/ʧī̃ma/	Easy			40.	/nī̃t̪ɪ/	Hard		

		Word Score	Phoneme Score
No. of Easy Words Correct			
No. of Hard Words Correct			
Total			

Appendix B

Score Sheet - List 2

Sl. No.	Words	Easy/ Hard	Score Word	Phoneme	Sl. No.	Words	Easy/ Hard	Score Word	Phoneme
1.	/ɛlā/	Easy			21.	/t̪əllɪ/	Hard		
2.	/əvva/	Hard			22.	/d̪oŋga/	Easy		
3.	/ēmɪ/	Easy			23.	/pəɪna/	Easy		
4.	/āmɛ/	Hard			24.	/pāmu/	Easy		
5.	/oka/	Easy			25.	/pɪɳɖɪ/	Easy		
6.	/kōt̪ɪ/	Easy			26.	/nīrʊ/	Hard		
7.	/kəppa/	Hard			27.	/nəga/	Hard		
8.	/koŋga/	Easy			28.	/bʊɖɖʰɪ/	Easy		
9.	/krɪnd̪a/	Easy			29.	/nɪppʊ/	Hard		
10.	/kāja/	Hard			30.	/māma/	Easy		
11.	/kārʊ/	Hard			31.	/pɛnnʊ/	Hard		
12.	/kārəm/	Hard			32.	/rāt̪rɪ/	Easy		
13.	/ʧẽpa/	Easy			33.	/rəvɪ/	Easy		
14.	/gʊɖɖʊ/	Hard			34.	/poʈʈa/	Hard		
15.	/ʧɛkka/	Hard			35.	/reɳɖʊ/	Easy		
16.	/ʧɛppʊ/	Hard			36.	/lēd̪ʊ/	Easy		
17.	/t̪əllɪ/	Easy			37.	/bərrɛ/	Hard		
18.	/t̪ōlʊ/	Hard			38.	/rād̪ʊ/	Hard		
19.	/t̪āt̪a/	Easy			39.	/lārɪ/	Hard		
20.	/d̪ānɪ/	Easy			40.	/vēɖɪ/	Hard		

	Word Score	Phoneme Score
No. of Easy Words Correct		
No. of Hard Words Correct		
Total		

Appendix C

Word Scores

List	Word Type	Mean (%) Word Score	SD	Range of Word Score	
				Minimum	**Maximum**
List 1	***Easy**	19.56 (97.83%)	0.77	17	20
	*Hard	18.60 (92.66%)	0.93	17	20
	#Total	38.16 (95.41%)	1.34	36	40
List 2	***Easy**	19.36 (96.83%)	0.71	17	20
	*Hard	18.80 (94.00%)	1.06	16	20
	#Total	38.16 (95.45%)	1.36	35	40

Note: * - Maximum scores for easy and hard words = 20
      # - Maximum Total Score = 40

Phoneme Scores

List	Word Type	Mean (%) Phoneme Score	SD	Range of Phoneme Score	
				Minimum	**Maximum**
#List 1	**Easy**	81.5 (99.39%)	0.93	79	82
	Hard	73.5 (97.99%)	1.19	70	75
	Total	155 (98.72%)	1.66	152	157
^List 2	**Easy**	80.20 (99.01%)	0.99	77	81
	Hard	78.53 (98.16%)	1.43	74	80
	Total	158.7 (98.56%)	1.84	155	161

Note: #Maximum phoneme score =157 (Easy words - 82; Hard words - 75)
      ^Maximum phoneme score = 161 (Easy words - 81; Hard words - 80)

AIISH: GENESIS AND GROWTH

The All India Institute of Speech and Hearing is a premier institute in the country imparting training in the field of Speech and Hearing. Established on 9th of August 1965 as an autonomous organization, AIISH caters to manpower generation in the field, promoting research and providing rehabilitation services in the area. The institute is located on a sprawling area of 39 acres (two campuses) in Mysore. The institute registered as a Society under the Societies Registration Act XXI of 1860 (Punjab Amendment Act, 1957) and its functioning as an autonomous body under the aegis of the Union Ministry of Health and Family Welfare. Established primarily as training institute, it started training programs at postgraduate level in 1967 followed by B.Sc (Speech and Hearing) in 1968. The institute now offers three Diploma programs: Diploma in Hearing Aids and Ear mould technology, Diploma in Training the Young Hearing Impaired, Diploma in Hearing, Language and Speech through distance mode; two graduate programs: Bachelors in Audiology, Speech and Language Pathology (B. ASLP) and B. S. Ed (Hearing Impairment); three Master Programs (M.Sc. in Audiology, M.Sc. in Speech- Language Pathology and M.S.Ed. in Hearing Impairment); two PG Diploma courses (PG Diploma in Forensic Sciences and Technology, Clinical Linguistics for SLPS); two doctoral programs (Ph.D. in Audiology and Speech-Language Pathology); and Post-Doctoral Fellowships. The institute also conducts short- term training and orientation programs for professionals in allied specialties.

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. The institute has also been recognized as a Nodal Center for the implementation of the National Program for Prevention and Control of Deafness, Ministry of Health and Family Welfare, Government of India as well as for generating manpower for the same. Owing to its academic and research excellence, the institute has been assessed and accredited by NAAC with 'A' grade . Also, it is an ISO 9001:2015 certified organization for its brilliance of quality. Furthermore, it has been recognized as College with Potential for Excellence by the UGC, and as a Collaborative Organization for the Rashtriya Bal Swasthya Karyakram (RBSK), a Govt. of India scheme under the Ministry of Health and Family Welfare. The institute is a Centre of Excellence in Communication Disorders and a Govt. of India recognized Disability Certification Centre.

The functioning of the institute is under the direction of the Executive Council with Hon'ble Union Minister for Health and Family Welfare as the Chairman and the Hon'ble Minister of Health and Family Welfare, Government of Karnataka as Vice- Chairman. The other statutory bodies of the institute are the Finance Committee and the Academic Sub Committee.

All India Institute of Speech and Hearing

₹ 500/-