AIISH Tests & Therapy Resources Series

DICHOTIC RHYME TEST IN KANNADA

Sangamesh C.

K. Rajalakshmi

All India Institute of Speech and Hearing

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This work is compiled as a part of an AIISH Funded Research Project on **Product Development of Useful Products of Research carried out at AIISH** by a research team comprising:

1. Dr. Prashanth Prabhu P., Assistant Professor in Audiology as Principal Investigator,
2. Dr. Priya M.B., Lecturer in Speech Sciences as Principal Investigator,
3. Dr. Shijith Kumar C., Library and Information Officer as Co-Investigator
4. Ms. Merin Susan Mathew and Ms. Rekha D., as Research Officers

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 **Dichotic Rhyme Test in Kannada** is an outcome of the effort in the above direction. It was originally developed by **Mr. Sangamesh C**., in partial fulfilment of his Master's dissertation under the guidance of **Prof. K. Rajalakshmi.**

Dr. M. Pushpavathi
Director, AIISH

CONTENTS

Introduction

Central Auditory Processing Disorder (CAPD) refers to difficulties in processing auditory information in the central nervous system, as demonstrated by poor performance in one or more of the following skills: sound localization and lateralization; auditory discrimination; auditory pattern recognition; temporal aspects of audition, including temporal integration, temporal discrimination (e.g., temporal gap detection), temporal ordering, and temporal masking; auditory performance in competing acoustic signals (including dichotic listening); and auditory performance with degraded acoustic signals.

Conclusive diagnosis of CAPD cannot be made until specialized auditory testing is completed and other etiologies have been ruled out. Tests used for assessing central auditory functions fall under two major categories: behavioral and electrophysiological. The behavioral tests include monaural low-redundancy speech tests, dichotic speech tests, temporal patterning tests, and binaural interaction tests. Dichotic listening tasks utilizing sentences, words, digits, and syllables have been useful in predicting cerebral dominance for speech.

Brief description about the test

Dichotic Rhyme Test in Kannada assesses the binaural integration phenomenon in Kannada speaking individuals and can be used as an assessment tool for CAPD. The test was developed and validated by administering it on 50 native Kannada speaking normal hearing adults (25 males and 25 females) between the age range of 18 and 30 years.

The test consists of 18 pairs of commonly spoken, rhyming, bi-syllabic words in Kannada (Appendix A). These words begin with plosives (/p/, /t̪/, /k/, /b/, /d̪/, and /ɡ/) and the two words in each pair differed only in the initial consonant. These word pairs are dichotically presented to the subjects at an intensity level of 60 dB HL. The task of the subject will be to write down the words heard in each ear after each presentation in a response sheet (Appendix B). The responses will be scored in terms of single correct scores, double correct score, and ear correct scores.

Scoring

The responses are scored as follows:

Single Correct Scores (SCS): Total number of correct responses to stimuli presented in the right ear or the total number of correct responses to stimuli presented in the left ear.

Double Correct Score (DCS): Total number of correct responses to stimuli presented in both ears.

Ear Correct Scores (ECS): Double Correct Score + Single Correct Score of respective ear.

Results

There exists a significant right ear advantage for the dichotic stimuli. The double correct scores were lower than the ear correct scores. The mean double correct scores as well as ear correct scores for both right and left ears were greater in females compared to males. It is recommended to consider ear correct scores rather than double correct scores in clinical practice owing to the high variability observed in double correct scores.

Interpretation

The scores obtained by an individual can be calculated and compared with the scores obtained from the study (Appendix C) to infer the results.

Appendix A

Word List I

Sl. No.	Right Ear		Left Ear	
1.	ಬಗೆ	/bəgɛ/	ದಗೆ	/d̪əgɛ/
2.	ದರ	/d̪əra/	ತರ	/t̪ara/
3.	ಬರ	/bəra/	ದರ	/d̪əra/
4.	ಬಾಳಿ	/bāɭɪ/	ಗಾಳಿ	/gāɭɪ/
5.	ಗಂಡ	/gənɖa/	ದಂಡ	/d̪ənɖa/
6.	ದಂಟು	/d̪ənʈʊ/	ಗಂಟು	/gənʈʊ/
7.	ಬಿಳಿ	/bɪɭɪ/	ಗಿಳಿ	/gɪɭɪ/
8.	ಗಡಿ	/gəɖɪ/	ಕಡಿ	/kəɖɪ/
9.	ಪಾಲು	/pālʊ/	ಕಾಲು	/kālʊ/
10.	ತಪ್ಪು	/t̪əppʊ/	ಕಪ್ಪು	/kəppʊ/
11.	ಗರಿ	/gərɪ/	ಕರಿ	/kərɪ/
12.	ಪಾರು	/pārʊ/	ಕಾರು	/kārʊ/
13.	ತಿವಿ	/t̪ɪvɪ/	ಕಿವಿ	/kɪvɪ/
14.	ಪಡಿ	/pəɖɪ/	ತಡಿ	/t̪əɖɪ/
15.	ಬೆನ್ನು	/bɛnnʊ/	ಪೆನ್ನು	/pɛnnʊ/
16.	ಪಂಟ	/pənʈa/	ಬಂಟ	/bənʈa/
17.	ಪಡೆ	/pəɖe/	ತಡೆ	/t̪əɖe/
18.	ದಂಡ	/d̪ənɖa/	ತಂಡ	/t̪ənɖa/

Word List II

Sl. No.	Right Ear		Left Ear	
1.	ದರ	/d̪ərə/	ಬರ	/bərə/
2.	ಗಂಟು	/gəɳʈʊ/	ದಂಟು	/d̪əɳʈʊ/
3.	ಕಾಲು	/kālʊ/	ಪಾಲು	/pālʊ/
4.	ಕಿವಿ	/kɪvɪ/	ತಿವಿ	/t̪ɪvɪ/
5.	ಪೆನ್ನು	/pɛnnʊ/	ಬೆನ್ನು	/bɛnnʊ/
6.	ತರ	/t̪ərə/	ದರ	/d̪ərə/
7.	ದಂಡ	/d̪əɳɖə/	ಗಂಡ	/gəɳɖə/
8.	ಕಡಿ	/kəɖɪ/	ಗಡಿ	/gəɖɪ/
9.	ಕಾರು	/kārʊ/	ಪಾರು	/pārʊ/
10.	ತಡಿ	/t̪əɖɪ/	ಪಡಿ	/pəɖɪ/
11.	ಗಾಳಿ	/gāɭɪ/	ಬಾಳಿ	/bāɭɪ/
12.	ದಗೆ	/d̪əgɛ/	ಬಗೆ	/bəgɛ/
13.	ಕರಿ	/kərɪ/	ಗರಿ	/gərɪ/
14.	ಬಂಟ	/bəɳʈa/	ಪಂಟ	/pəɳʈa/
15.	ಗಿಳಿ	/gɪɭɪ/	ಬಿಳಿ	/bɪɭɪ/
16.	ತಂಡ	/t̪əɳɖa/	ದಂಡ	/d̪əɳɖa/
17.	ಕಪ್ಪು	/kəppʊ/	ತಪ್ಪು	/t̪əppʊ/
18.	ತಡೆ	/t̪əɖɛ/	ಪಡೆ	/pəɖɛ/

Appendix B

RESPONSE SHEET

Name: Date:
Age/Sex: Native Language:
Responses: Word List:

Sl. No.	Right Ear	Left Ear	SCS(✓/×)		DCS ✓/×
			Right Ear	Left Ear	
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
Total					

	Right Ear	Left Ear
SCS		
DCS		
ECS		

Interpretation:

Appendix C

Scores

		Male		Female	
		Mean	**SD**	**Mean**	**SD**
Double Correct Score		7.16	7.70	11.52	9.41
Ear Correct Score	**Right**	22.32	4.16	24.24	4.75
	Left	18.16	4.35	21.64	3.45

Appendix D

SAMPLE RESPONSE SHEET - I

Name: XXX
Date: xx/xx/xxxx
Age/Sex: 27 years/ Female
Native Language: Kannada
Responses:
Word List: I

Sl. No.	Right Ear	Left Ear	SCS(✓/×)		DCS
			Right Ear	Left Ear	✓/×
1.	/bəgɛ/	/d̪əgɛ/	✓	✓	✓
2.	/d̪əra/	/d̪əra/	✓	×	×
3.	NR	/d̪əra/	×	✓	×
4.	NR	NR	×	×	×
5.	/gəɳɖa/	/d̪əɳɖa/	✓	✓	✓
6.	/d̪əɳʈʊ/	/gəɳʈʊ/	✓	✓	✓
7.	/bɪlɪ/	/bɪlɪ/	✓	×	×
8.	/gəɖɪ/	/kəɖɪ/	✓	✓	✓
9.	/pālʊ/	/kālʊ/	✓	✓	✓
10.	/ʈ̪əppʊ/	/kəppʊ/	✓	✓	✓
11.	/gərɪ/	/kərɪ/	✓	✓	✓
12.	/pārʊ/	/pārʊ/	✓	×	×
13.	/ʈɪvɪ/	/kɪvɪ/	✓	✓	✓
14.	/pəɖɪ/	/ʈ̪əɖɪ/	✓	✓	✓
15.	/bɛnnʊ/	/pɛnnʊ/	✓	✓	✓
16.	NR	NR	×	×	×
17.	/pəɖe/	NR	✓	×	×
18.	/d̪əɳɖa/	/ʈ̪əɳɖa/	✓	✓	✓
		Total	15	12	11

Note: NR – No response

Scoring:

	Subject scores	
	Right Ear	**Left Ear**
SCS	15	12
DCS	11	
ECS	15+11=26	12+11=23

Interpretation: Indication of Normal Binaural Integration

Appendix D

SAMPLE RESPONSE SHEET - II

Name: XXX
Age/Sex: 29 years/ Male
Responses:

Date: xx/xx/xxxx
Native Language: Kannada
Word List: I

Sl. No.	Right Ear	Left Ear	SCS(✓/×)		DCS
			Right Ear	Left Ear	✓/×
1.	/bəgɛ/	/bəgɛ/	✓	×	×
2.	/d̪əra/	NR	✓	×	×
3.	NR	/d̪əra/	×	✓	×
4.	/bāl̪ɪ/	/bāl̪ɪ/	✓	×	×
5.	/d̪əra/	/d̪əra/	×	×	×
6.	/d̪ənʈʊ/	/gənʈʊ/	✓	✓	✓
7.	NR	/gɪl̪ɪ/	×	✓	×
8.	/gədɻɪ/	/kədɻɪ/	✓	✓	✓
9.	/ālʊ/	/pālʊ/	×	×	×
10.	NR	NR	×	×	×
11.	/gərɪ/	/kərɪ/	✓	✓	✓
12.	/kārʊ/	NR	×	×	×
13.	/t̪ɪvɪ/	NR	✓	×	×
14.	/ədɻɪ/	/pədɻɪ/	×	×	×
15.	/bɛnnʊ/	/pɛnnʊ/	✓	✓	✓
16.	NR	NR	×	×	×
17.	/pəd̪ɛ/	NR	×	×	×
18.	/d̪ənɳḍa/	/t̪ənɳḍa/	✓	✓	✓
		Total	9	7	5

Scoring:

	Subject scores	
	Right Ear	**Left Ear**
SCS	9	7
DCS	5	
ECS	9+5=16	7+5=12

**Note: Double correct scores are not considered for interpretation due to high variability, interpretation is based on Ear Correct scores.*

Interpretation: Indication of Poor Binaural Integration.

AIISH: GENESIS AND GROWTH

The All India Institute of Speech and Hearing is a primer Institute in the country imparting training in the field of Speech & 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 & 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 & Family Welfare. Also, 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.

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