Adapting the Multilingual Assessment Instrument for Narratives to Tamil

Kannan Abinayaa

Sri Ramachandra Institute of Higher Education and Research, India

Lakshmi Venkatesh*

Sri Ramachandra Institute of Higher Education and Research, India

P Arul Nehru

Azim Premji University, India

Madhavi Gayathri Raman

The English and Foreign Languages University, India

This paper reports on the adaptation of the Multilingual Assessment Instrument for Narratives (MAIN) to Tamil. We first briefly provide an overview of the Tamil language and the Tamil population in the southern state of Tamil Nadu in India and then we describe in detail the multiple phases of the adaptation process including input from some pilot data from Tamil-speaking children.

1 Background

The Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2012; 2015; 2019) is a tool designed and developed to assess narrative abilities in children from multilingual and multicultural backgrounds. It has been used to elicit and analyze children's comprehension and production of narratives in a large number of languages and various elicitation modes: telling, retelling and model story (e.g., Bohnacker, 2016; Kunnari et al., 2016; Lindgren, 2019; Madappa et al., 2020; Öztekin, 2019; Wehmeier, 2019). The tool's design allows for studying and comparing production of macrostructure and microstructure as well as comprehension of narratives in a bilingual's person languages. The story structure of the narratives, their structural

^{*} Corresponding author: lakshmiv@sriramachandra.edu.in

complexity, use of internal state terms and microstructure aspects, can be studied by eliciting narratives in the different modes. Literal and inferential comprehension of narratives can be assessed using the comprehension questions provided in the tool. The four stories and their picture stimuli are carefully constructed to be culturally appropriate for the usage of the tool among a diverse population.

This paper describes the adaptation of MAIN to the Tamil language as spoken in India, a country that is home to 121 different languages, including 22 scheduled and 99 non-scheduled languages (Census of India, 2011). The scheduled languages are those included in the eighth schedule of the constitution of India which lists the official languages of the country. The People's Linguistic Survey of India (2011-2012), a nationwide survey of the living languages in the country, reported the existence of 780 spoken languages and 66 different scripts in India (Devy, 2018). In a population of 1.38 billion, there are approximately 250 million bilinguals and more than 85 million multilingual speakers speaking three or more languages. The multilingual context underscores the need for language specific tools for understanding typical development of language among children as well as clinical assessment of children suspected of language delays. Indeed, there have been a few focused efforts in the field of speech language pathology to develop tools for speech-language assessment in multiple languages (Chengappa, 2001). However, these have been restricted to development of word lists for assessment of speech production skills or the assessment of semantics and syntax among children in select languages. Tools to assess narrative skills in multiple languages are lacking. Narratives provide contextualized language samples from children. Hence tools to assess narratives are ecologically valid and less biased for the assessment of language among multilingual children than the standardized tests created for monolinguals. The adaptation of a tool such as MAIN is crucial for language assessment and can be useful for exploring narrative skills among children in a multilingual and linguistically diverse environment as seen in India.

1.1 MAIN in Indian Languages

MAIN has so far been adapted to 11 Indian languages: Bengali, Bagri, Gondi (Chimirala, 2020), Hindi (Madappa et al., 2020), Halbi (Chimirala, 2020), Kannada (Madappa et al., 2020), Konkani, Malayalam (Madappa et al., 2020), Odia, Telugu and Urdu (Hamdani et al., 2020). Marathi and Punjabi adaptations are currently in progress. The adapted Hindi (see Gurung, 2018; Madappa et al., 2020) and Kannada (see Madappa, 2018; Madappa et al., 2020) versions have been piloted with bilingual populations (Hindi-English and Kannada-English) and differences in narrative measures between the two languages Hindi and English, as well as between Kannada and English have been profiled (Gurung, 2018; Madappa, 2018; Madappa et al., 2020). Narratives elicited through the adapted versions have also identified children 'at risk' for Specific Language Impairment in both languages (Gurung, 2018; Madappa, 2018). The adaptations of MAIN into the Halbi and Gondi (Dantewada) languages for the Halbi and Gondi communities of India have been used to elicit and study narratives in the first and second languages of 54 children speaking Gondi-Hindi and Halbi-Hindi (Chimirala, 2020). The Hindi and Telugu versions of MAIN were used in a recent longitudinal project focusing on multilingualism and multiliteracy in primary education in India with 1,200 children (Tsimpli et al., 2019). In addition to several adaptations and studies from around the world, these studies of Indian languages have further exemplified the robust nature of MAIN to investigate children's narrative comprehension and production across languages and cultures. Studies on narrative production among Tamil speaking children have used various tasks, employing different modes of eliciting narratives and were scored using variable scales (Bhuvaneswari, 2017; Priyadharshini et al., 2017; Venkatraman & Thiruvalluvan, 2021). A standard set of stories with testing and scoring procedures will have implications for use in both clinical and research contexts. This served as the motivation to adapt MAIN to Tamil.

2 A short description of the Tamil language in India

Tamil is a language belonging to the South Dravidian branch of the Dravidian family and is spoken in various parts of the world. The southern state of India, Tamil Nadu, with a population of over 96 million, has the highest concentration of Tamil speakers (Census India, 2011). Tamil is also spoken in other parts of India and in other countries like Malaysia, Singapore and Sri Lanka with an extensive diaspora in several other regions of the world (Muthusamy et al., 2020). Several dialects of Tamil have emerged over the two thousand years of evolution of the Tamil language (Steever, 2009). Tamil is the official language of the state of Tamil Nadu with its 38 districts. The Tamil language spoken across the state can now be categorized into six regional dialects: Northern dialect, Western dialect, Central dialect, Eastern dialect, Southern dialect, and Sri Lankan dialect (Muthusamy et al., 2020; Steever, 2009). The most populous city in Tamil Nadu is the state's urban capital, Chennai, which is one of the largest cultural, educational and economic centres of India. The city hosts an amalgamation of diverse groups of people speaking a range of dialects of Tamil and other Indian languages. In addition to geographical variations, there exist social dialects of Tamil and finally the diglossic variations further discussed in the following section (Muthusamy et al., 2020; Steever, 2009).

2.1 Diglossia in Tamil: Literary Tamil and standard spoken Tamil

Steever (2009) describes diglossia as "a situation in which two varieties of the same language live side by side, each performing a different function. It involves the use of two different variants of a single language." Diglossic variations prevalent in Tamil are phonological, lexical and grammatical variations between the formal variety (/sentamit/))¹ of Tamil and informal variety (/kotuntamit/) (Krishnamurti, 2003; Steever, 2009). The formal variety is also referred to as literary Tamil. The two varieties of Tamil differ and complement each other in their functions: the formal variety is used mainly in writing, while giving platform speeches, and in television broadcasts, and the informal variety is used in face-to-face conversations (Muthusamy et al., 2020). An example of a lexical difference between the varieties is shown in (1).

¹ To increase readability throughout the text, we represent words in Tamil using the alphabet of the International Phonetic Association (IPA), 2005.

(1) a)	pinn∧r (formal)	b) лррлглт (informal)		
	after	after		
	'after'	'after'		

An example of a morphological difference in diglossia is the possessive noun shown in (2).

(2) a)	$/\Lambda v \Lambda nud \Lambda j \Lambda / (formal)$	b) /ʌʊʌnodʌ/ (informal)
	Λvan-udΛjΛ	ΛυΛn-odΛ
	he-POSS	he-POSS

Such diglossic variations present in the daily lives of people, such as reading the formal variety of Tamil in print materials, using the informal variety in day-to-day conversations and listening to a mixture of both in televised commercials and platform speeches, requires the speaker, listener or reader's ability to navigate between a number of differences to understand and communicate effectively (Steever, 2009). Extensive research on the diglossic varieties of spoken Tamil in Tamil Nadu and Singapore led Schiffman (1998) to use the term Standard Spoken Tamil (SST) to refer to a variety of spoken Tamil that has likely emerged from every discourse of educated people through informal consensus. Schiffman (1998) described that the standard variety avoids regionalisms and serves for communication among persons speaking different dialects.

2.2 Tamil: An inflectionally rich language

Tamil is a morphologically rich language characterized as entirely agglutinating and exclusively suffixal (Krishnamurti, 2003; Lehman, 1989). The main parts of speech are nouns and verbs which can appear in simple as well as in compound forms. The morphological features of the language are best described by its noun and verb morphology. Nouns are inflected for person, case, gender and number (Krishnamurti, 2003). In Tamil, there are two gender classifications, namely *uyartinai* (/ujArținai) 'rational' and *ahrinai* (/Ahrinai/) 'irrational'. Generally, deities, men and women are classified as rational, while children and animals are classified as belonging to the irrational gender forms in some written contexts such as stories (fables) and also spoken forms (Steever, 2009).

The use of certain cases corresponds to e.g., constructions with prepositions in languages such as English. For example, for the phrase 'in the water', the noun is inflected with locative case marking, as shown in (3).

(3) /tʌnni:r-il/ water-LOC 'in the water'

Verbs are inflected for tense, person, number and gender. Example of a verb 'jump' marked for tense with a PNG concord is given in (4).

(4) /gudi-t-ta:n/ jump-PST.3-M.SG 'jumped' (a single male) As the subject features are inflections on the verb, subject pro-drop (pronoun-drop) is quite common (Kothandaraman, 1990). In other words, the pronouns may be dropped resulting in the possibility to omit the subject of a finite construction. Tamil follows the SOV (subject-object-verb) clause structure and permits wide scrambling (Sankaravelayuthan & Gejeswari, 2019). Tamil has a word order such that the subject, object, adverb, etc., can be positioned anywhere before the finite verb. The prominence of an element is attained by placing it in the word-initial position (Sankaravelayuthan & Gejeswari, 2019). In Tamil, clauses are combined either by use of coordinating elements or with non-infinite and infinite verb forms in subordination. Complex sentences are predominantly formed by subordination or complementation. In this case, a subordinate clause is formed by several types of inflections on the verb (Lehman, 1989). For example, in the sentence *If she eats, he will also eat*, instead of using the conjunction *if*, as in English, the verb /sa:ppidi/ 'eat' is inflected with a conditional suffix /-a:l/ and the pronoun /Avan/ 'he' is inflected with coordinating clitic /-um/ 'also', as seen in (5).

(5) /AvAl sa:ppi-ta:l, AvAn-um sa:ppidi-va:n/ she eat-if-COND-PRS.3-F.SG he-also-ADV eat-FUT.3-M.SG 'If she eats, he will also eat'

3 The Development of the Tamil MAIN

Here we describe the adaptation of MAIN into the Tamil language using multiple iterative steps and pilot data collection from children in the age range of 3-8 years old. The guidelines provided by Bohnacker and Gagarina (2020) for the revised English MAIN were followed for the adaptation process. Specific challenges that arose due to the typological differences between English and Tamil and the modifications made in the process of adaptation has been explained in the following sections as three separate adaptation cycles.

3.1 Adaptation cycle I

The first drafts of the MAIN story scripts, comprehension questions, scoring protocol and task instructions were developed by a Tamil-English bilingual speaker with a linguistic training. The number of goals (G), attempts (A) and outcomes (O), the GAO-sequences, the number of internal state terms (ISTs) as initiating events and as reactions, and the logical sequence of clauses were matched adequately to the English scripts. Direct speech sentences were kept similar to the English scripts. However, challenges were encountered at the microstructural level due to morphological differences between the languages. For example, there are no articles (e.g., *the*, *a*, etc.) in Tamil. The numerical /ori/ 'one' or demonstrative pronouns may serve articles' function in Tamil (Annamalai & Steever, 2015). For example, in the Baby Birds story, *a big worm* was adapted to /ori perijA putu:/ 'one big worm'. There were around 10 to 12 (in)definite articles in each story in the English script that could not be replaced by numerical or demonstrative pronouns in the Tamil script and had to be dropped. For example, the article *the* in sentences like *the butterfly flew away quickly and the cat fell into the bush* were dropped in the Tamil adaptation.

Similarly, coordination and subordination in Tamil differ significantly from English. The use of *and* as a coordinating structure is marked with /um/, which is a clitic in Tamil. However, only infinitive and verbal participle clauses can be coordinated using this clitic. All other forms of sentence coordination involving *and* and *that* in the English version are produced by embedding and adjoining the clauses into another sentence which is referred to as complementation (Lehman, 1989). As a result, the sentences are coordinated by morphological modifications and additions made to root words without using a conjunction in the sentence. Hence, matching the exact number of coordinating structures was challenging. One such example of addition of adverbial participle instead of a conjunction in the *Baby Birds* story can be seen in the adaptation of the sentence *The cat let go of the baby bird* **and** *the dog chased him away*, as in (6).

(6) /pu:nai pArAvai kunţj-ai vitţA-udAn na:i AdA cat bird baby-POSS leave-as soon as-ADV dog it ţurAtţi-vitţAdi/
chaseaway-PST.3N.SG
'As soon as the cat let go of the baby bird, the dog chased it away.'

Unlike English, Tamil does not have flexibility in the arrangement of clauses (Sankaravelayuthan & Gejeswari, 2019). Specifically, if all subordinate clauses were placed before the main clause in Tamil, the sentence might lack clarity and become unnatural. Therefore, a few long sentences in English were broken down into simple sentences in Tamil. Consequently, the order of events within the sentence also changed. For example, in the Baby Goats story, the sentence 'One day there was a mother goat who saw that her baby goat had fallen into the water and that it was scared' was broken down into two sentences, as in (7).

(7) a) /ori	na:l	ori	Λmma:	a:0	di	ЛdЛnudЛjЛ	kutti/
one	day	one	mother	go	at	its-POSS.3-F.SG	baby
/ <u>t</u> An	ni:ril	vijuj	<u>ıd</u> ∧dai pa	:r <u>t</u> ∧d॒i/			
wate	er-LOC	fall	saw	-PST.	3-F.SG		
'One day a mother goat saw that her baby fell into the water.'							
b) /a:[[i kutti	romb/	∆ b∧j∧ <u>nd</u> i	poj	irindvdi/	1	
bab	y-goat	very	scare	go	was-PST.	3-N.SG	

'The baby goat was very scared.'

At the end of cycle I, a preliminary adaptation of the story scripts, comprehension questions, scoring protocol and instructions for the tasks were complete and ready for further review.

3.2 Adaptation cycle II

The first version of the Tamil story scripts and the comprehension questions were reviewed by eight Speech-Language Pathologists (SLPs) with experience in working with children and eliciting language samples from children. Further, it was also validated by three linguists with prior knowledge of this tool and its Indian language adaptations. In addition, the scripts were reviewed by three Tamil speakers who are primary caregivers of young children between 5-8

years old to ascertain the scripts' naturalness and closeness to the native language. Finally, the entire manual including the task instructions and scoring protocols were reviewed by two SLPs and two rehabilitation specialists who are native Tamil speakers and are experienced in working with children. All reviews were done individually and independently. Issues addressed at this level were predominantly about the selection of words based on their linguistic and cultural appropriateness across a range of children. The loan words 'balloon' and 'bucket' were retained in the same form (but written in Tamil script) instead of their Tamil equivalents as the reviewers agreed that the borrowed words are easily recognizable, frequently used in everyday conversations and hence might facilitate a better understanding of the stories. The choice of vocabulary for certain words was made carefully to make the story scripts more suitable for assessment of children speaking a range of dialects. Some of the words chosen for the script included /Amma:/ for 'mother' in place of its synonym /ta:i/, /sa:ppa:di/ for 'food' in place of its synonym /unAvi/, /gudittadi/ 'to jump' in place of /pa:indAdi/ 'to jump forward' and /sa:ma:n/ 'things' in place of its synonym /porul/. The selection was made by the authors through consensus after reviewing the suggestions from the reviewers. Overall, there were four such word changes made in the Baby Birds story and seven each in the other three stories.

In consonance with the gender classification mentioned earlier in the description of Tamil language in terms of rational and irrational, the animals were referred to as $/\Delta di/\Delta ding\Delta/$ 'it/they' instead of $/\Delta v \Delta n / \Delta v \eta g \Delta$ / 'he/they' in the stories. Specific to comprehension questions, the word order of the questions was reorganized to make the questions sound idiomatic. Therefore, 'wh-words' placed before the noun (the grammatical subject) at the beginning of the sentence were removed and were instead added before the verb (action by the protagonist). This can be seen in the case of the question *Who does the mother bird like best, the cat or the dog? Why? (Baby Birds*, D10), in which the word /jɑ:rai/ 'who' was placed before the verb /pudikum/ 'like' as seen below in (8). This change in the question holds the same meaning and is the form of question that is used more frequently in Tamil, thus making it easier for children to understand the specific aspect of the story under question.

- (8) a) /ja:rai Amma: pArAvaikki rombA pudikum/ who mother bird-PREP more like
 'Who does the mother bird like more?'
 - b) /Amma: pArAvaikki ja:rai rombA pudikum/ mother bird-PREP who very like
 'Who does the mother bird like more?'

Following the review, the Tamil story scripts were compared critically to the story scripts developed for Malayalam, another Dravidian language spoken in India (Madappa et al., 2020). The change in the order of events within sentences observed in Tamil was found to be similar to the Malayalam story scripts. The same type of breakdown of complex and compound sentences to simpler sentences was found in both language versions; however, Tamil had fewer such occurrences than Malayalam. Both language versions also opted to use English loan words like *balloon* and *bucket* for ease of understanding.

3.3 Adaptation cycle III

The adapted story scripts, task instructions, comprehension questions and scoring protocols were used to collect the first round of pilot data from children. A group of eight children between the ages of five and eight years living in the Chennai region produced the stories in the telling mode and retelling mode and answered the comprehension questions. The narrations were carried out as per the protocol for the two modes in the manual (Bohnacker & Gagarina, 2020). Children found the stories to be interesting and new. During the retelling task, it was observed that children were not familiar with a few words used and hence, these words were replaced with more commonly used words (synonyms) for improved familiarity and comprehension. For example, the words /podAr/ 'bush' and /pAdAri/ 'startled' were replaced with /mul ffedi/ 'thorny plant' and /bAjAngi/ 'scared', respectively.

Among these six children, two different Tamil dialects were represented. When the model for the retelling task was provided in a dialect different than the child's, there was some difficulty noted in the usage of morphosyntactic structures as the child tried to imitate the examiner's model. For example, the word /jo:sitt Δdi / 'thought' can take different forms based on the dialect, as shown in (9).

(9) a)	/jo:si- <u>tt</u> -Adɨ/	b) jo:si -∯i - dٍa:m	c) jo:si -∯∯i - <u>t</u> a:n
	think-PST.3-N.SG	think- PST.3-N.SG	think- PST.3-N.SG
	'thought'	'thought'	'thought'

Such dialectal variations, specifically in the morphological markers, within such a small group of children were noted by the authors and a decision was made to provide the story scripts in the formal standard variety of Tamil with considerations for dialects to be made while the examiner presents the story to the child. The differences in the written and spoken form coupled with the existence of multiple dialectal forms in Tamil support the use of live presentation of the story and comprehension questions over recorded input for eliciting optimal responses from young children. These considerations are needed to make the story scripts culturally appropriate and idiomatic.

Based on the narratives elicited in the pilot study, three additions were made to the acceptable responses in the story structure section of the protocol. First, in the first episode of the *Baby Birds* story, /un Λvi kett[Λ -di/, 'they [the baby birds] asked for food', shown in (10), was added as an acceptable response in addition to existing responses (*Baby Birds were hungry*, *wanted food*, *cried for food*).

(10) /unAvi kettA-di/
 food ask-PST.3-N.SG
 'asked for food'

Second, a change was made to comprehension questions D2, D5, and D8 for all stories, which enquire about how the protagonist is feeling. The use of the Tamil word /un Λ rnd- Λ di/ 'to feel' did not elicit responses as the children did not understand the word. Therefore, providing an alternate word namely /nincitt- Λ di/ 'to think' was tried. However, most of the children then answered with the action of the protagonists and not with the expected emotional state terms,

while the rest did not change their answers. Finally, the English loan word *feel* was used, and the question was reframed as in (11).

(11) /ep∧di fi:l p∧nni -di/
how feel do- PRS.3-N.SG
'How did it feel?'

This elicited the expected response from two of the older children. Hence, the English word *feel* was added as an alternate choice for this question. It was also noted that children responded with emotional state terms in English, like *happy* and *sad*. As the primary focus was to understand if the children were able to recognize these emotional state terms, appropriate usage of these loan words was allowed to be scored as accurate responses. Further, a specific type and pattern of response observed for comprehension questions in the pilot study led to a slight change in scoring responses to questions D2, D5 and D8 for all stories. One other type of answer provided instead of internal state terms like *happy*, *sad*, *scared* was accepted as a correct answer and awarded one point. An example of this type of response is the use of the English word *feel* in place of an IST provided with an accurate reason or explanation. When asked *How does the cat feel?* (*Cat*, D2), the response obtained was 'The cat is **feeling** because it fell down', as shown in (12).

(12) a) /pu:nai cat	ep∧di how	fi:l feel	p∧ni-di / do-PST.3-N.	.SG	
'How do	es the c	at feel?'			
b) /pu:nai cat	ki:1A down	vilindi fall- PS	di-fi-ni T.3-N.SG	fi:l feel	p∧ni-di do- PST.3-N.SG
'The cat is feeling because it fell down'					

The use of the English word 'feel' in place of an IST to convey the emotion of sadness is commonly observed among Tamil-English bilingual population. Hence, a response from children such as '/fi:l pAnidi/' was considered synonymous with 'feeling sad' and was accepted in place of an IST.

Another type of response in place of ISTs was the use of exclamatory expressions conveying negative emotions along with an accurate reason or explanation. The question *Imagine that the boy sees the cat. How does the boy feel?* (*Cat*, D8), elicited the response, as shown in (13).

(13) /лjjo:	pu:nai	mi:n	ela: <u>tt</u> ajum	sa:ptri-tffe/
exclamation	cat	fish	all	ate- PST.3- N.SG
'Exclamation	l! Cat ate al	l of the	fish.'	

Exclamations like / Λ jjo:/, / Λ fffo:/, and / Λ i/ are commonly used in colloquial language for expressing negative emotions and hence when produced along with an accurate reason, may be accepted in place of ISTs. Such responses and scoring allowances should therefore be taken into consideration while using the tool to assess the Tamil-English bilingual population.

At the end of the three cycles, the macrostructural aspects of the final Tamil story scripts were made parallel to the English scripts. Three goals, three attempts and three outcomes were present in each story. Two IST as initiating events and two IST as reactions were maintained in all the stories. The microstructural aspects were comparable for the number of direct speech sentences and the number of clauses in each story. Differences from the English story scripts were found in the word count and number of coordinating and subordinating constructions. The word count was lower in the Tamil version across all four stories when compared to English. However, it remained comparable between the *Cat* and *Dog* and the *Baby Birds* and *Baby Goats* stories in Tamil. The reduction in the overall number of words is explained by the agglutinative nature and morphological density of the language as discussed above. As explained earlier, the number of coordinating and subordinating structures did not match between English and the Tamil story scripts. For example, there were eight marked conjunctions in Tamil, as compared to approximately 14 in English (for the *Baby Birds* story). The phrases and sentences in Tamil are bound by other morphological structures like participles and clitics called *idai sorkal* in Tamil. Although they serve the purpose of conjoining phrases and sentences, they are not categorized under conjunction. Hence, making a strict comparison for conjunctions between the English and Tamil story scripts is not appropriate.

4 Concluding remarks

After the three cycles involving multiple iterative steps and a pilot data collection from Tamilspeaking children, decisions were made regarding vocabulary choices, sentence order changes and simplification, use of borrowed words and addition of acceptable responses in production and comprehension yielding a culturally and linguistically appropriate tool.

The final version of Tamil MAIN is an addition to the existing MAIN English version and the adaptations of MAIN to other Indian languages available for use within the multilingual environment in India. The addition of the Tamil MAIN adaptation will contribute to cross linguistic research. Considering the lack of appropriate assessment tools for multilingual children, the Tamil MAIN will be of use to researchers and clinicians in the field of study of Tamil language development and disorders in children.

A first publication related to the use of the Tamil MAIN version with Tamil-speaking children between 5 and 8 years of age is in preparation. Studies intending to utilize the Tamil MAIN should cite the assessment protocol and this introductory article in the following way:

- Gagarina, N., Klop, D., Kunnari, S., Tantele, K., Välimaa, T., Bohnacker, U. & Walters, J. (2019). MAIN: Multilingual Assessment Instrument for Narratives Revised. Materials for use. *ZAS Papers in Linguistics*, 63. Tamil version. Translated and adapted by Abinayaa, K., Nehru P. A., Venkatesh, L., & Raman, M. G.
- Abinayaa, K., Venkatesh, L., Nehru P. A., Raman, M. G. (2023). Adapting the Multilingual Assessment Instrument for Narratives to Tamil. *ZAS Papers in Linguistics*, 65, 73 – 84.

Acknowledgements

We are grateful to all the experts (Speech-Language Pathologists and Linguists) from different parts of Tamil Nadu who provided us with valuable suggestions during the adaptation process. We thank the children and their parents for their participation in the pilot study.

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