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Development of Vocabulary List for Malayalam Speaking Typical Children

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Abstract
This study aimed to develop and validate a culturally and linguistically appropriate vocabulary checklist for typically developing Malayalam-speaking children aged 5–7 years. A total of 32 children were recruited from Malayalam-medium schools and preschools in Kerala and divided into two age groups (5–6 years and 6–7 years). The checklist was developed using lexical categories adapted from the MacArthur–Bates Communicative Development Inventory (MB-CDI), Malayalam school textbooks, and expert recommendations, and was administered through a picture-naming task. Responses were analyzed using descriptive statistics and the Mann–Whitney U test. The findings indicated that both receptive and expressive vocabulary were well established across most lexical categories by 5 years of age, with a statistically significant difference observed only in the Vegetables and Grains category ($p < 0.001$), where older children performed better. The validated vocabulary checklist provides a reliable and culturally relevant assessment tool for evaluating vocabulary development in Malayalam-speaking children and has important clinical applications for early identification of language delays, intervention planning, and future research.

Keywords: Vocabulary development, Malayalam-speaking children, Vocabulary checklist, Language assessment, Expressive vocabulary, MB-CDI, Speech-language pathology, Early identification.

INTRODUCTION

Language is a socially shared code or conventional system for representing concepts through arbitrary symbols and rule-governed combinations of those symbols (Owens, 2016), and language development is the process through which children acquire the ability to understand and produce spoken, written and gestural communication through social interaction and cognitive growth. Vocabulary, defined as the collection of words an individual understands and uses for communication (Crystal, 2008), is a fundamental component of language development that supports effective communication, cognitive functioning, literacy and academic success. Vocabulary acquisition begins in early childhood through interactions with caregivers, peers and the environment, and progresses from receptive vocabulary (words understood) to expressive vocabulary (words spoken or used). During the preschool and early school years, vocabulary grows rapidly as children engage with family members, teachers and peers, with word learning influenced by daily experiences, cultural context, linguistic exposure and environmental interactions. In the early stages of language development, children initially communicate through non-

verbal behaviours such as gestures, facial expressions, crying and vocalizations before producing cooing and babbling sounds. Around 8–9 months of age, infants begin combining vowel and consonant sounds into simple syllables such as “ma,” “ba,” and “da,” progressing to canonical babbling and gradually imitating the sound patterns of their native language. Although meaningful words emerge around 12 months, babbling continues as children refine speech production, experiment with sound combinations, stress patterns and intonation, eventually leading to first words, holophrases and later sentence development. These early communicative experiences provide the foundation for vocabulary growth and overall language development. Strong vocabulary skills enhance comprehension, expression, reasoning abilities and social participation, whereas limited vocabulary may hinder communication and academic achievement. Understanding vocabulary development is therefore essential for identifying typical language acquisition patterns and recognising children at risk for language delays or disorders.

However, assessment tools developed for other languages may not accurately reflect the lexical experiences of Malayalam-speaking children because of differences in cultural context, environmental exposure, language structure and patterns of language use. The absence of standardized vocabulary assessment tools for Malayalam-speaking children aged 5–7 years creates challenges in accurately evaluating lexical development, highlighting the need for a validated vocabulary checklist to support assessment, early identification of language delays and effective intervention planning in clinical and educational settings. Previous research has emphasized the importance of early language experiences in vocabulary development. Hart and Risley (1995), through a longitudinal study of families from different socioeconomic backgrounds, demonstrated that children exposed to richer and more frequent caregiver interactions developed larger vocabularies, stronger language skills and better school readiness, concluding that both the quantity and quality of caregiver speech play a crucial role in vocabulary acquisition. Similarly, Bates, Dale and Thal (1995) conducted cross-linguistic research showing that although vocabulary acquisition follows predictable developmental patterns across languages, the rate, sequence and composition of vocabulary are influenced by language structure, cultural experiences and environmental exposure. They observed that children generally acquire nouns before verbs and other word classes and emphasized that vocabulary assessment should be language-specific, as tools developed for one language may not accurately represent lexical development in another. These findings collectively underscore the importance of developing culturally and linguistically appropriate vocabulary assessment tools for Malayalam-speaking children.

Bloom (2000) reported that vocabulary acquisition begins in infancy through interactions with caregivers and the environment. Children learn words by associating them with objects, actions and experiences. The study emphasized that language exposure, social interaction and cognitive processes such as categorization and inference play an important role in vocabulary growth, which forms the foundation for communication and literacy.

Hoff (2006) found that vocabulary development is influenced by environmental factors such as family interaction, parental education and language-rich experiences. Children exposed to meaningful conversations and responsive caregiving developed stronger vocabulary, language skills and later academic achievement.

Fenson, MacArthur-Bates (2007) developed the Communicative Development Inventories (CDI), a parent-report tool for assessing children's receptive and expressive vocabulary. The study demonstrated that parent reports are reliable and valid for evaluating early language development and vocabulary growth.

Karanth (2002) examined vocabulary acquisition in multilingual Indian children and reported that multilingual exposure supports vocabulary development and cognitive flexibility. The study highlighted the need for culturally appropriate language assessment tools for Indian languages. Arunachalam and Vanaja (2006) reported that the lack of standardized vocabulary assessment tools in Indian languages limits accurate language evaluation. They emphasized developing culturally relevant vocabulary checklists for effective diagnosis and intervention planning.

Devi (2010) studied vocabulary development in Malayalam-speaking preschool children and found that familiar nouns and everyday words are acquired first. The study highlighted the need for standardized Malayalam vocabulary assessment tools to support accurate language evaluation. Sharma and Karanth (2015) found that many Indian speech-language pathologists rely on informal assessment methods because of the limited availability of standardized language assessment tools. They recommended developing culturally appropriate vocabulary assessment materials for Indian languages. Nair and Geetha (2018) observed that vocabulary knowledge increases with age among Malayalam-speaking children and is influenced by education, reading and language-rich environments. The study emphasized the need for standardized Malayalam vocabulary checklists and age-specific normative data.

Need of the Study

A vocabulary checklist is a structured and reliable tool used to assess the words children understand and use, helping evaluate both receptive and expressive vocabulary. It is useful for identifying language delays, monitoring vocabulary growth, planning intervention, and comparing a child's vocabulary with age-appropriate developmental milestones. Culturally and linguistically appropriate vocabulary checklists are especially important for regional languages such as Malayalam, where standardized assessment tools are limited. Malayalam, a Dravidian language spoken mainly in Kerala, has unique linguistic and cultural characteristics that influence vocabulary acquisition. Since most existing vocabulary assessment tools are developed for Western languages, they may not accurately represent the vocabulary experiences of Malayalam-speaking children. Therefore, developing a standardized Malayalam vocabulary checklist is essential for accurate language assessment, effective clinical decision-making, and research on language development among Malayalam-speaking children.

METHODOLOGY

Aim

The study aims to evaluate a standardized vocabulary list for children aged 5-7 years. It seeks to identify age-appropriate vocabulary through parent-report measures. The developed list will serve as a culturally and linguistically appropriate resource for language assessment, early identification of language difficulties, and intervention planning.

Subjects

A total of 32 children aged between 5 to 7 years participated in the study and were divided into two groups based on their chronological age.

Table 1: Participant Distribution across Age Groups

Group	Age Range	Number of Participants
Group I	5-6 years	16
Group II	6-7 years	16

Participants were recruited from Malayalam-medium schools and preschools in Kerala.

Inclusion criteria:

- Malayalam as the primary language of communication at home and at school.
- No reported history of hearing impairment, speech or language disorder, neurological condition or intellectual disability.
- Age-appropriate speech and language development confirmed through speech-language screening. Written informed consent was obtained from the parents or legal guardians of all participants prior to data collection.

Formulation of the Vocabulary Checklist

The vocabulary checklist was developed in Malayalam by adapting the lexical categories from the MacArthur-Bates Communicative Development Inventory (MB-CDI) and supplementing them with words sourced from Malayalam textbooks for Standards I to III, published by the State Council of Educational Research and Training (SCERT), Kerala. The word list was further enriched through consultation with Malayalam language teachers and speech-language pathologists familiar with the linguistic environment of Malayalam-speaking children in Kerala.

Words were organized into 21 lexical categories: Colours, Vegetables and Grains, Fruits, Animals, Birds, Body Parts, Vehicles, Food items, small household items and toys, Insects, Home appliances and rooms, outside objects and places, Nature, People, Action words, Words denoting time, Adjectives, Pronouns, Question words, Location words, and Quantifiers. Category selection was guided by the developmental hierarchy established in the literature, wherein concrete nouns are typically acquired earliest, followed by action verbs, adjectives, and grammatical function words (Gentner, 1982; Brown, 1973; Laubscher & Light, 2020).

Each word was accompanied by a picture stimulus developed using culturally appropriate and contextually familiar images drawn from the Kerala environment. The set of items included in the word list were selected from:

- Various Malayalam textbooks for Standards I to III (SCERT, Kerala)
- Clinical test materials used in speech-language pathology practice
- Malayalam grammar books and reference materials

The vocabulary checklist used in the present study was derived mainly from the Malayalam vocabulary checklist developed by Vishnu K. (2019) and was further supported by the Malayalam vocabulary list compiled by Elizebath P. Paul (2019). Content validity was established using a five-point Likert scale, with ratings ranging from 1 ("very unfamiliar") to 5 ("very familiar"). The vocabulary items and corresponding picture stimuli were evaluated by a panel consisting of five speech-language pathologists and ten Malayalam-medium teachers who were native Malayalam speakers. The items were assessed for familiarity, clarity, cultural relevance, and lack of ambiguity. The final checklist was retained based on the consensus of the expert panel.

Procedure

Trained postgraduate students in Speech-Language Pathology were oriented to the administration procedure through virtual training sessions to ensure standardized administration, appropriate testing conditions, and consistent scoring. The vocabulary checklist was administered individually to each child in a quiet room at the school or home using picture stimuli. Children were asked to name each picture without time limits or prompts, while verbal praise and a small tangible reinforcement were provided to maintain motivation. Responses were scored as 1 for each correct and contextually appropriate Malayalam

word, including accepted dialectal variations, and 0 for incorrect or no responses. Category-wise and total vocabulary scores were then calculated for each participant.

Statistical analysis

Collected data were subjected to descriptive statistical analysis, including computation of mean scores and standard deviations for each lexical category across both age groups. As the data was not normally distributed the Mann Whitney U test was employed to assess whether statistically significant differences existed in comprehension and expression between the 5-6 year and 6-7 year age groups across all lexical categories. A significance threshold of $p < 0.05$ was applied. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) software, version 21. The following statistical procedures were applied:

- Frequency of each word in a category for both groups was determined.
- Percentage of words comprehended and expressed across categories for both groups was computed.
- Percentage of words comprehended and expressed within each category for both groups was calculated.
- Mann Whitney U test was used for comparison of scores between age groups.

RESULTS AND DISCUSSION

The vocabulary checklist was administered to 32 typical Malayalam-speaking children divided into two age groups: Group I (5-6 years, n = 16) and Group II (6-7years, n = 16). The Mann Whitney U test was applied to compare comprehension and expression scores between the two groups across all 20 lexical categories.

Table 1

Shows the vocabulary list acquired within the 5-6 years and 6-7 years age groups.

	COMPREHENSION		EXPRESSION	
	5-6 years	6-7 years	5-6 years	6-7 years
Animals				
/puʧa/ – പൂച്ച	✓	✓	✓	✓
/pati/ – പട്ടി	✓	✓	✓	✓
/a:d/ – ആട്	✓	✓	✓	✓
/a:mma/ – അമ്മ	✓	✓	✓	✓
/ʈʌvala/ – തവള	✓	✓	✓	✓
/eli/ – എലി	✓	✓	✓	✓
/kurukkan/ – കുറുക്കൻ	✓	✓	✓	✓
/kuraŋ/ – കുരങ്ങ്	✓	✓	✓	✓
/a:na/ – ആന	✓	✓	✓	✓
/pasu/ – പശു	✓	✓	✓	✓
/poʈ/ – പോത്ത്	✓	✓	✓	✓
/kaɭa/ – കാള	✓	✓	✓	✓
/æɾuma/ – എരുമ	✓	✓	✓	✓

/kutira/ – കുതിര	✓	✓	✓	✓
/kaɖuva/ – കടുവ	✓	✓	✓	✓
/puli/ – പുലി	✓	✓	✓	✓
/simham/ – സിംഹം	✓	✓	✓	✓
/kaʒuta/ – കഴുത	✓	✓	✓	✓
/mi:n/ – മീൻ	✓	✓	✓	✓
/aɲa:n/ – ആണാൻ	✓	✓	✓	✓
/karadi/ – കരടി	✓	✓	✓	✓
/pa:mp/ – പാമ്പ്	✓	✓	✓	✓
/muyal/ – മുയൽ	✓	✓	✓	✓
Birds				
/kili/ – പക്ഷി / കിളി	✓	✓	✓	✓
/ka:kka/ – കാക്ക	✓	✓	✓	✓
/pra:v/ – പ്രാവ്	✓	✓	✓	✓
/kuruvɪ/ – കുരുവി	✓	✓	✓	✓
/ʈaʈa/ – തത്ത	✓	✓	✓	✓
/ma:ina/ – മൈന	✓	✓	✓	✓
/ta:ra:v/ – താറാവ്	✓	✓	✓	✓
/majil/ – മയിൽ	✓	✓	✓	✓
/ko:ʒi/ – കോഴി	✓	✓	✓	✓
/kujil/ – കുയിൽ	-	✓	✓	✓
/ko:k/ – കൊക്ക്	✓	✓	✓	✓
Vegetables & Grains				
/ʈaɲka:li/ – തക്കാളി	✓	✓	✓	✓
/kiɻaŋ/ – കിഴങ്ങ്	✓	✓	✓	✓
/ʧena/ – ചേന	✓	✓	✓	✓
/ʧembu/ – ചേമ്പ്	✓	✓	✓	✓
/vendakka/ – വെണ്ടയ്ക്ക	✓	✓	✓	✓
/kovakka/ – കോവയ്ക്ക	✓	✓	✓	✓
/vazhakka/ – വാഴക്ക	✓	✓	✓	✓
/bi:ns/ – ബീൻസ്	✓	✓	✓	✓
/paɖavalaɲa/ – പടവലങ്ങ	✓	✓	✓	✓
/ki:a be:dʒ/ – കാബേജ്	✓	✓	✓	✓
/ki:a raʈ/ – കാരറ്റ്	✓	✓	✓	✓
/pa:vajakka/ – പാവയ്ക്ക	✓	✓	✓	✓
/ʧira/ – ചീര	✓	✓	✓	✓

/uɻi/ – ഉള്ളി	✓	✓	✓	✓
/muɻak/ – മുളക്	✓	✓	✓	✓
/malli/ – മല്ലി	✓	✓	✓	✓
/iɲji/ – ഇഞ്ചി	✓	✓	✓	✓
/kurumulak/ – കുരുമുളക്	✓	✓	✓	✓
/kaɖala/ – കടല	✓	✓	✓	✓
/payar/ – പയർ	✓	✓	✓	✓
/nel/ – നെല്	✓	✓	✓	✓
/ari/ – അരി	✓	✓	✓	✓
Food items				
/ʧa:patti/ – ചപ്പാത്തി	✓	✓	✓	✓
/appam/ – അപ്പം	✓	✓	✓	✓
/iɖali/ – ഇടലി	✓	✓	✓	✓
/do:sa/ – ദോശ	✓	✓	✓	✓
/puʈ/ – പുട്ട്	✓	✓	✓	✓
/biriyani/ – ബിരിയാണി	✓	✓	✓	✓
/ʧo:r/ – ചോറ്	✓	✓	✓	✓
/kanji/ – കഞ്ഞി	✓	✓	✓	✓
/ka:ppa/ – കപ്പ	✓	✓	✓	✓
/pa:yasam/ – പായസം	✓	✓	✓	✓
/kek/ – കേക്ക്	✓	✓	✓	✓
/bre:d/ – ബ്രെഡ്	✓	✓	✓	✓
/bisket/ – ബിസ്കറ്റ്	✓	✓	✓	✓
/mikstʃar/ – മിക്സ്ചർ	✓	✓	✓	✓
/laɖu/ – ലഡു	✓	✓	✓	✓
/dʒilebi/ – ജിലേബി	✓	✓	✓	✓
/aval/ – അവൽ	✓	✓	✓	✓
/vada/ – വട	✓	✓	✓	✓
/uɳɳiappam/ – ഉണ്ണിയപ്പം	✓	✓	✓	✓
/muruk/ – മുറുക്ക്	✓	✓	✓	✓
/haluva/ – ഹലുവ	✓	✓	✓	✓
/paɻampori/ – പഴംപൊരി	✓	✓	✓	✓
/miʧa:yi/ – മിഠായി	✓	✓	✓	✓
/aiskri:m/ – ഐസ്ക്രീം	✓	✓	✓	✓
Fruits				
/paɻam/ – പഴം	✓	✓	✓	✓

/maɲa/ – മാങ്ങ	✓	✓	✓	✓
/ʧkka/ – തക്ക	✓	✓	✓	✓
/perakka/ – പേരയ്ക്ക	✓	✓	✓	✓
/ʧambakka/ – ചമ്പക്ക	✓	✓	✓	✓
/papaja/ – പപ്പായ	✓	✓	✓	✓
/taŋgimatan/ – തങ്കിമത്തൻ	✓	✓	✓	✓
/muɳdiri/ – മുന്തിരി	✓	✓	✓	✓
/a:pil/ – ആപ്പിൾ	✓	✓	✓	✓
/oranʧ/ – ഓറഞ്ച്	✓	✓	✓	✓
/na:raɲa/ – നാരങ്ങ	✓	✓	✓	✓
/ʈena/ – തേങ്ങ	✓	✓	✓	✓
/iɳdappazam/ – ഈന്തപ്പഴം	✓	✓	✓	✓
Vehicles				
/saikkil/ – സൈക്കിൾ	✓	✓	✓	✓
/baikk/ – ബൈക്ക്	✓	✓	✓	✓
/skuter/ – സ്കൂട്ടർ	✓	✓	✓	✓
/ka:r/ – കാർ	✓	✓	✓	✓
/bas/ – ബസ്	✓	✓	✓	✓
/dʒip/ – ജീപ്പ്	✓	✓	✓	✓
/lo:ri/ – ലോറി	✓	✓	✓	✓
/væ:n/ – വാൻ	✓	✓	✓	✓
/o:ʈo/ – ഓട്ടോ	✓	✓	✓	✓
/ʈi:vandi/ – തീവണ്ടി	✓	✓	✓	✓
/vima:nam/ – വിമാനം	✓	✓	✓	✓
/vaɭam/ – വള്ളം	✓	✓	✓	✓
/kappal/ – കപ്പൽ	✓	✓	✓	✓
Insects				
/urumbu/ – ഉറുമ്പ്	✓	✓	✓	✓
/koʈuk/ – കൊതുക്	✓	✓	✓	✓
/pumpa:ʈa/ – പുമ്പാറ്റ	✓	✓	✓	✓
/ʧilanʧi/ – ചിലന്തി	✓	✓	✓	✓
/vaɳɖ/ – വണ്ട്	✓	✓	✓	✓
/puzu/ – പുഴു	✓	✓	✓	✓
/aʧʧa/ – അട്ട	✓	✓	✓	✓
/pazuʈa:ra/ – പഴുതാര	✓	✓	✓	✓
/palli/ – പല്ലി	✓	✓	✓	✓

/ʈel/ – തേൾ	✓	✓	✓	✓
/ʈeniʧa/ – തേനിച്ച	✓	✓	✓	✓
/I:ʧa/ – ഈച്ച	✓	✓	✓	✓
Flowers				
/muɭa/ – മുല്ല	✓	✓	✓	✓
/ʧembaraʈi/ – ചെമ്പരത്തി	✓	✓	✓	✓
/ʤamanthi/ – ജമന്തി	✓	✓	✓	✓
/ta:mara/ – താമര	✓	✓	✓	✓
/ro:s/ – റോസ്	✓	✓	✓	✓
/tuɭasi/ – തുളസി	✓	✓	✓	✓
/tu:mba/ – തുമ്പ	✓	✓	✓	✓
/konŋŋappu/ – കൊന്നപ്പൂ	✓	✓	✓	✓
Trees				
/ma:v/ – മാവ്	✓	✓	✓	✓
/pla:v/ – പ്ലാവ്	✓	✓	✓	✓
/ʧamba/ – ചാമ്പ	✓	✓	✓	✓
/pera/ – പേര	✓	✓	✓	✓
/te:n/ – തെങ്ങ്	✓	✓	✓	✓
/ʈe:k/ – തേക്ക്	✓	✓	✓	✓
/va:ɻa/ – വാഴ	✓	✓	✓	✓
/rabbar/ – റബ്ബർ	✓	✓	✓	✓
Dresses & Cosmetics				
/uɖupp/ – ഉടുപ്പ്	✓	✓	✓	✓
/blo:us/ – ബ്ലൗസ്	✓	✓	✓	✓
/pa:va:ɖa/ – പാവാട	✓	✓	✓	✓
/nikker/ – നിക്കർ	✓	✓	✓	✓
/ʧoridar/ – ചുരിദാർ	✓	✓	✓	✓
/sa:ri/ – സാരി	✓	✓	✓	✓
/na:iʈi/ – നൈറ്റി	✓	✓	✓	✓
/ʃu/ – ഷൂ	✓	✓	✓	✓
/aɖivastram/ – അടിവസ്ത്രം	✓	✓	✓	✓
/ʈo:pi/ – തൊപ്പി	✓	✓	✓	✓
/ʧa:pa:l/ – ചാപ്പൽ (ചപ്പൽ)	✓	✓	✓	✓
/pot/ – പൊട്ട് / പോട്ട്	✓	✓	✓	✓
/kaŋmaʃi/ – കണ്മഷി	✓	✓	✓	✓
/ʧip/ – ചിപ്പ്	✓	✓	✓	✓
/pa:uɖer/ – പൗഡർ	✓	✓	✓	✓

/vala/ – വള	✓	✓	✓	✓
/maːla/ – മാല	✓	✓	✓	✓
/moʈiram/ – മോതിരം	✓	✓	✓	✓
/kamʔal/ – കമ്മൽ	✓	✓	✓	✓
/paːdaːsaram/ – പാദസരം	✓	✓	✓	✓
/klip/ – ക്ലിപ്പ്	✓	✓	✓	✓
/heːrbænd/ – ഹെയർബാൻഡ്	✓	✓	✓	✓
/slaɪd/ – സ്ലൈഡ്	✓	✓	✓	✓
Kitchen Items				
/spuːn/ → സ്പൂൺ	✓	✓	✓	✓
/naɪf/ → നൈഫ് (knife)	✓	✓	✓	✓
/glæs/ → ഗ്ലാസ്	✓	✓	✓	✓
/pleɪt/ → പ്ലേറ്റ്	✓	✓	✓	✓
/kʌp/ → കപ്പ്	✓	✓	✓	✓
/adַappɯ/ → അടപ്പ്	✓	✓	✓	✓
/dʒaːr/ → ജാർ	✓	✓	✓	✓
/enna/ → എണ്ണ	✓	✓	✓	✓
/tɪfɪn/ → ടിഫിൻ	✓	✓	✓	✓
/laɪtər/ → ലൈറ്റർ	✓	✓	✓	✓
/gæs/ → ഗ്യാസ്	✓	✓	✓	✓
/tiː/ → ടീ / ചായ	✓	✓	✓	✓
/puka/ → പുക	✓	✓	✓	✓
/tʃaːram/ → ചാരം	✓	✓	✓	✓
/kanal/ → കനൽ	✓	✓	✓	✓
/kaʈ͡ʰrika/ → കത്രിക	✓	✓	✓	✓
/ulakka/ → ഉലക്ക	✓	✓	✓	✓
/muram/ → മുറം	✓	✓	✓	✓
/kuדam/ → കുടം	✓	✓	✓	✓
/tʃaʈʈi/ → ചട്ടി	✓	✓	✓	✓
/miksi/ → മിക്സി	✓	✓	✓	✓
/kukər/ → കുക്കർ	✓	✓	✓	✓
/masaːla/ → മസാല	✓	✓	✓	✓
/uppɯ/ → ഉപ്പ്	✓	✓	✓	✓
General Items				
/telɪvɪʒən/ → ടെലിവിഷൻ	✓	✓	✓	✓
/frɪdʒ/ → ഫ്രിഡ്ജ്	✓	✓	✓	✓

/re:ɖio/ → റേഡിയോ	✓	✓	✓	✓
/kəmpju:tər/ → കമ്പ്യൂട്ടർ	✓	✓	✓	✓
/wɒʃɪŋ məʃi:n/ → വാഷിംഗ് മെഷീൻ	✓	✓	✓	✓
/kʌrənt/ → കരന്റ്	✓	✓	✓	✓
/bʌlb/ → ബൾബ്	✓	✓	✓	✓
/laɪt/ → ലൈറ്റ്	✓	✓	✓	✓
/fæn/ → ഫാൻ	✓	✓	✓	✓
/mo:baɪl/ → മൊബൈൽ	✓	✓	✓	✓
/kæmərə/ → ക്യാമറ	✓	✓	✓	✓
/si:di:/ → സിഡി	✓	✓	✓	✓
Other Items				
/swɪtʃ/ → സ്വിച്ച്	✓	✓	✓	✓
/plʌg/ → പ്ലഗ്	✓	✓	✓	✓
/klɒk/ → ക്ലോക്ക്	✓	✓	✓	✓
/so:p/ → സോപ്പ്	✓	✓	✓	✓
/bʌkɪt/ → ബക്കറ്റ്	✓	✓	✓	✓
/mʌg/ → മഗ്	✓	✓	✓	✓
/paɪp/ → പൈപ്പ്	✓	✓	✓	✓
/kɪŋaɾ/ → കിണർ	✓	✓	✓	✓
/flɑ:sk/ → ഫ്ലാസ്ക്	✓	✓	✓	✓
/fo:to/ → ഫോട്ടോ	✓	✓	✓	✓
/bæg/ → ബാഗ്	✓	✓	✓	✓
/pen/ → പെൻ	✓	✓	✓	✓
/pensl/ → പെൻസിൽ	✓	✓	✓	✓
/bʊk/ → ബുക്ക്	✓	✓	✓	✓
/pe:pər/ → പേപ്പർ	✓	✓	✓	✓
/sleɪt/ → സ്ലേറ്റ്	✓	✓	✓	✓
/bɒks/ → ബോക്സ്	✓	✓	✓	✓
/pʌmp/ → പമ്പ്	✓	✓	✓	✓
/dʒa:nala/ → ജനൽ	✓	✓	✓	✓
/wɒtʃ/ → വാച്ച്	✓	✓	✓	✓
/ʋi:ɖio/ → വീഡിയോ	✓	✓	✓	✓
/ʋilakku/ → വിളക്ക്	✓	✓	✓	✓
Family members				
/am:a/ → അമ്മ	✓	✓	✓	✓

/atʃan/ → അച്ഛൻ	✓	✓	✓	✓
/aniyən/ → അനിയൻ	✓	✓	✓	✓
/apup:an/ → അപ്പുപ്പൻ	✓	✓	✓	✓
/appatʃi/ → അപ്പച്ചി	✓	✓	✓	✓
/perappan/ → പെരപ്പൻ	✓	✓	✓	✓
/tʃeriyamma/ → ചെറിയമ്മ	✓	✓	✓	✓
/tʃeriyan/ → ചെറിയൻ	✓	✓	✓	✓
/tʃeri/ → ചെറിയ	✓	✓	✓	✓
/amma:van/ → അമ്മാവൻ	✓	✓	✓	✓
/amma:vi/ → അമ്മാവി	✓	✓	✓	✓
/ankil/ → അങ്കിൾ	✓	✓	✓	✓
/anti/ → ആന്റി	✓	✓	✓	✓
Colors				
/paʃa/ → പച്ച	✓	✓	✓	✓
/veɭa/ → വെള	✓	✓	✓	✓
/karup/ → കരുപ്പ്	✓	✓	✓	✓
Pronouns				
/ente/ → എന്റെ	✓	✓	✓	✓
/nin:e/ → നിന്നെ	✓	✓	✓	✓
/nja:n/ → ഞാൻ	✓	✓	✓	✓
/ne/ → നീ	✓	✓	✓	✓
/avan/ → അവൻ	✓	✓	✓	✓
/aval/ → അവൾ	✓	✓	✓	✓
/avalude/ → അവളുടെ	✓	✓	✓	✓
/niŋŋaɭ/ → നിങ്ങള്	✓	✓	✓	✓
/njaŋŋaɭ/ → ഞങ്ങള്	✓	✓	✓	✓
Connecting Words				
/allengil/ → അല്ലെങ്കിൽ	✓	✓	✓	✓
/illejo/ → ഇല്ലയോ	✓	✓	✓	✓
/aano/ → ആണോ	✓	✓	✓	✓
Action Verbs				
/varunnu/ → വരുന്നു	✓	✓	✓	✓
/irikkunnu/ → ഇരിക്കുന്നു	✓	✓	✓	✓
/nilkkunnu/ → നിൽക്കുന്നു	✓	✓	✓	✓
/kodukkunnu/ → കൊടുക്കുന്നു	✓	✓	✓	✓
/samsarikunnu/ → സംസാരിക്കുന്നു	✓	✓	✓	✓

/pokunnu/ → പോകുന്നു	✓	✓	✓	✓
/valikkunnu/ → വലിക്കുന്നു	✓	✓	✓	✓
Furniture				
/mesa/ → മേശ	✓	✓	✓	✓
/kasera/ → കസേര	✓	✓	✓	✓
/alamara/ → അലമാര	✓	✓	✓	✓
/sofa/ → സോഫ	✓	✓	✓	✓
/bench/ → ബെഞ്ച്	✓	✓	✓	✓
/desk/ → ഡെസ്ക്	✓	✓	✓	✓
/stool/ → സ്റ്റൂൾ	✓	✓	✓	✓
/kattil/ → കട്ടിൽ	✓	✓	✓	✓
/paaya/ → പായ	✓	✓	✓	✓
Noun modifiers				
/valut/ → വലുത്	✓	✓	✓	✓
/ʧerut/ → ചെറുത്	✓	✓	✓	✓
/adut/ → അടുത്ത്	✓	✓	✓	✓
/akale/ → അകലേ	✓	✓	✓	✓
/santosham/ → സന്തോഷം	✓	✓	✓	✓
/vishamam/ → വിഷമം	✓	✓	✓	✓
/nalat/ → നല്ലത്	✓	✓	✓	✓
/ʧita/ → ചീത്ത	✓	✓	✓	✓
/azuk/ → അഴുക്ക്	✓	✓	✓	✓
/vedana/ → വേദന	✓	✓	✓	✓
/sukham/ → സുഖം	✓	✓	✓	✓
Verb modifiers				
/akath/ → അകത്ത്	✓	✓	✓	✓
/purath/ → പുറത്ത്	✓	✓	✓	✓
/arikil/ → അരികില്	✓	✓	✓	✓
/avide/ → അവിടെ	✓	✓	✓	✓
/ivide/ → ഇവിടെ	✓	✓	✓	✓
/mukalil/ → മുകളില്	✓	✓	✓	✓
/tazhe/ → താഴെ	✓	✓	✓	✓

Table 1 presents the within-group performance of children aged 5–6 years and 6–7 years on vocabulary comprehension and expression. The percentage of children who correctly comprehended or expressed each lexical item was calculated. Based on the criterion proposed by Sander (1972), a lexical item was considered developmentally acquired when more than 75% of the children in an age group demonstrated

successful comprehension or expression. Words meeting this criterion were marked with a check mark (✓), indicating successful vocabulary acquisition within that age group.

Table 2:

Comprehension scores of 5-6 years and 6-7 years typically developing Malayalam-speaking children across lexical categories.

Lexical Category	Age Group	Statistic	Score	p-value	Significance
Animals	5-6 years	Mean	22.40	0.967	**NS**
	5-6 years	SD	1.682		
	6-7 years	Mean	22.67		
	6-7 years	SD	0.900		
Birds	5-6 years	Mean	9.60	0.061	**NS**
	5-6 years	SD	0.507		
	6-7 years	Mean	10.00		
	6-7 years	SD	0.000		
Vegetables & Grains	5-6 years	Mean	11.80	<0.001	**S***
	5-6 years	SD	0.414		
	6-7 years	Mean	24.00		
	6-7 years	SD	0.000		
Fruits	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Vehicles	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Insects	5-6 years	Mean	12.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	12.00		
	6-7 years	SD	0.000		
Flowers	5-6 years	Mean	8.00	1.000	**NS**
	5-6 years	SD	0.000		

Lexical Category	Age Group	Statistic	Score	p-value	Significance
	6-7 years	Mean	8.00		
	6-7 years	SD	0.000		
Trees	5-6 years	Mean	8.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	8.00		
	6-7 years	SD	0.000		
Dresses & Cosmetics	5-6 years	Mean	23.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	23.00		
	6-7 years	SD	0.000		
Kitchen Items	5-6 years	Mean	24.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	24.00		
	6-7 years	SD	0.000		
General Items	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Other Items	5-6 years	Mean	23.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	23.00		
	6-7 years	SD	0.000		
Family Members	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Colours	5-6 years	Mean	3.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	3.00		
	6-7 years	SD	0.000		
Pronouns	5-6 years	Mean	10.00	1.000	**NS**

Lexical Category	Age Group	Statistic	Score	p-value	Significance
	5-6 years	SD	0.000		
	6-7 years	Mean	10.00		
	6-7 years	SD	0.000		
Connecting Words	5-6 years	Mean	3.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	3.00		
	6-7 years	SD	0.000		
Action Verbs	5-6 years	Mean	7.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	7.00		
	6-7 years	SD	0.000		
Furniture	5-6 years	Mean	9.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	9.00		
	6-7 years	SD	0.000		
Noun Modifiers	5-6 years	Mean	11.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	11.00		
	6-7 years	SD	0.000		
Verb Modifiers	5-6 years	Mean	7.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	7.00		
	6-7 years	SD	0.000		

*S – Significant; NS – Not Significant; *p < 0.001*

Table 2 presents the comprehension scores of children aged 5–6 years and 6–7 years across the lexical categories. A significant difference was observed only in the Vegetables and Grains category ($p < 0.001$), with the older group showing better performance. No significant differences were found in the remaining categories ($p > 0.05$), indicating that comprehension of most vocabulary items was already established by 5 years of age.

Expression Scores

Table 3:

Expression scores of 5-6 years and 6-7 years typically developing Malayalam-speaking children across lexical categories.

Lexical Category	Age Group	Statistic	Score	p-value	Significance
Animals	5-6 years	Mean	22.20	0.775	**NS**
	5-6 years	SD	1.699		
	6-7 years	Mean	22.47		
	6-7 years	SD	1.457		
Birds	5-6 years	Mean	9.60	0.126	**NS**
	5-6 years	SD	0.507		
	6-7 years	Mean	9.93		
	6-7 years	SD	0.258		
Vegetables & Grains	5-6 years	Mean	12.27	<0.001	**S***
	5-6 years	SD	1.907		
	6-7 years	Mean	24.00		
	6-7 years	SD	0.000		
Fruits	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Vehicles	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Insects	5-6 years	Mean	12.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	12.00		
	6-7 years	SD	0.000		
Flowers	5-6 years	Mean	8.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	8.00		
	6-7 years	SD	0.000		
Trees	5-6 years	Mean	8.00	1.000	**NS**

Lexical Category	Age Group	Statistic	Score	p-value	Significance
	5-6 years	SD	0.000		
	6-7 years	Mean	8.00		
	6-7 years	SD	0.000		
Dresses & Cosmetics	5-6 years	Mean	23.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	23.00		
	6-7 years	SD	0.000		
Kitchen Items	5-6 years	Mean	24.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	24.00		
	6-7 years	SD	0.000		
General Items	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Other Items	5-6 years	Mean	23.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	23.00		
	6-7 years	SD	0.000		
Family Members	5-6 years	Mean	13.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	13.00		
	6-7 years	SD	0.000		
Colors	5-6 years	Mean	3.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	3.00		
	6-7 years	SD	0.000		
Pronouns	5-6 years	Mean	10.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	10.00		
	6-7 years	SD	0.000		
Connecting Words	5-6 years	Mean	3.00	1.000	**NS**

Lexical Category	Age Group	Statistic	Score	p-value	Significance
	5-6 years	SD	0.000		
	6-7 years	Mean	3.00		
	6-7 years	SD	0.000		
Action Verbs	5-6 years	Mean	7.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	7.00		
	6-7 years	SD	0.000		
Furniture	5-6 years	Mean	9.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	9.00		
	6-7 years	SD	0.000		
Noun Modifiers	5-6 years	Mean	11.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	11.00		
	6-7 years	SD	0.000		
Verb Modifiers	5-6 years	Mean	7.00	1.000	**NS**
	5-6 years	SD	0.000		
	6-7 years	Mean	7.00		
	6-7 years	SD	0.000		

*S – Significant; NS – Not Significant; *p < 0.001*

Table 3 presents the expression scores of children aged 5–6 years and 6–7 years across the lexical categories. A statistically significant difference was observed only in the Vegetables and Grains category ($p < 0.001$), with the older group demonstrating higher scores. No significant differences were found in the remaining categories ($p > 0.05$), indicating that expressive vocabulary for most lexical categories is well established by 5 years of age, with near-ceiling performance across the majority of vocabulary domains.

Discussion

The findings of the present study showed that both receptive and expressive vocabulary were well established in typically developing Malayalam-speaking children by 5 years of age across most lexical categories. A significant difference was observed only in the Vegetables and Grains category ($p < 0.001$), with children aged 6–7 years demonstrating better performance. This improvement may be attributed to increased exposure to food- and agriculture-related vocabulary through the Malayalam medium SCERT curriculum during the early primary school years. The findings are consistent with previous studies by Gentner (1982), Bornstein et al. (2004), and Caselli et al. (1995), which reported that concrete noun categories are acquired early in language development. Similarly, Meghana and Kumaraswamy (2015)

and Maria et al. (2025) reported age-related vocabulary growth among Kannada- and Tamil-speaking children, respectively. The validated vocabulary checklist can therefore serve as a useful clinical tool for identifying Malayalam-speaking children with delayed vocabulary development and for supporting early assessment and intervention.

Summary and conclusion

The present study developed and validated a 20-category Malayalam vocabulary checklist for typically developing children aged 5–7 years. The checklist was developed using lexical categories from the MacArthur–Bates Communicative Development Inventory (MB-CDI), Malayalam school textbooks, and expert recommendations. A total of 32 children were assessed using picture stimuli, and their responses were analysed using descriptive statistics and the Mann–Whitney U test. The findings showed that both receptive and expressive vocabulary were well established by 5 years of age across most lexical categories, with a significant difference observed only in the Vegetables and Grains category ($p < 0.001$). The validated checklist provides a culturally and linguistically appropriate assessment tool for Malayalam-speaking children and can support the early identification of language delays, clinical assessment, intervention planning, and future research. It also addresses the need for standardized vocabulary assessment materials for Malayalam-speaking children and serves as a valuable resource for clinicians, educators, and researchers.

Implications of the Study

- The validated vocabulary checklist can be used to assess the vocabulary development of typically developing Malayalam-speaking children aged 5 to 7 years and to establish age-referenced norms for clinical use.
- The checklist can serve as a useful clinical tool to identify children who are at risk for language impairment or vocabulary delays, enabling early intervention.
- The checklist supports early identification and timely intervention for language impaired children, which is critical for optimal developmental outcomes.
- The tool can be used by speech language pathologists, teachers, and other professionals involved in early childhood education and intervention in Kerala and other Malayalam-speaking communities.

Limitations of the Study

- The small sample size (32 children) and recruitment from a specific geographic region of Kerala may limit the generalizability and representativeness of the findings for all Malayalam-speaking children.
- The study assessed only expressive vocabulary using a picture-naming task; receptive vocabulary was not evaluated through a separate comprehension assessment.
- Gender differences in vocabulary acquisition were not examined, limiting the understanding of potential sex-related variations in vocabulary development.
- The checklist does not include all grammatical categories of Malayalam, such as case markers, conjunctions, and auxiliary verbs, which may limit its comprehensiveness.

Future Directions

- Conduct large-scale studies involving a larger and more diverse sample of Malayalam-speaking children across Kerala, including different age groups, to establish normative vocabulary data.

- Expand and validate the checklist by developing a receptive vocabulary version and comparing it with standardized language assessment tools to establish its clinical validity.
- Evaluate the checklist in clinical populations, including children with language disorders, hearing loss, autism spectrum disorder, and intellectual disabilities, to determine its clinical usefulness.
- Undertake longitudinal and comparative studies to examine vocabulary development over time and investigate factors such as gender differences in vocabulary acquisition.

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