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Age-related sentence correctness judgment in typical children speaking Malayalam

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Abstract

Sentence correctness judgment is an important metalinguistic skill that enables children to identify whether sentences are grammatically correct or incorrect and plays a significant role in language development. The present study aimed to examine age-related differences in sentence correctness judgment in typical Malayalam-speaking children aged 6–10 years. A total of 60 children were divided into two age groups (6–7.11 years and 8–9.11 years), with 30 participants in each group. A set of 10 Malayalam sentences consisting of grammatically correct and incorrect sentences was used for assessment. Children were asked to listen to each sentence carefully and judge whether the sentence was correct or incorrect, and their responses were recorded and analyzed. Data were summarized using frequency and percentage. Comparisons between the two age groups were performed using the Chi-square test, and the Binomial test was used to analyze the ability to judge correct and incorrect sentences within each age group. Statistical analysis was conducted using SPSS version 29.0.10, with a p-value of less than .05 considered statistically significant. The results revealed significant age-related improvement in sentence correctness judgment abilities, with older children demonstrating better and more consistent performance compared to younger children. Younger children showed comparatively lower and inconsistent performance, whereas older children accurately identified a greater number of grammatically correct and incorrect sentences. Children performed better for simple and familiar sentence structures, while grammatically incorrect and syntactically complex sentences were more difficult to judge accurately. These findings highlight the gradual development of metalinguistic and grammatical awareness and provide important normative data for clinical assessment and intervention in Malayalam-speaking children.

Keywords: sentence correctness judgment, Malayalam-speaking children, metalinguistic awareness, grammaticality judgment, language development.

1. Introduction

Speaking and understanding language requires more than just producing words; it also demands the ability to recognize whether sentences follow the rules of the language being spoken. Chomsky (1965) proposed that every child is born with an innate capacity for language, which enables them to acquire the grammatical rules of their native language without formal instruction. Gleason (1958) demonstrated that

even young children show sensitivity to morphological and syntactic rules of their language, indicating that grammatical knowledge begins to emerge early in development. Chomsky and Halle (1968) further noted that children's linguistic competence their internal knowledge of language rules develops gradually and continues to refine across childhood.

Sentence correctness judgment is a metalinguistic task that requires a child to consciously reflect on whether a sentence is grammatically acceptable or not, independent of its meaning. Bialystok (1986) defined metalinguistic awareness as the ability to treat language as an object of thought and argued that this skill develops progressively across the preschool and school-age years. Tunmer and Herriman (1984) emphasized that metalinguistic abilities, including grammaticality judgment, represent a higher-order cognitive skill that is distinct from general language use and emerges later in development. Gombert (1992) further distinguished between implicit grammatical knowledge, which allows children to use language correctly, and explicit metalinguistic awareness, which allows them to consciously judge and reflect upon language structure.

Scholl and Ryan (1975) found that younger children tend to judge sentences based on semantic content rather than syntactic form, while older children demonstrate increasing reliance on syntactic knowledge during judgment tasks. Bialystok and Ryan (1985) reported that the ability to identify grammatically incorrect sentences improves significantly between the ages of 4 and 10 years, with a marked shift in strategy occurring around age 6 to 7 years. de Villiers and de Villiers (1972) observed that children's ability to detect grammatical errors in sentences develops in parallel with their overall language acquisition and improves steadily through the early school years.

Hakes (1980) reported that children find it easier to detect errors in sentences with simple violations, such as incorrect word order, compared to more subtle morphological or agreement errors. Tunmer, Nesdale, and Pratt (1983) found that sentence length and syntactic complexity significantly affect the accuracy of grammaticality judgments in young children, with shorter and simpler sentences being judged more accurately. Pratt, Tunmer, and Bowey (1984) highlighted that children's sentence correctness judgment performance is closely related to their working memory capacity and general cognitive development.

Slobin (1973) observed that the grammatical features unique to each language shape the sequence and pace at which children acquire metalinguistic awareness of those features. Radford (1990) noted that children learning languages with complex morphological systems, such as agglutinative languages, may show different patterns of grammaticality judgment compared to children learning languages with simpler morphology. Crain and Thornton (1998) emphasized the importance of studying metalinguistic development within the child's native language context, as cross-linguistic differences in grammar significantly affect judgment patterns.

Joy, Venkatesh, Mathew, and Narayanan (2023) examined language abilities in typically developing Malayalam-speaking children and highlighted the need for language-specific normative data derived from within the Malayalam-speaking population for accurate clinical assessment. Konadath, Suma, Jayaram, Sandeep, Mahima, and Shreyank (2013) emphasized that assessments of linguistic abilities in Indian children must be based on norms derived from within the specific language population, as norms developed for other languages may not be applicable to regional language speakers such as Malayalam.

Rasheeka, Karuppali, Bhat, Mohan, Varghese, Kokotek, Kelkar, and Alduais (2024) similarly noted that most language assessment research in India has focused on widely spoken languages, leaving grammaticality judgment and related metalinguistic abilities in regional languages such as Malayalam largely unexplored, and the absence of age-referenced normative data limits clinicians' ability to accurately identify language disorders in this population.

Malayalam is a Dravidian language spoken as the official language of Kerala, India, and is characterized by a complex agglutinative morphological system and a relatively flexible verb-final word order. Asher and Kumari (1997) described Malayalam as a morphologically rich language in which grammatical relationships are primarily expressed through suffixes attached to nouns and verbs, making its grammatical structure typologically distinct from Indo-European languages. Nair (1989) noted that Malayalam sentences follow a subject-object-verb order as the default but allow considerable variation due to its rich case-marking system, which may present unique challenges for children developing awareness of sentence correctness. Mohanan (1982) observed that the grammatical complexity of Malayalam, particularly its agreement and case systems, requires considerable time and exposure for children to fully internalize.

2. Need of The Study

Language development in children involves not only the ability to produce sentences but also the ability to judge whether sentences are grammatically correct. This skill reflects the development of syntactic and grammatical knowledge, which emerges gradually with age. In the Indian context, children are often exposed to rich linguistic environments, yet there is limited research focusing on their ability to judge sentence correctness in regional languages such as Malayalam. Sentence correctness judgment tasks are important in speech-language pathology as they help assess grammatical awareness and language processing abilities in children. However, most existing studies have focused on language production rather than comprehension and judgment skills.

The current study was undertaken to analyze age-related differences in sentence correctness judgment in Malayalam-speaking children.

3. Methodology

AIM OF THE STUDY

The aim of the present study was to examine age-related differences in sentence correctness judgment in Malayalam-speaking children.

Objectives

1. To analyze the ability to judge correct and incorrect sentences in Malayalam among different age groups.
2. To compare between younger and older children in identifying sentence correctness.

Participants

A total of 60 Malayalam-speaking typical children in the age range of 6-10 years participated in the present study. The participants were divided into two age groups: 6–7.11 years and 8–9.11 years, with 30 children

in each group. All participants were native Malayalam speakers with no history of hearing impairment, speech and language disorders, or cognitive or neurological deficits.

Stimulus

A set of 10 Malayalam sentences consisting of both grammatically correct and incorrect sentences.

1) അവൻ സ്കൂളിൽ പോകുന്നു.(He is going to school)
2) കുട്ടികൾ കളിക്കുന്നു ആനകൾ. (Children play elephants)
3) അമ്മ ചോറ് പാകം ചെയ്തു.(Mother cooked rice)
4) പൂവ് ചുവന്ന് ആണ് സുന്ദരം.(The flower red is beautiful)
5) അച്ഛൻ വീട്ടിൽ ഇരിക്കുന്നു.(Father is sitting at home)
6) മഴ പെയ്യുന്ന് ഇന്ന് ദിവസം.(Rain falling today day)
7) അവൾ പുസ്തകം വായിക്കുന്നു.(She is reading a book)
8) നായ ഓടുന്ന് ദൂരം വളരെ.(Dog runs fast very)
9) ചന്ദ്രൻ ആകാശത്ത് തിളങ്ങുന്നു.(The moon shines in the sky)
10) അവർ ചിരിക്കുന്ന് കൂടെ ഒരുമിച്ച്.(They laugh together along)

Procedure

The data was collected in a quiet and controlled environment to ensure minimal distractions. Each child was assessed individually. A set of 10 Malayalam sentences consisting of both grammatically correct and incorrect sentences was presented to the participants. The children were asked to listen to each sentence carefully and judge whether the sentence was correct or incorrect. Their responses were recorded for further analysis. The collected data were then organized and prepared for statistical analysis to examine age-related differences in sentence correctness judgment.

Stastical Analysis

The collected data was summarized by using the Descriptive Statistics: frequency, and percentage. The Chi square test was used to compare sentence correctness judgment in Malayalam-speaking children; between the age groups: 6 to 7.11 years and 8 to 9.11 years. Binomial test was used to identify the ability to judge correct and incorrect sentences in Malayalam; according to the age groups. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 29.0.10.

4. Results and Discussion

The present study aimed to examine age-related differences in sentence correctness judgment in Malayalam-speaking children. For this purpose, specific set of Malayalam sentences were provided to evaluate the ability to judge correct and incorrect Malayalam sentences. The obtained results are discussed below.

Table 1

Shows the ability to judge correct and incorrect sentences in Malayalam-among the age group 6 to 7.11 years

	Age group: 6 to 7.11 years		
	Observed proportion	p value	Significance
1) He is going to school	0.50	1.000	NS
2)Children play elephants	0.63	0.200	NS
3)Mother cooked rice	0.67	0.099	NS
4)The flower red is beautiful	0.53	0.856	NS
5) Father is sitting at home	0.47	0.856	NS
6) Rain falling today day	0.50	1.000	NS
7) She is reading a book	0.57	0.585	NS
8) Dog runs fast very	0.53	0.856	NS
9) The moon shines in the sky	0.50	1.000	NS
10) They laugh together along	0.53	0.856	NS

NS-Non significant

FIG 1

Shows the ability to judge correct and incorrect sentences in Malayalam-among the age group 6 to 7.11 years

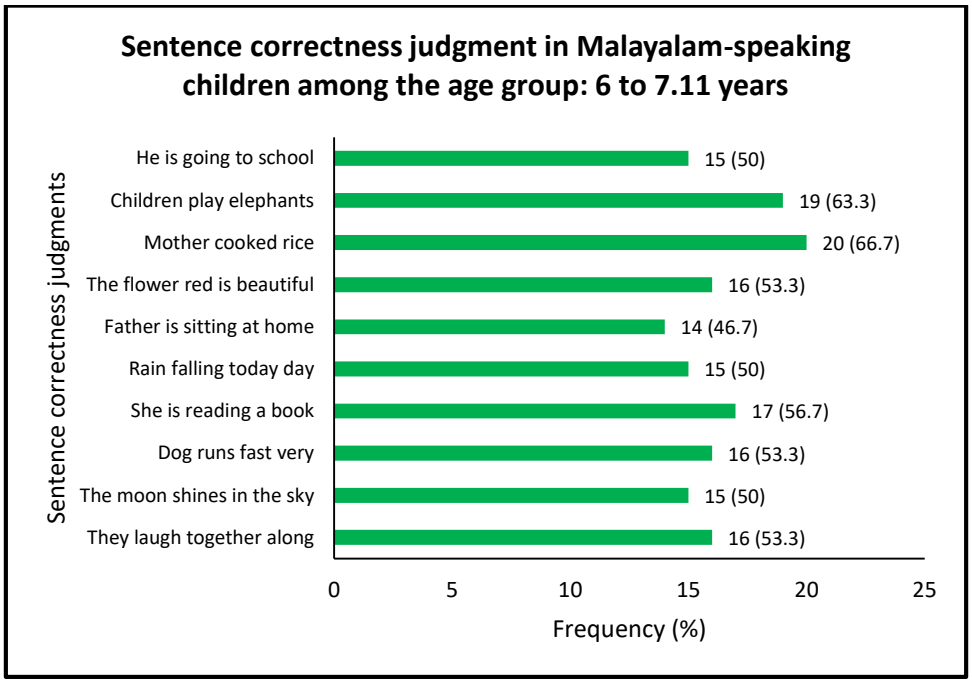

Table 1 and Figure 1 presented the ability to judge correct and incorrect sentences in Malayalam among the age group of 6 to 7.11 years. The observed proportion scores ranged from 0.47 to 0.67. The highest observed proportion was obtained for the sentence "Mother cooked rice" (0.67), followed by "Children play elephants" (0.63), whereas the lowest observed proportion was noted for "Father is sitting at home" (0.47). The binomial test analysis revealed that there was no significant difference in the ability to judge sentence correctness for any of the sentences among children aged 6 to 7.11 years ($p > 0.05$). These findings indicated that children in this age group showed developing but inconsistent sentence correctness judgment abilities in Malayalam.

Table 2

Shows the ability to judge correct and incorrect sentences in Malayalam-among the age group 8 to 9.11 years

	Age group: 8 to 9.11 years		
	Observed proportion	p value	Significance
1)He is going to school	0.77	0.005	S
2)Children play elephants	0.80	0.001	S
3)Mother cooked rice	0.77	0.005	S
4)The flower red is beautiful	0.80	0.001	S
5)Father is sitting at home	0.63	0.200	NS
6) Rain falling today day	0.73	0.016	S
7) She is reading a book	0.90	< 0.001	S
8) Dog runs fast very	0.87	< 0.001	S
9) The moon shines in the sky	0.83	< 0.001	S
10) They laugh together along	0.87	< 0.001	S

S-Significant

FIG 2

Shows the ability to judge correct and incorrect sentences in Malayalam among the age group 8 to 9.11 years

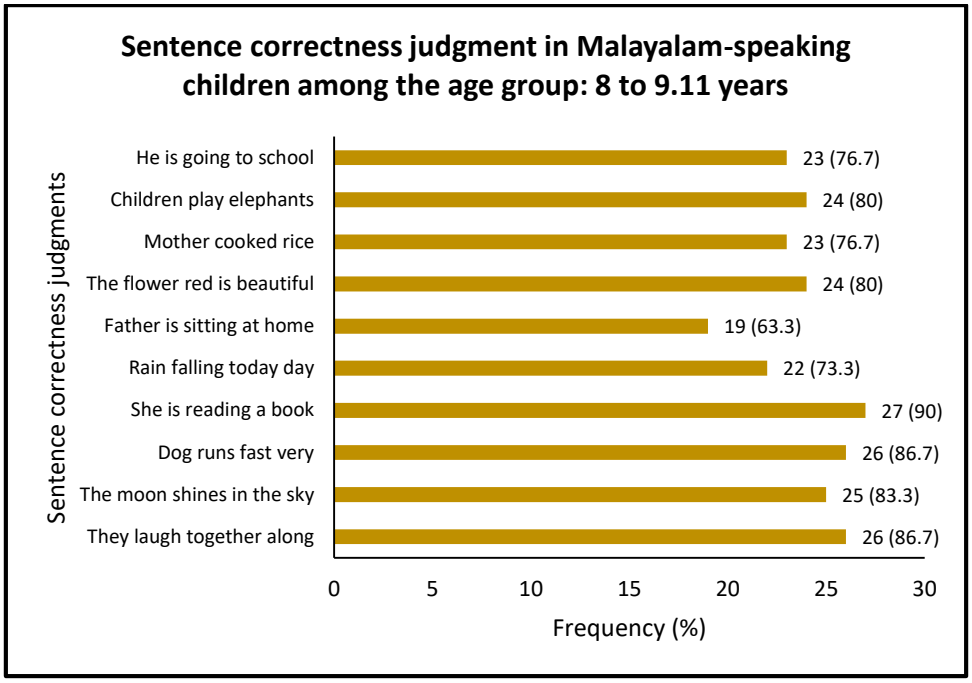

Table 2 and Figure 2 presented the ability to judge correct and incorrect sentences in Malayalam among the age group of 8 to 9.11 years. The observed proportion scores ranged from 0.63 to 0.90. The highest observed proportion was obtained for the sentence "She is reading a book" (0.90), followed by "Dog runs fast very" and "They laugh together along" (0.87), whereas the lowest observed proportion was noted for "Father is sitting at home" (0.63). The binomial test analysis revealed a significant difference in the ability to judge sentence correctness for most of the sentences among children aged 8 to 9.11 years ($p < 0.05$), except for "Father is sitting at home" ($p > 0.05$). These findings indicated that older children showed better and more consistent sentence correctness judgment abilities in Malayalam.

Table 3

Shows the Comparison of sentence correctness judgment according to age groups

		Age groups				Chi square	p value	Significance
		6 to 7.11 years		8 to 9.11 years				
		n	%	n	%			
1) He is going to school	Correct response	15	50.0	23	76.7	4.59	0.032	S
	Incorrect response	15	50.0	7	23.3			
	Correct response	19	63.3	24	80.0	2.05	0.152	NS

2) Children play elephants	Incorrect response	11	36.7	6	20.0			
3) Mother cooked rice	Correct response	20	66.7	23	76.7	0.74	0.390	NS
	Incorrect response	10	33.3	7	23.3			
4) The flower red is beautiful	Correct response	16	53.3	24	80.0	4.80	0.028	S
	Incorrect response	14	46.7	6	20.0			
5) Father is sitting at home	Correct response	14	46.7	19	63.3	1.68	0.194	NS
	Incorrect response	16	53.3	11	36.7			
6) Rain falling today day	Correct response	15	50.0	22	73.3	3.46	0.063	NS
	Incorrect response	15	50.0	8	26.7			
7) She is reading a book	Correct response	17	56.7	27	90.0	8.52	0.004	S
	Incorrect response	13	43.3	3	10.0			
8) Dog runs fast very	Correct response	16	53.3	26	86.7	7.94	0.005	S
	Incorrect response	14	46.7	4	13.3			
9) The moon shines in the sky	Correct response	15	50.0	25	83.3	7.50	0.006	S
	Incorrect response	15	50.0	5	16.7			
10) They laugh together along	Correct response	16	53.3	26	86.7	7.94	0.005	S
	Incorrect response	14	46.7	4	13.3			

FIG 3

Shows the Comparison of sentence correctness judgment according to age groups

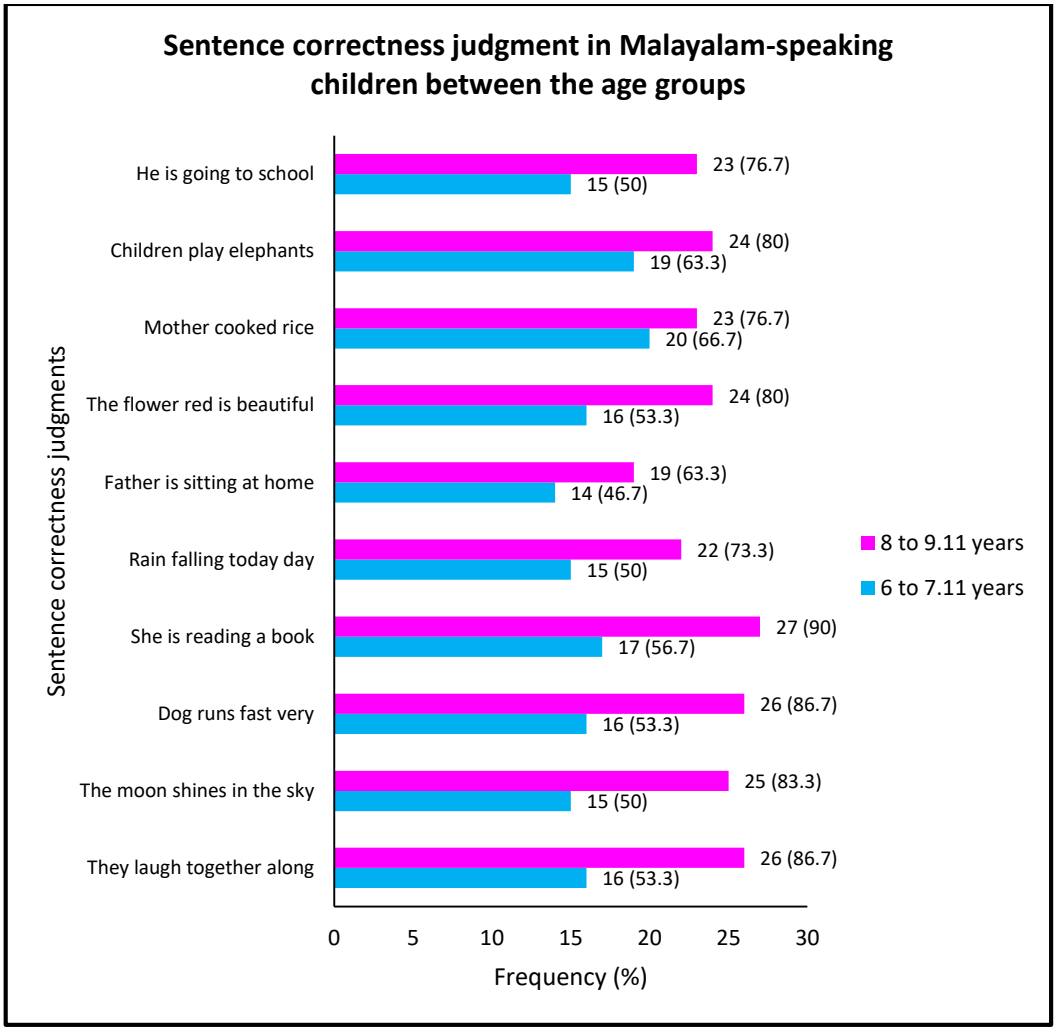

Table 3 and Figure 3 presented the comparison of performance in sentence correctness judgment in Malayalam-speaking children according to the age groups of 6 to 7.11 years and 8 to 9.11 years. The percentage of correct responses was higher among children aged 8 to 9.11 years compared to children aged 6 to 7.11 years for all the sentences. The highest correct response among the older age group was obtained for the sentence “She is reading a book” (90.0%), followed by “Dog runs fast very” and “They laugh together along” (86.7%), whereas the younger age group showed the highest correct response for “Mother cooked rice” (66.7%). The Chi-square analysis revealed significant differences between the two age groups for the sentences “He is going to school” ($p = 0.032$), “The flower red is beautiful” ($p = 0.028$), “She is reading a book” ($p = 0.004$), “Dog runs fast very” ($p = 0.005$), “The moon shines in the sky” ($p = 0.006$), and “They laugh together along” ($p = 0.005$). However, no significant differences were observed for the remaining sentences ($p > 0.05$). These findings indicated that older children demonstrated better sentence correctness judgment abilities in Malayalam compared to younger children.

5. Discussion

The present study examined age-related differences in sentence correctness judgment in Malayalam-speaking children aged 6–10 years using a sentence judgment task. The findings indicated that older

children performed better than younger children in identifying correct and incorrect Malayalam sentences, demonstrating a clear developmental progression in metalinguistic and grammatical awareness. Younger children aged 6–7.11 years showed comparatively lower and inconsistent performance, whereas older children aged 8–9.11 years demonstrated better and more consistent sentence correctness judgment abilities. In terms of sentence types, children performed better for simple and familiar sentence structures, while grammatically incorrect and syntactically complex sentences were more difficult to judge accurately. This developmental pattern is consistent with previous research, suggesting that grammaticality judgment abilities improve gradually with age and cognitive maturation. Overall, the findings suggest that sentence correctness judgment skills develop progressively in Malayalam-speaking children and emphasize the importance of establishing age-specific normative data for accurate identification of language and metalinguistic difficulties.

Summary and Conclusion

The present study focused on age-related differences in sentence correctness judgment in typically developing Malayalam-speaking children aged 6–10 years. The findings revealed a clear age-related improvement in the ability to judge correct and incorrect Malayalam sentences, with older children performing better than younger children across the sentence judgment task. Younger children showed greater difficulty in accurately identifying sentence correctness, whereas performance improved with increasing age. The study also found that children performed better for simple and familiar sentence structures, while grammatically incorrect and syntactically complex sentences were more difficult to judge accurately.

In conclusion, sentence correctness judgment abilities follow a gradual developmental pattern, progressing from less consistent to more accurate grammatical judgment skills with age. Age plays a significant role in the development of metalinguistic and grammatical awareness, and sentence complexity may influence performance, especially in younger children. These findings highlight the importance of considering developmental stages while assessing language and metalinguistic skills and emphasize the need for age-specific normative data for accurate clinical evaluation and intervention in Malayalam-speaking children.

Limitations

The present study has several limitations. A limited sample size was used in the study, which may restrict the generalization of the findings. Only typically developing Malayalam-speaking children were included, and the findings cannot be generalized to children with language disorders or other clinical populations. The study focused only on Malayalam language sentence correctness judgment tasks and did not include comparisons with other languages or bilingual populations. In addition, only sentence correctness judgment performance was measured in the study, while detailed error analysis and other language measures were not included. These limitations may restrict the broader applicability of the findings.

Future Directions

The study can be extended with larger sample sizes to improve the generalizability of the findings. Similar research can be conducted with different age groups, including younger children, adolescents, and adults, to better understand the developmental progression of sentence correctness judgment abilities. Future studies can also be carried out among clinical populations such as children with language disorders,

learning disabilities, or other communication difficulties. In addition, further research may include detailed error analysis, sentence complexity measures, and other cognitive and linguistic factors related to sentence correctness judgment abilities in Malayalam-speaking individuals.

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