

# Fluency Development in Malayalam Speaking Children of 3.0 to 4.6 Years

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**Abstract:** Fluency development in Malayalam speaking children of 3.0 to 4.6 years **ABSTRACT** This study traces the developmental patterns of Malayalam-speaking children by examining the discrepancies between 20 typical Malayalam-speaking children aged 3.0 to 4.6 years of age. Three tasks were used to elicit speech samples, namely general conversation, story narration and recitation. Unfilled pauses, filled pauses repeats, false starts, parenthetical comments, prolongations and audible inspiration/expiration were the forms of disorders analysed. The average percentage of differences was also determined in each group. The findings indicate that more filled pauses accompanied by audible inspiration/expiration, repetitions, prolongation, unfilled pauses; false starts and parenthetical remarks were taken by children in the age range of 3.0 to 4.6 years. As age increased, unfulfilled pauses, repetitions and prolongations declined. As age progressed, filled pauses, false starts, parenthetical remarks and audible creativity and expiration increase. In an age range of 3.0 to 3.6 years, parenthetical remarks were not found. In conclusion, it can be said that the growth of Malayalam-speaking children's fluency followed a comparable pattern in other Indian languages. The present finding has led to the differential diagnosis of normal non-fluency and stuttering and may also assist in the design of effective therapeutic approaches for the necessary ones.

**Keywords:** Fluency development, Development patterns, Unfilled pauses, filled pauses, repeats, false starts, parenthetical comments, prolongations

## 1. Aim

Purpose of this study is to determine the development of fluency across age in Malayalam speaking children and to highlight the type and nature of disfluencies observed in children of the age range 3.0 to 4.6 years. For this purpose, 20 children of the age range 3.0 to 4.6 years have taken as subject. Children are divided into 4 age group, each with 6 months interval. The age group studied are:

- 3.0 to 3.6 years
- 3.6 to 4.0 years
- 4.0 to 4.6 years

Demographic data taken for the study is shown in Table 1

Subject no	Sex	Age
1	F	3.2
2	M	3.3
3	F	3.5
4	M	3.2
5	F	3.4
Average age		3.32

### 3.0 – 3.6 Years 3.6 – 4.0 Years

Subject no	Sex	age
1	F	3.9
2	M	3.9
3	M	3.11
4	M	3.10
5	F	4.0
Average age		3.60

### 4.0- 4.6 Years

Subject no	Sex	Age
1	F	4.5
2	M	4.3
3	M	4.5
4	F	4.2

5	F	4.5
Average age		4.4

Speech samples were elicited by using three speech tasks

- General Conversation,
- Story narration
- Recitation.

The types of disfluencies were analysed for the three speech tasks. The results are discussed below with respect to the four-age group studied.

### 1) 3.0- 3.6 Years

Maximum speech output was obtained from story narration followed by recitation and general conversation. The percentage of each study types of disfluencies for the 3 tasks are given in table 2

**Table 2:** Percentage of different types of disfluencies in different tasks

Disfluencies	Task 1	Task 2	Task 3
UFP	3.51	5.2	1.35
FP	10.52	11.61	6.75
Rep	8.77	13.55	8.11
FS	-	1.93	1.35
PR	-	-	-
Pro	1.75	4.52	-
AI/AE	7.01	5.8	4.05
Total % of Disfluencies	31.56	42.61	21.61

UFP – UNFILLED PAUSES

PR – PARENTHETICAL REMARKS

FP – FILLED PAUSES Pro - PROLONGATIONS

Rep – REPETITIONS

AI/AE – AUDIBLE INSPIRATIONS/

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FS – FALSE STARTS AUDIBLE EXPIRATIONS

A high percentage of disfluencies were found in story narration task. This can be attributed to the length of utterance and complexity of utterance as children had to form their own sentences in the story narration task. This was followed by general conversation. The least percentage of disfluencies was found in recitation. This is because the recitation is previously learnt by the child and the flow of speech is easier than in other tasks.

The number and percentage of disfluencies for each type of disfluencies for the subjects has been tabulated in Table II a.

Disfluencies	1	2	3	4	5	% of Type of Disfluency
UFP	4	2	1	2	1	3.42
FP	9	6	4	6	4	10.11
Rep	9	10	5	4	4	10.78
FS	-	-	2	1	1	1.6
PR	-	-	-	-	-	-
Pro	3	1	1	1	2	2.832
AI/AE	3	3	4	3	2	5.31
Total % of disfluencies for each subject	43.1	31.42	30.35	35.41	29.8	

Table II (b): Number and percentage of disfluencies for each type of disfluency for each subject

Types of Repetitions	1	2	3	4	5	Total % of Types of Repetitions
Syllable	3.08	5.71	3.57	2.08	2	3.74
Part Word	3.08	2.86	-	-	-	1.91
Phrase	1.54	1.43	-	1.7	2.17	1.86
Word	6.15	4.28	3.57	2.08	2.17	3.64

In the age group of 3.0 to 3.6 years the most observed type of disfluencies was repetitions. The percentage of repetition was 10.78 in the speech samples obtained. This was followed by filled pauses (10.11%), audible inspirations/expiration (5.31%) and unfilled pauses (3.42%). The least observed disfluencies were prolongation (2.83%) and false starts (1.61%). Parenthetical remarks were not at all observed in this age group.

When comparing each task for each type of disfluencies a high percentage was observed in story narration followed by general conversation, and recitation. False starts were observed for general conversation.

In repetition the most observed types were (3.74%) followed by word repetition (3.64%), phrase repetition (1.86%) and part word repetition of syllable, phrase and word were greater in younger age group.

All the types of disfluencies except parenthetical remarks occurred more in the initial position and the disfluencies occurred more in the content words, especially nouns. This in agreement with the findings of Nagapoornima (1990)

2) 3.6 to 4.0 years

Maximum speech samples were elicited from story narration followed by general conversation and recitation. The

percentages of each type of disfluencies for the three tasks are given in Table III.

Disfluencies	Task 1	Task 2	Task 3
UFP	3.66	3.02	6.15
FP	17.07	17.24	6.15
Rep	7.31	10.77	3.08
FS	3.65	2.15	-
PR	-	1.29	-
Pro	8.53	5.17	6.15
AI/AE	1.22	8.18	13.85
Total % of Disfluencies	41.44	47.82	35.38

Table III a: Percentage of different types of disfluencies in different tasks.

In this age group all the highest percentage of disfluencies were found in story narration task because of the complexity and length of utterance, and least was found in recitation.

All the type of disfluencies was found to occur more in the initial position than in the medial position.

The number and percentage of disfluencies for each type of disfluencies for the subjects has been tabulated in Table III a.

Disfluencies	1	2	3	4	5	% of Type of Disfluency
UFP	-	2	7	3	2	3.7
FP	35	12	2	9	2	15.83
Rep	7	6	13	3	3	8.44
FS	3	2	1	2	2	2.64
PR	1	-	-	1	1	0.79
Pro	4	1	-	3	9	4.48
AI/AE	9	8	9	1	7	8.97
Total % of disfluencies for each subject	48.1	47	48.5	31.42	48.14	

Table III (a): Number and percentage of disfluencies for each type of disfluencies for each subject

Types of repetition which was observed are given in table III b.

Types of Repetitions	1	2	3	4	5	Total % of Types of Repetition
Syllable	2.53	1.51	6.06	2.85	-	2.0
Part Word	0.81	1.51	7.57	1.43	3.70	3.0
Phrase	-	3.03	-	-	-	0.61
Word	2.43	7.57	6.06	-	1.85	3.14

Table III b: percentage of types of repetitions observed for each subject.

In the age group of 3.6 years the most occurring type of disfluencies was filled pauses. The percentage of filled pauses was 15.83 this was followed by audible inspiration/expiration (8.97%), repetition (8.44%) and prolongations (4.48%). The least occurred disfluencies were unfilled pauses (3.7%), false starts (2.64%) and parenthetical remarks (0.79%).

When comparing each task unfilled pauses were most found in recitation (6.15%) than general conversation (3.66%) and story narration (3.02%) filled pauses and repetition were more found in story narration.

False starts were more found in general conversation and were not at all observed in recitation. Parenthetical remarks was found only in story narration. Prolongation was more observed in general conversation than in other tasks. Audible inspiration/ expiration were found a recitation and was least found in general conversation. Word repetition (3.14%) were found more in number than in other types. The least found type of repetition was phrase repetition (0.61%).

3) 4.0 to 4.6 years

In this age group speech samples was elicited from story narration tasks followed by recitation and general conversation.

Table 4 gives the percentage of each types of disfluencies for the three tasks.

Disfluencises	TASK 1	TASK 2	TASK 3
UFP	-	1.1	1.20
FP	9.43	6.77	3.61
Rep	3.77	4.51	1.20
FS	1.88	2.01	2.40
PR	3.77	5.01	-
Pro	1.88	-	-
AI/AE	7.54	7.76	7.22
Total % of Disfluencies	28.27	27.16	15.63

This age group showed highest percentage of disfluencies with general conversation (28.27%) followed by story narration (27.16%). The least percentage of disfluencies were found in recitation task (15.63%)

All the type of disfluencies occurred in the initial position and more often in the content words. This is in agreement with the findings of Indu (1990). Were in she found that normal Kannada speaking children of the age range 4-5 years have more disfluencies occurring in the content words especially nouns than functional words.

The number and percentage of disfluencies for each type of disfluencies for the subjects has been tabulated in table IV b

Table IV (a): percentage of different types of disfluencies different tasks.

Disfluencies	1	2	3	4	5	% of type of disfluency
UFP	3	1	1	-	1	1.12
FP	3	6	3	10	10	5.98
Rep	3	10	4	3	1	3.92
FS	-	6	2	1	1	1.9
PR	-	17	1	3	1	4.11
Pro	1	-	-	-	-	0.18
AI/AE	4	4	21	8	3	7.47
Total % of disfluencies for each subject	19.4	28.76	28.32	20.16	20.48	

Table IV (b): number and percentage of disfluencies for each type of disfluency for each type

Types of repetitions which were observed are given in table IV d

Types of Repeations	1	2	3	4	5	Total % of Types of Repeation
Syllable	-	-	1.77	2.41	-	0.78
Part Word	-	0.65	-	-	-	0.13
Phrase	-	-	0.88	-	1.22	1.12
Word	4.17	4.88	0.88	-	-	1.99

Table IV c: percentage of types of repetitions observed for each subject.

In the age group of 4.0 to 4.6 years audible inspiration/expiration were the type of disfluencies that occurred the most and the percentage was 7.47. This was followed by filled pauses (5.98%), parenthetical remarks (4.11%) and repetition (3.92%). The least occurring were unfilled pauses (1.21%) and prolongation (1.18%)

For each tasks filled pauses were more seen in general conversation (9.43%) and the least was in recitation (3.61%). Unfilled pauses were more found in recitations (1.20%) than in story narration (1.1%) and were not found in general conversation. Repetition, parenthetical remarks and audible inspiration/ expiration had highest percentage in story narration. False starts were more seen in recitation. Parenthetical remarks were not observed in recitation and prolongations was only observed in general conversation. When considering the types of repetition, word repetition (1.99%) outnumbered followed by phrase repetition (1.12%). The least occurring was part word repetition (0.13%).

Indu (1990) observed that Kannada speaking children in the age range of 4 to 5 years had more filled pauses repetitions followed by parenthetical remarks, but the findings of the present study shows that the audible inspirations were more in the age range 4.0 to 4.6 years and contradicts Indu's finding. It was observed that one among the five subjects had greater number of audible inspirations.

Mc Dearman (1968) found that filled pauses were greater between 4 – 5 years of age. The present study showed similar results.

In general, following trends were observed:

- Among unfilled pauses the age group of 3.6 to 4.0 had the highest percentage. As the age advanced unfilled pauses decreased.
- Filled pauses increased as the age advanced but it is found least in the age group of 4.0 to 4.6 and had the highest value (13.24%) in the age group of 3.6 to 4.0 years and a slightly decreased at the age group of 4.6 to 5.0 years.
- A decrease in repetition was noticed as the age advanced. A high percentage was observed in the lowest age group. The least percentage was observed in the age group of 4.0 to 4.6 years. The most observed type of repetition was word repetition followed by syllable repetition and part of word repetition. The least occurring was phrase repetition.
- Even though the least percentage of false starters was found in the age group of 4.0 to 4.6 years, it was noted that false starters increased as the age increased.
- Parenthetical remarks also showed an increment as the age advanced peaking at the group of 4.0 to 4.6. No instances of false starters were noticed in the lowest age group.
- Prolongation decreased as the age advanced. The highest percentage was observed in the age group 3.6 to 4.0 years and least in the age group of 4.0 to 4.6 years.

- Audible inspirations were maximally seen in the age range of 3.6 to 4.0 and the least was in the lowest age group.
- Disfluencies were more seen in the initial position than in medial and final position.
- Disfluencies were more observed in content words like verbs, than in functional words.

Repetitions of all kinds had variable trend between the age groups studied. More repetitions found in the lower age groups, i.e. 3.0 to 3.6 and 3.6 to 4.0. The trend observed in the study is the agreement with the previous findings. Starkweather (1987) suggest that the pauses seen in the speech of a child or an adult can convey information and should not be considered as discontinuities because the flow of information continues including the pauses. Hence the child uses a filled pause to convert to the listener that he is continuing or that because of his language formulation he prefers to pause, or he is trying to cope with the anatomical or physiological constraints that are acting up on him or he has not understood the listener.

Adams (1982) comments that in immature CNS system, a developing phonological, syntactic, semantic, pragmatic, and cognitive structures act as physiological constraints and thus children's speech are characterised by filled and unfilled pauses.

The results of the present study suggest that more unfilled pauses and filled pauses are found in the age groups of 3-4 years and declines as the age increases.

Krik Patric (1915) believes that children repeat because they do not have tangible evidence that they have been understood. Fisher (1932) says the children repeat because they show interest on having things repeated to them and enjoy intentional repetition of nonsense words and patterns of new words, unknown remarks etc.

Metraux (1950) opines that preschool children repeat to make personal and social contact and is related to the child's interest in repetition and his demand for repetition from others.

In this study it is found that as the age increased, repetition decreased. Branscom (1955) noticed that repetitions of syllables were less than word repetitions and phrase repetition. In the present study similar findings are noted except for the age group of 4.0 – 5.0 years.

Susan Zuckerman (1980) studies normal children between 3 and 4 years of age and observed that filled pauses increased from 3-4 years of age whereas repetition decreased. Similar results have been noticed in the present study.

In Haynes and Hood (1977) suggested that children repeat in the early ages to gain processing time and later shift to filled pause and revisions because there is an increase in the language complexity. The present study suggest that repetitions are found to be more in younger ages and filled pauses are found to be less in younger ages.

False starts are found to be increasing as the age increases. This does not agree with the studies done by Goldman Eisler (1968), Bertel Bjerkan (1980) and Susan Zuckerman (1980).

Parenthetical remarks were found maximally at the age groups of 4 to 4.6 years. But was less in the age group of 3.6 -4 and 4.6 -5 years. Parenthetical remarks were not at all observed in the age group of 3.0-3.6 years. But it is noticed that in all the age groups were parenthetical remarks decreased a high percentage of filled and unfilled pauses were observed and in the age groups of 4- 4.6 a decreased percentage of pauses were observed.

In the present study it is found that prolongation decreased as the age increased. This is supported by the studies done by Metraux (1950) and Helmerich and Bloodstein (1973).

The results of this study suggest that audible inspiration were found to be more as the age advanced. This is in agreement with the study done by Silverman (1973) where he found a greater percentage of occurrence of audible inspirations in the speech of 4-year-old. But the present study is contradictory with the study done by Yairi (1981) Wexler and Mysak (1982).

In the present study disfluencies were more seen in initial position. Findings of the studies done by Nagarapoomima (1990) and Indu (1990) support this.

To summarise the most occurring disfluencies in Malayalam speaking children of the age range 3.0 to 4.6 years are filled pauses followed by audible inspiration/expiration, prolongation, repetition, unfilled pauses, false starts and parenthetical remarks.