Transitives, Intransitives, Causatives and Sentence Types in Malayalam Speaking Children with Intellectual Disability

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Abstract

Children with Intellectual Disability (CWID) demonstrated an increased performance with increased MA. Higher MA (5-6 years) group produced more sentences per turn and longer sentence length than the lower MA (4-5 years) group. Thus, language performance can be predicted based on what is known about syntax at between 4 and 6 years. It was generally noted that the CWID group produced few spontaneous sentences, i.e., sentences other than what the adult stimuli required. This suggests the possibility that CWID have limitations in the cognitive processing of linguistic input which may occur at the point of decoding, encoding or both. Such difficulties in accessing or recalling information and availability of stored information have been noted previously in the ID population CWID showed delayed development of syntax. The LARSP procedure has been adapted successfully to describe the language of CWID in Kannada (Kumaraswamy, 2021; Subbarao, 1995). The present study followed a similar methodology and described language (in terms of syntax skills) of Malayalam speaking CWID. The objectives of the study were analyzing their expression data on transitives, intransitives, causatives, and sentence types. The description of Malayalam spoken syntactic structures was obtained from two sources, namely Grammar of Malayalam (Nair, 2012) and Malayalam - Descriptive Grammars (Asher, & Kumari, 1997). 60 CWID (4-6 years MA) were studied using natural conversational samples using toys, play materials, pictures. Transitives and intransitive verbs were used equally by CWID groups. Causative forms were used less by CWID groups. This is likely the result of causative forms used less frequently in spoken Malayalam variety of Malayalam sentence types were seen in CWID groups with comparable performance. Wh questions, adjectival use, declaratives were seen in all

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children. Interrogative sentence usage increased in the higher MA group indicating its developing nature. Generally, no complex sentence usage was observed.   Syntax proved to be a difficult part of language performance in CWID.

Keywords: ID - Intellectual Disability, TD children-Typically Developing children, CWID- Children with Intellectual Disability, MA- Mental Age, LARSP- Language Assessment, Remediation and Screening Procedure

Language is a systematic and conventional use of sounds (or signs or written symbols) for the purpose of communication and self-expression (Crystal, 1995). The child who learns a language achieves the ability to recognize and produce a set of sounds and learns how these sounds can and cannot be combined into possible words. It is important to understand that language and the expression of the language are two different things. Language exists in the mind, and it exists if it is expressed or not.

The five language domains are phonology, morphology, syntax, semantics and pragmatics. Phonology is the study of speech sounds (i.e., phoneme) of a language, including the rules for combining and using them. Morphology is the study of the rules that govern how morphemes, the minimal meaningful units of language, are used in a language. Syntax is the study of rules that pertain to the ways in which words can be combined to form sentences in a language. Semantics is the study of meanings of words and combinations of words in a language. The final component Pragmatics is the study of language use in conversation and in broader social situations.

Among the five domains of language, syntax is considered as the central component. Knowledge of the syntactic system allows a speaker to generate an almost infinite number of sentences and to recognize which sentences are grammatical and which sentences are not. The parameters/structures of syntax include:

i. Morphophonemic-structures, ii. Plurals, iii. Tenses, iv. PNG markers, v. Case markers, vi. Transitives, intransitives, and causatives, vii. Sentence types, viii Conjunctions, Comparatives and Quotatives, ix. Conditional Clauses and x. Participle constructions.

Intellectual Disability (ID), formerly known as Mental Retardation, is a form of disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills originating before the age of 18 (The American Association on Intellectual and Developmental Disabilities [AAIDD] 2010).

Syntax has an important role in reading, writing and conversation. Children with Intellectual Disability (CWID) acquire syntax skills in generally the same pattern and order as their MA matched TD children.

Fowler (1990) found that there is no difference in the usage of syntax in children with Down syndrome (DS) in the early stages of development compared to MA matched TD children. However, older children with DS showed phonological morphosyntactic deficits with relatively preserved lexical abilities.

Fowler et al. (1994) also suggested that children with DS have conversational skills beyond their expressive language levels even though syntax is the greatest area

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of deficit, indicating a relative strength in their social communication. Chapman et al. (1998) suggested that when expressive language was measured by mean length of utterance and number of words in conversational and narrative samples, children with DS showed greater impairment in expressive language than in non-verbal cognition.

Grela (2002) analyzed the language transcripts of seven MA matched TD children and children with DS and with comparable MLU levels so they could examine several measures of lexical diversity (percentage of utterances containing lexical verbs, number of verb tokens produced, a mean number of verbs per utterance, number of verb types used, and number of mental state verbs used). Grela's results suggested that the children with DS produced lexical verbs as frequently as TD children. Interestingly, a larger variety of lexical verbs were seen in children with DS compared to their TD counterparts. The results of the study supported other previous findings that children with DS show a relative strength in expressive vocabulary when compared to syntactic development.

Zampini and D'Odorico (2011) compared the lexical and syntactic development of 12 Italian children with DS with that of 12 TD children, considering their spontaneous production. Particular attention was given to the relationships between these linguistic areas and the transition from single-word utterances to multi-word combinations (that is, transitional forms). Results showed children with DS had more difficulties using grammatical sentences correctly even if they combined words. The theoretical relevance of the study lies in the fact that a relationship between lexical and syntactic skills supports the hypothesis of interdependence between these two language domains; the practical relevance of the results lies in the fact that intervening on lexical abilities could have a beneficial effect on syntactic skills.

Sepulveda et al. (2013) studied morphosyntactic skills in DS. An intervention programme was designed and carried out with a total of 20 Spanish-speaking children with DS; half of them composed the experimental group and the other half the control group. The results suggested that the children in the experimental group improved more than the children in the control group in the areas of syntax, morphology and semantics, but not in pragmatics, where both groups improved to the same extent. The study concluded that results which were obtained support the effectiveness of the programme implemented as a clinical and educational tool for intervention in individuals with DS.

Varussa and Rose (2015) examined the writing abilities of individuals with DS and Williams syndrome (WS) and 11 MA matched TD children. Results suggested that the two groups with DS and WS did not differ from TD in writing a list of objects placed in bedroom, in the number of errors in the text composition, in a text copying task and in kind of errors made. However, in a word dictation task, individuals with DS made more errors than individuals with WS and TD children. In a pseudo word dictation task, both individuals with DS and WS showed more errors than TD children. The results also revealed good abilities in individuals with ID in different aspects of writing indicating that the presence of ID does not prevent the achievement of writing skills.

Frizelle et al. (2018) did a study on 33 children with DS, 22 children with cognitive impairment (CI) and 33 TD children who did not differ on raw scores on a test of non-verbal cognitive ability. They used a newly devised animation task to

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examine how well individuals with DS could understand relative clauses, complement clauses and adverbial clauses compared to other two groups. Test for the Reception of Grammar-2, three measures of memory (forward and backward digit recall, visuo-spatial memory) and a hearing screen was administered on all participants. Results suggested that with the exception of intransitive subject relative clauses, children with DS performed poorly on all other complex sentences. They performed at a significantly lower level than children with CI and TD children. Also, children with DS have significant proportion of the variance over and above memory skills. The finding of the study suggests that children with DS have a disproportionate difficulty understanding complex sentences compared to two control groups matched on MA.

Koizumi et al. (2019) investigated conditions of syntactic development in native Japanese speaking CWID and suggested that syntactic development in CWID was significantly delayed in comparison to MA matched TD children. But as MA advanced, syntax abilities improved in CWID.

Wimmer, Witecy and Penke (2020) studied the production of Wh questions in an experimental task eliciting WH questions of 23 German speaking children with DS and 15 TD children matched for nonverbal MA. Results indicated that most of the participants with DS showed significant difficulties producing complex syntactic structures like Wh questions compared to the performance of TD children.

Subbarao (1995) studied natural conversations with 20 Kannada speaking TD children and 60 CWID matched for MA. Results on syntactic analysis presented a varied picture for both TD and CWID. MA matched CWID performed poorly compared to TD children. Overall, a delay in syntactic development was seen. The tense markers: present and past were used by a large number of children in both groups of children. Future/habitual tense was mainly used only by the TD group. Continuous tense was not used by any child. Except for the second person markers, other PNG (Person Number and Gender) markers were seen frequently in TD groups. Only CWID showed some evidence of second person usage. First person and third person markers predominate in the samples probably due to the nature of data collection which involved spontaneous play and conversation, where the children responded to a clinician's stimuli. CWID did not use predicate forms, conjunctions, comparatives and quotatives, conditional clauses or participle constructions. TD children showed some evidence of using some of these syntactic language elements. Certain difficulties in CWID were less obvious; for example, less frequent use of plural markers other than unmarked plurals. CWID produced several sentences with inappropriate use of grammatical markers, e.g. PNG markers and adjectival nouns and generally used simple sentences. The frequently seen sentence types were interrogatives, declaratives and negations and possessives. Tag questions, imperatives and other sentence types were rarely seen in these subjects. TD children produced much more varied sentences and sentence structures. CWID showed delayed development of syntax and uneven performance compared to MA matched TD children. CWID develop syntax in a similar manner as TD children, although development is delayed with respect to their MA.

Aims of the Study

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The present study focused primarily on obtaining selected syntax structures/ parameters in spontaneous language samples of CWID following the previous research of Subbarao (1995) and using an adapted form of Language Assessment, Remediation and Screening Procedure [LARSP] (Crystal et al., 1976 and 1989) in Malayalam speaking with CWID in the MA ranges of 4 - 5 and 5 - 6 years with the objectives of:

Analyzing their expression data on:
1. Transitives, Intransitives, Causatives and
2. Sentence types

Participants in the Study With Inclusive and Exclusive Criteria

Participants included 60 CWID in the age range of 4-6 years Mental age, subdivided as group I (4-5 years MA) and group II (5-6 years MA) who were attending special schools in Kerala. The mental age details were obtained from their school records.

Inclusion Criteria

1. Children who were attending special school for at least 3-4 years were taken for the study.
2. Native Malayalam speakers were taken.
3. Children with mild to moderate intellectual disability as per their school records.

Exclusion Criteria

1) Children with any neurological, physical or sensory handicap were excluded from the study.
2) Children with severe intellectual disability were excluded from the study

Stimuli Used

Selected transitives, intransitives, causatives, and sentence types.were taken from Malayalam – descriptive grammar (Asher & Kumari; 2013), Grammar of Malayalam (Nair 2012).

Data Collection and Analysis

The focus of this study was an analysis of their syntax structures, namely, transitives, intransitives, causatives, and sentence types. The general guidelines provided by the LARSP (Crystal et al., 1976 and 1989) was used for transcription of the sample and analysis of the response patterns. LARSP was developed as a single procedure integrating the clinical operations of screening, assessment, and remediation in the area of grammar. It is based on a description of English grammar. Modifications and adaptations of these guidelines followed those of Subbarao (1995) who studied Kannada speaking children. Children interacted during play for about 25 to 30 minutes. Toys and play materials, common objects, topic of conversation and list of pictures were used to elicit the responses. The presence of parameter was marked as 1 and the absence /inappropriate usage was marked as 0. The entire session was audio /video recorded using a Hewlett-Packard (HP) tablet, model - 7 voice tab.

Results and Discussion

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1.Transitives, Intransitives, and Causatives

CWID

Table: 1 Shows that 100% of both Group I and II CWID used transitives, and intransitive forms of the verb. Causatives were used by 46.7% of Group I and 66.7 % of Group II children. Overall, causatives were found to be less frequent; however, the differences were not statistically significant. The results of the present study support those of Subbarao (1995) who reported that all of the Kannada speaking CWID in both the lower MA (4-5 years) and higher MA (5-6 years) groups used transitive and intransitive forms. Causative forms were used by about 50% of the children in both groups. Kaur (2019) reported that similar to Hindi speaking TD children, CWID also showed a similar pattern in the usage of transitives and intransitives. But the causatives were not all developed in CWID. The results of both Dravidian languages appear to be similar.

Table 1

Transitives, Intransitives & Causatives in CWID with statistical evidence.

Transitives, intransitives & causatives	Group I CWID 4-5 year MA	n= 30 %	Group II CWID 5-6 years MA	n = 30 %	Z Value	P	Significance
Transitives	30	100%	30	100%	-	-	NS
Intransitives	28	93.3%	30	100%	1.44	0.156	NS
Causatives	14	46.7%	20	66.7%	1.56	.123	NS

HS- Highly significant, S – Significant, NS-No significance

3. Sentence types

CWID

Table 2 presents the percentage of CWID using sentence types. All children in both Group I (4-5 years MA) and Group II (5-6 years MA) used the sentence types 'Wh' questions, declaratives, adjectival use and possession sentences. Negation sentences were used by more than 80% in both groups. Sentence types, interrogative tag, quotatives, affirmative and reduplicated sentences were used by nearly 40% of the Group I and 60% of the Group II children. The results indicate that some of these sentences are still difficult for CWID. Further, some sentence types, namely Y/N questions, imperatives and reflexive sentences were not seen in either group. Statistical differences occurred for interrogative tags and affirmative sentences. In general, it can be concluded that CWID showed simple sentences and phrases basically responding to the investigator's stimuli sentences. It was noted that when children could not recall the words to complete the sentence, they pointed to the objects. Although children used words for simple adjectives (e.g., color names) they did not use them in sentences.

Table 2

Sentence Types in CWID with statistical evidence.

Sentence types	Group I CWID	n= 30 %	Group II CWID	n= 30 %	Z Value	P	Significance

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	4-5 year MA		5-6 years MA				
Interrogative y/n	0	0	0	0	-	-	NS
Wh' question	30	100%	30	100%	-	-	NS
Interrogative tag	14	46.6%	22	73.3%	2.11	0.039	Sig
Adjectival use	30	100%	30	100%	-	-	NS
Declaratives	30	100%	30	100%	-	-	NS
Negation	26	86.6%	28	93.3%	0.86	0.393	NS
Affirmative sentences	12	40%	21	70%	2.34	0.023	Sig
Quotatives/Reported sentences	14	46.6%	20	66.6%	1.56	0.123	NS
Imperative sentences	0	0	0	0	-	-	NS
Reduplicated sentences	14	46.65	17	56.6%	0.78	0.441	NS
Possession	30	100%	30	100%	-	-	NS
Reflexive sentences	0	0	0	0	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

The results are in general agreement with studies on Kannada speaking children (Subbarao, 1995). Kumaraswamy (2021) reported a slight variation from the study by Subbarao (1995) that reduplicated 'Wh' interrogative utterances which were not frequently by CWID in his study. A reason for changes could be that language development patterns change with time. Kaur (2019) reported that only simple, affirmative sentences with no occurrence of complexity in sentences were seen in 5-6-year-old Hindi speaking CWID. The language data on Dravidian languages: Kannada and Malayalam appear to be comparable.

Results and Discussion

Transitives and intransitives were used by children in both groups. Higher MA group children performed better than lower MA group children in the usage of causatives. However, significant differences were not found. On sentence types, all children in both groups used the sentence types 'Wh' questions, declaratives, negation, adjectival use, and possession sentences. Sentence types like interrogative tag, quotatives, affirmative and reduplicated sentences were used more by higher MA Group II children when compared to lower MA Group I children. Some of these sentences are still difficult for CWID. Some sentence types, namely, Y/N questions, imperatives and reflexive sentences were not seen in either group. Thus, differences in performance appear to be mainly for interrogative tags and affirmative sentences.

Conclusion

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Syntax proved to be a difficult part of language performance in CWID. Transitives and intransitive verbs were used equally by CWID groups. Causative forms were used less by CWID groups. This is likely the result of causative forms used less frequently in spoken Malayalam. A similar observation was made in Kannada (Mallikarjuna, 1994, quoted by Subbarao, 1995).

A variety of Malayalam sentence types were seen in CWID groups with comparable performance. Wh questions, adjectival use, declaratives were seen in all children. Interrogative sentence usage increased in the higher MA group indicating its developing nature. Kannada speaking children showed a very similar presence of sentence types (Subbarao, 1995). Hindi speaking CWID showed only simple and affirmative sentences (Kaur, 2019). A similarity between sister languages Malayalam and Kannada can be observed. Generally, no complex sentence usage was observed.

CWID showed an inability to shift quickly to the next stimuli and continued to persist answering the previous stimuli. This was particularly observed while using quotatives. In general, even though syntactic structures were used, they were simple. Many instances of starting a sentence and not completing it were seen, probably reflecting difficulties in recalling words.

Limitations of the Present Study

1. Limited sample size
2. The participants were taken from the similar community. i.e. from a single dialectal population in Kerala.

Future Implications

1. To include larger number of participants
2. To include various dialectical communities in Kerala
3. Detailed research work is needed in other disordered population.

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