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Conditional Clauses Among Kannada Speaking Children with Intellectual Disability

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Introduction

Language development is a complex and crucial aspect of human cognition that greatly enhances our ability to communicate and interact with the world around us. While the majority of children acquire language skills during their early years there are certain groups, such as children with intellectual disability (CWID) who experience delay or impairment in language development. Intellectual disability is characterized by significant limitations in intellectual functioning and adaptive behaviours, affecting various aspects of everyday life including language skills.

However, in the Indian context, there is a paucity of research focusing specifically on the language and communication aspects of CWID. Although the field of speech-language pathology in India has shown an awareness of changing theoretical perspectives and linguistic aspects in typically developing and language-disordered populations there is a need to understand the language skills of CWID in order to provide appropriate assessment and intervention.

This comparative study aims to fill this knowledge gap by examining the language development of CWID in the Indian context and comparing it with typically developing children. By investigating the unique challenges and specific impairments experienced by CWID, this research will contribute valuable insights to the field of speech-language pathology in India. The findings will help in understanding the linguistic profiles of CWID, inform more targeted assessment approaches, and facilitate the development of effective intervention strategies.

Understanding the language abilities of CWID is essential as language deficits can significantly impact their daily functioning and social interactions. By exploring the linguistic profiles of CWID and comparing them to typically developing children, this study will provide a comprehensive understanding of the language development in CWID within the Indian cultural and linguistic context. Ultimately, the findings will contribute to improve assessment and intervention practices for CWID in India and enhance their overall communication and participation in society.

As the child's sentences grow longer, syntactic knowledge begins to become clearer. The word order links are established, and morphological inflections begin to be added (e.g. /s/ for plural) to the words. These grammatical morphemes appear to be developing in an order (Brown, 1973). Similarly, sequential learning is noted for negations, questions and other syntactic acquisitions (Flavell et. al., 1993).

As their cognitive and linguistic development progress, children acquire a wealth of knowledge and skill in the social - communicative uses of language. They learn how to converse and to maintain a topic with another person (Carrow-Woolfolk and Lynch, 1982). Impressive as these skills are, however, research on meta communication (knowledge and cognition concerning communication) suggests that children of kindergarten and older, still have some important communicative development ahead of them. They need to learn to monitor their own comprehension and to recognize the meaning and implications of lack of understanding (Flavell et. al., 1993).

Review of Literature

Intellectual disability (ID) is a neurodevelopmental disorder characterized by impaired cognitive, social and adaptive functions. Intellectual disability usually originates before 18 years of age and significantly characterized by limitation both in intellectual functioning and

adaptive behaviour as expressed in conceptual, social practical and adaptive skills (AAID, 2010; International classification of diseases 10 ICD,10).

The Census of India (2011) defines Intellectual disability as disability where an individual has

1. Lack of Comprehension as compared to his/her age group.

2. Unable to communicate his/her needs, compared to person of his/her age group.

3. Has difficulty in doing daily activities.

4. Has difficulty in understanding routine instruction.

5. Has extreme difficult in making decisions, remembering things or solving problems.

Due to significant delays in language and communication difficulties the condition of ID has attracted the attention of speech language pathologists steadily over the year.

Another area of concern is the understanding of the similarities and differences between language performance among group of children having Intellectual disability, Hearing Impairment, Autism, Cerebral Palsy and Multiple disabilities. It is a general experience of Speech language pathologists that largest population of children that seek therapy in clinics in India is those with Intellectual disability. However, there is no hard data to support accurate interpretation.

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The Census of India (2011) revealed that there was a significant increase in number of disabled persons in both rural as well as urban population compared to previous estimates. There was an increase seen in the male and female ratio. The census revealed that 20% of the disabled populations have disability in movement, 19% have disability in seeing, another 19 % have disability in hearing, 8% have multiple disabilities and 6% specifically were labelled as intellectually disabled.

Patel (2009) has postulated that disabilities predominantly exist below 15 years of age. The implications of this information for research in communication disorders will be very significant. He has indicated that the expanded data of language development in typical children and Children with Intellectual disability will expand the scope of research. It is further felt that the data will help us to verify the data veracity across and linguistic and cultural groups.

Western Studies

Gammon (2009) studied the phonology in Down syndrome with respect to the development pattern and intervention strategies. The first section of the study provides an overview of factors believed to influence phonological development in Down syndrome. The second section describes four aspects of Down syndrome phonology. Children with Down syndrome are slow to acquire the phonological system of their mother tongue. In spite of normal or near normal prelinguistic development, these children are delayed in the use of meaningful speech.

Jarrold, Thorne and Stephens (2009) studied the relationship among verbal short-term memory, phonological awareness and new word learning evidence from typical development and Down syndrome. The study examined the correlates of new word learning in a sample of 64 typically developing children between 5 and 8 years of age and a group of 22 teenagers and young adults with Down syndrome. results showed a relationship between verbal short-term memory measures and typically developing individuals ability to learn the phonological form of novel words but not 14 their ability to learn the physical referent of new words. Similarly, individuals with Down syndrome showed impaired verbal short-term memory and impaired form but not referent learning. Together, these findings specify the circumstances in which an accurate phonological representation within short-term memory is required for new word learning.

Wise, Seucik, Romski and Morris (2010) examined the relationship between phonological processing skills, word and nonword identification performance in children with mild intellectual disabilities. Word and nonword identification skills were examined in a sample of 80 elementary school age students with mild intellectual disabilities and mixed etiologies who were described as struggling to learn and read by their teachers. Hierarchical regression analyses indicated that, after controlling for chronological age and vocabulary knowledge, phonological processing accounted for a large and significant amount of unique

variance of both word and nonword identification. In addition, the pattern of results found in this study is similar to that obtained with typically developing learners. As with typically developing children, measures of phonological awareness were significantly correlated with measures of both reading achievement and vocabulary knowledge.

INDIAN STUDIES

Subba Rao (1995) provided a detailed language data on intellectual disability by examining language characteristics among Kannada-speaking children with intellectual disability (CWID). The study revealed that along with the overall delay in language development there were differences among the Mental Age (MA) matched in typically developing children and children with intellectual disability. These differences were most easily noticeable in syntactic aspects, as compared to phonological or semantic aspects. In addition, within group comparison shows that normal subjects of 4-5 years group did not differ significantly from 5-6 years group. CWID with higher MA (5-6 years) did perform significantly better than CWID with lower MA (4-5 years). The study reveals that CWID demonstrated less use of spontaneous sentences, predominant single word elliptical responses, higher no responses and the need for larger number of questions to elicit responses. Attempts at telling a story or narrating incident were very restricted in CWID reflecting their inability to use certain aspects of language, such as, connecting words. Instances of CWID children not completing a sentence were observed frequently, probably reflecting the difficulties in recall of words. In phonology, both the normal and CWID groups showed the presence of all the phonemes of Kannada in their samples. This indicates that the phonological acquisition is complete in 4-6 years normal children and MA matched CWID. Syntactic analysis presented a varied picture for both normal and CWID. On the whole, MA matched CWID did poorly than normal subjects. Overall delay in development of syntax was clearly seen.

John and Kumaraswamy (2014) aimed to understand the semantic intention and relation in Malayalam speaking children with Intellectual disability and normal children, with mental age of 4-8 years; reported that most of the semantic intention and relation were reduced in intellectually disabled children when compared to normal children.

Renji, Shetty and Gupta (2015) reported that the participle construction in children with ID of mental age 4-6 years and age matched typical children and reveals that there is a general increase in the usage of participle construction with increase in the mental age of the children.

Thomas, Gupta and Kumaraswamy (2016) studied the acquisition pattern of morpho-phonemic structures in the children with ID and Malayalam speaking typical children of mental age 4-6 years; where the acquisition of morphophonemic structures increases with the age.

Methodology

Aim and Objective

The study aims at profiling language in children with intellectual disability speaking Kannada (mental age 4 to 6 years). Analysing the data at levels of language functioning – Predicates as compared to mental age matched typical children.

Participants with Inclusive and Exclusive Criteria

Participants included 30 typical children (TD) in the age range of 4 to 6 years and 30 Children with Intellectual disability (CWID) (Mental age 4 to 6 years).

Typical children establishing profiles of TD was found necessary because of the need for comparison with CWID. Currently extensive developmental data in typical children speaking Kannada is not available. Moreover, establishment of norms based on free conversational samples is rare. Hence, a preliminary performance description of normal children in the age range of 4 to 6 years was considered essential.

All the children were suggested by teachers who identified the best suited for the study. Children with history of any speech and /or language deficits, any reading and /or writing problems, any history /complaint of acquired hearing loss, complaints of cognitive deficits such as poor memory, attention deficits, organizational and /or sequencing issues, any transfer from more than one school, any shift in the medium of instruction and any academic failures were excluded from the study. No formal language testing was administered due to lack of such tests in Kannada language. Consent was obtained from the parents of children before data collection

Materials Used

Following the guidelines of LARSP (Crystal et.al., 1976 and 1989) and in subsequent Kannada language adaptation (Subbarao, 1995) on sample collection, a set of toys and pictures were selected. Toys and pictures used for sample collection are as shown below.

Toys and play materials– House building set, Toy, jeep, Ball, Toy Utensils, Coins, Travel bag set, Paper-Pencil

List of Pictures – City Road, traffic, Village, life-1 City life, Village Life

Topics for elicited work at school, teachers, response from subjects, Games played with friends, Cinema, Television program, Favourite music, Favourite clothes, Family member.

Procedure

This scan includes seven types of conditional clauses: simple, aspectual, complex, negative, topic, modal, quotative and concessive. Again, the presence or absence of these elements is noted in the transcription sample. Simple conditional: Conditional or if clauses are formed in Kannada by the addition of /-are/ to the verb stem.

Examples:

/avr bandre, avrjote ho: gti:ni/ If he comes, I will go with him

/na: n ke: lidre, ni:n helbe:ku/ You must answer if I ask (you)

Aspectual: Here the conditional marker/-are/ is carried by the aspect marker,

Examples:

/ni: v mugis: ddre nang kodi/ If you have finished(it)

you have-finished tome give then give (it) to me

/avn bandbitre ni: n ho: g be: da/ If it turns out that he comes if you go He comes, you dont go

Complex Conditional:

Example:

/ni: n mane: g bandidre/ If you had come home(earlier)

Negative Conditional:

Example:

/ma:dde: iddre/ if (someone) doesn't do

/ma:dde:ho:dre/ if (someone) doesn't do

/ma:dta: ilde iddre/ if (someone) is not doing (something)

Topic/Focus:

Example:

/Sinma andrenanghuccu/ I'm crazy about movies.

/ho: g ba: rdandre ho: g ba: rdu/ If I say you shouldn't go, you shouldn't go

Modal:

Example:

/avr barbe: ka:dre na: n barolla/ If he must come, I won't come

/avrig be: ka: dre na:n kodti:ni/ If he needs (them) I will give (them)

Quotative - Concessive:

Example:

/nimg be: kandru: avn kodolla/ Even if you need it, he won't give it.

Analysis

Samples were a combination of conversations with the children and interactive sessions, using toys and pictures. Free conversation was encouraged throughout the 30 minutes sessions with each child. The setting was within the familiar environment of the school. The researcher interacted with children before and to become familiar with each other. The first half of the session recording focused on free conversation, while the latter half involved discussions regarding the toys and pictures. The session was recorded using Sony video recorder (Model DCR-3R21E). The Recorder was placed at a distance of three foot from the setting. A quiet room of the special school /school was used for recording. An additional note was taken to indicate accuracy of children 's response to stimuli for later use in transcription. Thus, the obtained sample was transcribed and analysed.

The overall guideline provided by LARSP (Crystal et.al., 1976 and 1989) was used for the transcription of the sample and analysis of response patterns. Suggestions and guidelines

provided by an earlier study of language analysis in children with Intellectual disability speaking Kannada using LARSP (Subbarao, 1995) were adapted.

Statistical Analysis

T' test was used to compare the means of two groups. Z test was used to determine whether two population means are different when the variances are known and the sample size is large. Man Whitney test was used to compare the differences. ANOVA followed by post hoc analysis was done using Bonferroni test. The results are expected to strengthen linguistic profiling of Kannada speaking children with the intellectual disability. Such profiling is expected to increase our understanding of disordered language in this group and also help in planning age-appropriate remediation.

Results and Discussions

Language delays and disorders amongst children have increasingly attracted attention of practicing Speech Language Pathologists in India. One group has consistently demanded attention is Children with Intellectual Disability (CWID). Language behavior of these children has become an important area of research particularly in the Indian context. There are reports of differences between mental age (MA) matched typical children (TD) and children with Intellectual disability (CWID). In fact, it is recognized that the extent of deviance is underestimated (Kiernan, 1985; Subbarao, 1995). The results of the present study also support these views. Although, there is an overall delay in acquiring language, there are differences among the MA matched TD and CWID children. These differences are most noticeable in syntactic aspects as compared to semantic aspects. This assertion further strengthens similar conclusions of Subbarao (1995).

As described in methodology section, all TD and CWID interacted during play to obtain a natural conversational language sample. The transcription of the language samples was subjected to detailed analysis. Initially quantitative analysis was done, followed by analysis of qualitative aspects.

Quantitative Analysis

The transcription of language sample was analyzed for the stimulus type and response categories. All the sentences were counted for Therapist (T) and Participants (P). The total numbers of the sentences were counted which yielded three quantitative measures like Total

number of sentences, mean number of sentences per time and Mean sentence length; the present measures were compared for both groups of TD and CWID. The group mean, standard deviation was calculated and significance between the means were calculated using T'test for the unmatched pairs.

Table 1.1- Shows the presence of Conditional clauses in typical children and children with intellectual disability with statistical evidence.

	N	Typical Children	%	Children with intellectual disability	%	Testing proportions-z value	P value	Significance (at 0.005 level)
		No. present		No. present				
Simple conditional	30	4	13	0	0	2.07	.019	HS
Aspectual	30	0	0	0	0	0	0	NS
Complex conditional	30	0	0	0	0	0	0	NS
Negative conditional	30	3	10	1	3	1.04	.150	NS
Topic/focus	30	20	66	5	16	3.93	.000	HS
Aspectual	30	1	3	0	0	1.01	.157	NS
Quotative-concessive	30	13	43	0	0	4.07	.000	HS

NS-No Significance, HS-Highly Significant

Simple conditional or if clauses are formed in Kannada by adding /-are/to the verb stem. Such use appears to be difficult for 4- to 6-year-old children speaking 93 Kannada. Only 13% of children used Quotative -Concessive. Topic/focus types (eg: /bat andre nange ishta/ (I like bat) appear to be most used (66%). Followed by quotative concessive (43%) type (eg: /nange bekandru amma kodalla/ (even if I need it mother won't give). Other types are not seen in the sample.

CWID group used none of the conditional clauses, as can be expected. Topic/focus is seen in 16% of the children. Upon comparison of both the groups it can be concluded that usage of Topic/Focus and Quotative-concessive clauses were used more by the TD group. It can also be seen that the TD group showed better performance in the usage of conditional clauses than that of CWID group. However, ambiguity is noticed in the usage of clauses by both groups. Subbarao (1995) examined 4-to-5-year TD children reported the use of aspectual /re/and simple conditional /are/ most frequently. 5- to 6-year-old children added modal /bekadre/. However, only 50% of the children showed/used some of the features but not frequently. The present study almost agrees with Subbarao (1995), and differs only in the extent. One of the reasons could be that topics of conversation during data collection could have been different between the studies. In a previous study, Prema (1979) says that coordinate sentences rules are still in the stage of acquisition in 5- to 6-year-old children in Kannada. Uma (1991) has also said that coordinated sentences were difficult for typical Kannada speaking children in the age of 4 to 6 years. Overall CWID statistically differ for topic and quotative conditional clauses. In other features TD and CWID groups do not differ.

Discussion

Studies from many diverse disciplines show that as language is a complex structure, its use involves many diverse interacting psychological operations (Caplan, 1992). A majority of children acquire this complex system of language during their early years. It is generally accepted that interactionist approaches propagated in the late 70‘s (Bloom and Lahey, 1978; Carrow-Woolfolk and Lynch, 1982) explain language development better than any single theory. This integrated view point suggests that both maturation and behaviour of society simultaneously influence and determine linguistics and communicative behaviour.

In light of this approach, studying children for describing their linguistic communication in naturally occurring day to day interactions becomes important. It is well accepted that understanding of language and communicative development is an underlying force to enable effective language intervention in children with disability. One of the largest groups in India that require attention is children with Intellectual disability (CWID). The present study focuses on oral expression of the children and analysing the resulting language output. Studies of language development have made some headway particularly in Kannada (Karanth, 1990; Subbarao, 1995 and Rohila, 2015).

Summary and Conclusion

The present study is an extension of previous studies in language profiling of Kannada speaking children with intellectual disabilities (CWID). Most notably, Subbarao (1995) had obtained natural conversational samples of 4 to 6 years mental aged (MA) children with intellectual disability (CWID) and 4 to 6 years matched typical children (TD). The audio sample obtained thus was transcribed and subjected to analysis based on the overall general guidelines provided by LARSP (Crystal et. al, 1976 and 1989).

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