

Specific Language Impairment: Development of Morphosyntax in Kannada

Prasitha P¹ and K Prema²

* Department, Institute Name

** Department, Institute Name, if any

¹Corresponding author. Associate Professor in Speech Language Pathology. Department of Audiology and Speech Language Pathology, SRM Institute of Science and Technology

²Professor (Retd) in Speech Language Sciences, All India Institute of Speech and Hearing, Manasagangothri, Mysore

DOI: 10.29322/IJSRP.11.04.2021.p11232

<http://dx.doi.org/10.29322/IJSRP.11.04.2021.p11232>

Abstract- Language is a complex process and its acquisition is hierarchical in nature. There is a critical age for the acquisition of each process. Some children with language impairment show a delay in the acquisition of these processes. There are many studies supporting the delay in children with language impairment. The purpose of the present study is to investigate the development of morphosyntax (conjunction, negation, case marker, tense and person-noun- gender marker) in children with specific language impairment. The participants were five typically developing children (Group I) and five children with specific language impairment (Group II) in the age range of 2-5 years with mother tongue as Kannada. The selection criteria for group I was based on a WHO checklist for screening disability and for group II was on screening for language using Computerized Linguistic Protocol (CLiP, Anitha, 2003) and Leonard's criteria (Leonard, 1993). Both comprehension and expression of the selected morphosyntactic features were investigated. Three tasks were selected to elicit speech sample – Description of pictures, Mother-child Interaction and a structured play. The development of these morphosyntactic features are discussed in light of the existing literature.

Index Terms- Specific language impairment, Language acquisition, Morphosyntax (conjunction, negation, case marker, person-noun-gender marker, tense).

I. INTRODUCTION

Language is an essential element for every individual to convey thoughts, ideas in day-to-day communication. If it is imperfect, it affects communication which is commonly seen in developmental language disorders. Specific Language Impairment (SLI) is a condition seen in children with delayed onset of speech and language with no obvious/attributionable causes and that generally shows an impairment in communication. A few Western studies report that SLI is one of the most common types of developmental language disorders, affecting approximately 7% of Kindergarten children, more likely to be seen in males than females (Tomblin, Records, Buckwatter, Zhang, Smith and O'Brien, 1997).

A traditional definition of SLI is exclusionary in nature and it is defined as a form of developmental language disorder occurring in the absence of mental retardation, sensory deficits, frank neurological damage, serious emotional problems and environmental deprivation (Leonard, 1998). Children with SLI appear to be developing normally in all aspects except for their receptive and/or expressive language skills. They also demonstrate normal intelligence, normal hearing, no evidence of emotional problem and are free from neurological disorder such as cerebral palsy, seizure disorders. Children with SLI are significantly delayed in acquiring multiple aspects of language. Deficits including grammatical morphology, phonology, syntax, lexicon and pragmatic skills are observed in children with SLI (Joanisse and Seidenberg, 2003). Children with SLI exhibit other types of deficits also that extend beyond language including problem with working memory (Johnston and Weismer, 1983) and speech perception (Tallal and Piercy, 1974).

There are five components of language which develops in a hierarchy i.e., - phonology, semantics, syntax, morphology and pragmatics. In children with SLI, the development of each of these components are delayed, among which, morphosyntax is the one which is said to be largely impaired.

Morphosyntax

Grammatical morphology pertains to the closed-class morphemes of the language, both the morphemes seen in inflectional morphology (e.g.: "plays", "played") and derivational morphology (e.g.: "fool", "foolish"), and function words such as articles and auxiliary verbs. Grammatical morphology shares the characteristic of representing a sort of ivy growing up between and upon nouns and verbs. The division between syntactic structure and grammatical morphology is somewhat artificial. For example, auxiliary verbs are needed for framing wh- questions using the passive voice. In turn, the form that pronouns take is dictated by their structural position. Pronouns serving as the object of the verb assume the accusative case, for example, (*Mary saw him* and not *Mary saw he*).

This publication is licensed under Creative Commons Attribution CC BY.

<http://dx.doi.org/10.29322/IJSRP.11.04.2021.p11232>

www.ijsrp.org

These interrelationships make it clear that problems with grammatical morphology will have ramifications for syntactic structure and vice-versa. Morphosyntax is defined as the study of grammatical categories or linguistic units that have both morphological and syntactic properties.

Conjunctions

Conjunctions are class of connectors that indicate the relationship between joined parts of an utterance. Conjunctions can occur either in between noun phrase (NP) or verb phrase (VP). In NP conjunction, the coordinating members occupy the same level of structure i.e., subject in the underlying sentences. In Kannada, verbal participle constructions are also co-ordinations of VP's. However, they vary in terms of their syntactic forms.

NP conjunctions in Kannada are

- a) Both /u:/ and /mattu/ occurring together
- b) Only /mattu/ occurring in a sentence
- c) Only /u:/ occurring in a sentence
- d) Only a pause occurring where the conjunctive particle is not overtly present. Other coordinators in Kannada are – /athava/, /a:dare/, ildidre/.

Bloom (1970) reported that the earliest forms of conjunction seem to occur merely by juxtaposing the words together around 2 years. This seems to be the primal base upon which conjunction is built. Sreedevi (1976) reported that coordinate constructions were not present in the spontaneous speech sample of 2 plus year old Kannada speaking children.

Negation

Negative is considered as a formant which combines with parts of the sentence to constitute negation in sentence (Klima and Bellugi, 1966). If a morpheme negative is present in the deep structure of a sentence then by a series of transformations the sentence will be realized as a negative sentence. Some of the negative markers in English are „not’ and a small set of negative words including the negative pronouns ‘nobody’ and ‘nothing’, the negative determiner ‘no’, the negative adverbs ‘never and nowhere’.

Bloom (1970) distinguished three aspects of negation in German and English languages.

- 1) Non existence refers to the case for which the object referred to no longer exists. Ex: „No more“.
- 2) Rejection, where the child refuses some aspect of the environment. Ex: „No dirty shoes“.
- 3) Denial, in which a child denies that something asserted. Wode (1977) proposed 4 early stages for the acquisition of negation.

Stage 1: One word negation – „no“

Stage 2: Two or more word negation – „no more“

Stage 3: Anaphoric negation – ‘no, outside, no, I want to go outside’

Nonanaphoric negation – ‘no close I can’t close the box’

Stage 4: Intrasentential negation – ‘I can’t open it’.

Sreedevi (1976) while studying the aspects of acquisition of Kannada by 2+ year old children found that negative transformations employing mere addition of „ll“, „ill“ and „be:da“ are acquired earlier than other types of negative morphemes transformations. Prema (1979) reported that the structure of the negative sentences in 5 – 6 year old Kannada speaking children is similar to the adult form. Negative particles like /illa/, /alla/, /beda/ are used in adult form, but bound forms are very few. Roopa (1980) reported that the negative marker /nahi/ in Hindi in the preverbal position of a sentence is indicative of negation in 4-5 year old Hindi speaking children, but word negations were not found.

Case marker

The basis of case grammar is meaning. The semantic aspect of language assists us in „making sense“ of sentences. The meanings of words and how words are related to each other affects our understanding of sentences. Some words, because of their underlying meanings, cannot go together inspite of the grammatical roles they fill.

Ex: The girl washed the car. The word tree cannot be substituted here though both words are nouns. Specifically, the girl can execute the verb, the tree cannot.

The categorical unit, the noun phrase in this semantic relationship, also carries the potential for modifiers as well as an optional preposition. In the example, the noun phrases (*the girl, the car*) could have carried modifiers (*tall, young, and old, blue, etc*). According to Fillmore (1968), there are 7 types of case markers

- 1) Agentive, where the initiator of the action is indicated by the verb. Ex: *Mary* baked a cake.
- 2) Dative in which the animate is affected by the action or state indicated by the verb. Ex: Bill gave *Mary* a present.
- 3) Experiencer, the animate who experiences an event or internal state. Ex: *Mary* felt the cool breeze.

This publication is licensed under Creative Commons Attribution CC BY.

<http://dx.doi.org/10.29322/IJSRP.11.04.2021.p11232>

www.ijsrp.org

- 4) Facitive, where an object or being that results from action is indicated by the verb. Ex: Bill assembled the *toy*.
- 5) Instrumental, where the object is used in the action indicated by the verb. Ex: Bill tightened the bolt with a *wrench*.
- 6) Locative in which the location of the action or state indicated by the verb. Ex: Mary's car is in the *garage*.
- 7) Objective, where the object or being affected by the action is indicated by the verb. Ex: Bill painted the *house*.

In Kannada, there are 6 types of case markers as described by Nayak (1967).

- 1) Accusative: these are forms with zero morph that are identical with nominative form (a noun stem occurs as a subject lacking case suffix). /-anna/ is used to depict the accusative form of case marker. Ex: marav annu kadidenu ("I cut the tree")
- 2) Instrumental: /-inda/, /-linda/, /-agenda/ are used to denote the instrumental form. Ex: "mane yinda" (from the house), "kalin inda" (from the legs).
- 3) Dative: allomorph /-kke/ /-ke/ occurs after neuter nouns with final /a/, /-ge/ occurs elsewhere. Ex: "mara kke"(to the tree), "tayi ge"(to the mother).
- 4) Genitive: -- a is the genitive morpheme considered here. The /- a/ occurs only after stem vowels (the inherent final vowel of a stem, which is part of the root and not merely added for a citation form). Ex: "hudugan a" (of the boy, boy's), "hudugi ya" (of the girl, girl's).
- 5) Locative: /-age/, /-alli/ is used after neuter nouns. Ex: "mane yalli" or "manage" (at/in the house), "Kaveri yalli" (at Kaveri).

PNG markers

Pronouns are a group of forms (eg: *he, she, they*) that can replace nouns or entire noun phrases. The substitution process is called as pronominalization. Through this process pronouns become equivalent to the words they replace. In most cases, pronoun usage is based on anaphoric reference, in which pronoun refers to a person or thing. For example, speakers generally do not use the personal pronoun „*he*“ until they have mentioned who it represents, as in *John ran away because he was scared*.

Personal pronouns, the most complicated forms, are used to replace nouns referring to persons. Pronouns can take various forms, depending on the context. Personal pronouns vary depending on the number, person, gender and case. Reflexive pronouns are forms that “reflect” back on the preceding subject of a sentence, as in *When I looked in the water, I saw myself*. Demonstrative pronouns include the demonstrative forms, *this, that, these* and *those*, which replace nouns rather than modifying them. Ex: *That* is mine. Indefinite pronouns are compound words composed of *any, every, no,* and *some* combined with *one, thing, place or body*. They are named indefinite for the fact that they do not have a specific referent, as in *Bring me something to drink*.

The pronoun system is complex and confusing. Therefore, it is not surprising that pronouns develop slowly and variably in preschoolers. The earliest forms which occur in stage I are *this, that, it*. Most personal pronouns emerge after stage II. Subjective pronouns (*I, you, he, she, they*) tend to be mastered earlier. Next, objective pronouns (*me, him, her, them*) are mastered. The possessive pronouns (*his, her, theirs*) are acquired later. The first person forms (*my, mine*), are acquired much earlier. The last pronouns to be achieved are the reflexive pronouns (*myself, himself, herself, themselves*) are acquired much later after stage V.

As preschoolers attempt to use pronouns some common substitutions occur. Most commonly, preschoolers substitute the objective for the subjective case (eg: *me/I, him/he, her/she, them/they*). With the exception of reflexive pronouns, most pronouns are mastered by approximately 5 years of age.

Table1: English personal pronoun system

Person	Subjective	Objective	Possessive
First	I, we	me, us	Mine, ours
Second	You	You	Yours
Third	He, she, they, it	Him, her, them, it	His, hers, its, theirs

Children with SLI are slow to develop certain pronominal forms. Reports of difficulties with accusative pronouns (e.g.: *Don't push me; Mommy kissed him*) are scarce. Schelleter (1990) used a measure that assigned developmental scores to different indefinite and personal pronouns. The pronouns used by 9 year old children with SLI were dominated by earlier developing forms, in contrast to those used by seven year old controls. The pronouns used by the children with SLI more closely resembled the pronouns used by five year olds. Later developing forms such as *anything, everybody* and *herself* were used relatively infrequently if at all.

Nominative case pronouns (e.g.: I, he, she, they) have received the greatest attention from investigators. Loeb and Leonard (1988), Leonard (1982a), Lee (1966) and Menyuk (1964) all reported instances of Accusative for nominative case pronouns (e.g.: *Him eating popcorn*) that seem higher in frequency than is reported for younger normally developing children. Loeb and Leonard (1991) compared the nominative case pronoun use of preschoolers with SLI and MLU controls, and found greater use of accusative for nominative forms by children with SLI. Moore (1995) reports that five year olds with SLI in her study made a greater number of pronominal case errors than did age controls, but not more than a group of three year olds matched according to a measure of syntactic development. In longitudinal studies done on children with SLI, Eyer and Leonard (1995) reports that there were many instances of accusative pronouns in place of nominative pronouns were noted. Early in the study, this pronoun use occurred in sentences with no verb morphology (e.g.: *Me put that up; Me like doughnut place*). By the end of her study, this pronoun pattern was still evident even though verb morphology was more extensive.

Moore (1995) reported that case errors involving the third-person feminine pronoun (e.g.: *her sleeping*) were common than those involving the masculine (e.g.: *him going*). This finding was explored in greater depth by Ogiela (1995). Of particular interest was the pattern of substitution error as a function of the degree to which the nominative, accusative and genitive forms of the same person and gender shared phonetic material. She also reported that these children were more likely to produce „*her*’ in contexts requiring „*she*” than to produce „*him*’ or „*he*’. Also, in occasional instances a nominative pronoun replaced an accusative form.

Tenses

Tense is used to show the relation between the action or state described by the verb and the time, which is reflected in the form of the verb. There are two basic tenses in English; the present tense and the past tense. The present is like the base form although the third person singular adds /-s/. Regular verbs add /-ed/ or /-d/ to show the past tense, while irregular verbs change in many different ways, or not at all in some cases.

Regular past Tense inflections

The term regular suggests that it always takes the same basic form, -ed. However, there are, again, three phonologically based allomorphs, /-d/ (leaned), /-t/ (worked) and /-id/ (painted), which depend on whether the preceding consonant is voiced, voiceless or as/t/ or /d/ in English language. The primary meaning of past tense is “earlierness” (Brown, 1973). In this sense, past tense simply refers to an event that occurred prior to the time of the utterance. The earliest past tense verbs were irregular forms referring to common daily activities – *ate, sat, ran* and so forth. Once the regular inflection appears, it generalizes to the irregularize past tense words. Eventually, the irregular and regular forms are mastered.

Third person present tense singular inflection

In English, the regular third person present tense singular verb inflection, /-s/, and its irregular counterpart are achieved earlier. Here, the regular inflections includes three allomorphs, /s/ (eg: *She hops*), /-z/ (eg: *He runs*) and /iIz/ (eg: *She washes*), which follow the same phonological patterns as the possessive and plural inflections. The irregular forms are limited to verbs such as *do/does* and *have/has*. These verb forms are required by English grammar when the subject of the sentence is in the third person. Most sentences in which the inflections are required include the subject and verb in its present tense. Ex: *He runs fast* and *He run fast*; although the latter sounds strange, it carries no less information. The regular inflection is mastered earlier than the irregular forms. Common observation is that the regular inflection is overgeneralized with several other regular versus irregular distinctions. As a result, preschoolers may be heard to produce such variations as, *He sure doos good, huh?*

In Kannada, the suffix which forms the present-future stem has two allomorphs – *utt-*, *-utta/-t-*, *-ta-*. This suffix takes personal suffixes. Usually the future or the habitual present are denoted by this suffix. Sometimes it denotes momentary present also.

bar- “to come”: *barutta-/batta* – “coming” *baruttane/battane* “he comes, he will come” *baruttale/battale* “she comes, she will come”

For past tense, the personal suffix *-t*, *-d*, *-i* are principal allomorphs. Generally, *-i* occurs in bare stems as well as before the singular neuter suffix. The past tense also forms bare stems, past participles and contingent stems.

Mad (u) “to do”: *madidenu/madde* “I did”

For future tense, the suffix used is /-uv/, which is added to the verb base.

Participles are also formed with this suffix. *bil-* “to fall”: *biluvenu* “I will fall”

kel- “to listen”: *keluvenu* “I will listen”.

Tense marking in children with SLI

Rice et al (1995) designed to test the predictions of an extended period of optional infinitives, OI (the first stage of acquisition of infinitives, the only verb forms) for English speaking children with SLI. These predictions focussed on optional tense marking and two related properties: knowledge of the contexts where finiteness is to be expressed in sentences and AGR (verb agreement marking) marking on finite forms of verbs. The morphemes investigated were ‘-s, -ed, -be and do’ forms. The main findings were in the following: For each of the morphemes, as predicted, children in the SLI group showed a lower level of use in obligatory contexts than children in either of the two control groups. Although their age peers used these morphemes in 90 % or more of the required contexts, children with SLI used them in only 25 % - 48 % of the required contexts. Younger, non affected children at equivalent mean lengths of utterance had percentage values in between the SLI and age-matched groups, 45%-70%. Eventhough

This publication is licensed under Creative Commons Attribution CC BY.

children in the SLI group had a high probability of omitting tense marking, possible errors of use were very rare and when a finite form was used, it was likely to the verb form specified by the number and person features on the subject. Tense marking is an optional, underspecified area of the grammar for affected children, an underspecification of the same sort as apparent for younger normally developing children but markedly extended in the older children with SLI.

Past Tense pattern in children with SLI

Leonard, Bortolini, Caselli, McGregor and Sabbadini (1992), Leonard, Eyer, Bedore, and Grela (1997) and Oetting and Horohov (1997) reported that children with SLI did not differ from MLU controls in the use of irregular past forms even though they showed lower percentages of use for the regular past *-ed*. Johnston, Miller, Tallal and Curtiss (1994) also found that children with SLI were similar to younger controls in their use of irregular past; however, they also found no differences for regular past. The groups were matched on the basis of scores on an expressive language test that focused on grammatical morphology as well as syntactic structure.

SLI children often show markedly different linguistic characteristics from one another. However, many SLI children are characterized by varying degrees of morphological & grammatical impairments in the comprehension & expression of language (Bishop et al, 1994). Within this group potentially important differences exist. For example, SLI child may present with or without severe articulatory or phonological impairment, or without an impairment in the comprehension of language. More significantly, many of the children who present with this general pattern of language impairment is more at the area of morphosyntax which is mainly seen at 3-4 years of age. Earlier studies had suggested that during the period of development, lexical acquisition in children with SLI was slow. Measures obtained from these children one year later indicated that they still exhibited significant language. At this point, however, the acquisition of morphosyntax appeared to be their obstacle.

There are many theories proposed to explain the above findings in children with SLI

- a) **Surface Hypothesis:** Leonard in his surface hypothesis (Leonard, 1988, 1989) claimed that individuals with SLI show difficulties in grammatical morphology that are directly related to the phonological salience of the particular morpheme or morphemes in question.
- b) **Missing features:** in the missing features hypothesis, Gopnik (1990a, 1990b) claimed that SLI grammar is unusual in that it is missing the notion of obligatory marking of grammatical features.
- c) **Impaired morphological rule:** Gopnik's more recent hypothesis (Gopnik, 1994), individuals with SLI will not recognize the inflectional markings which are obligatory and they will have problems with producing the correctly inflected forms with nonsense words.

The review of literature suggests that the children with SLI show a deficit in morphosyntax and this has been widely investigated in non-Indian languages. However, similar studies in Indian languages are sparse. As language sample analysis has long been held as a valid indicator of expressive language performance in children, in order to examine the morphosyntactic characteristics of children with SLI, the SALT (Systematic Analysis of Language Transcripts developed at Language Analysis Lab, University of Wisconsin-Madison, 2006), a computer based program designed to analyze and interpret language samples from one or more speakers during a communicative interaction was employed in the present study.

II. METHOD

The objective is to study the development of morphosyntactic patterns (in both comprehension and expression) in children with Specific Language Impairment in Kannada.

Participants

Two groups of participants – Control group (Group I) and Experimental group (group II) in the age range of 2-5 years were involved in the study. Each group consisted of 5 participants with their mother tongue as Kannada. Typically developing children were considered under group I and children with Specific Language Impairment under group II.

Table 2: Participant details

Typically developing group (Group I)	Clinical group (Group II)
Typically developing children	Children with Specific Language Impairment

5 participants	5 participants
2-5 yrs of age	2-5 yrs of age
Children will be selected from nursery, pre-primary schools, baby sitting centers, play house.	Participants will be chosen from the Department of Clinical Services at the All India Institute of Speech and Hearing, Mysore
Kannada	Kannada
10 point disability checklist (WHO) will be used for screening (appendix 1)	Criteria for selection of participants are given in appendix 2.

Procedure

Expression

Speech and Language samples of the participants were audio recorded using a digital recorder. The samples were collected individually for thirty minutes duration (10 minutes for each task)¹. The recording was done in therapy rooms of the All India Institute of Speech and Hearing, Mysore, children's home and in school set up. There were three tasks to elicit the speech sample.

- 1) *Description of pictures*: The stimulus used to elicit speech and language was a series of pictures taken from UNICEF manual (pictures were chosen in such a way that all the five aspects – tenses, case markers, PNG markers, conjunctions and negation could be elicited). The picture was shown to the child and he/she was asked to describe the picture shown. Cues were given by the examiner or the mother for initiation of utterances. The samples were audio recorded with the help of a digital recorder.
- 2) *Free play/ a structured play*: A structured play situation was created e.g.: a small birthday party event or a classroom was created and the child was expected to enact or describe about the situation. Cues were given by the examiner or the mother for initiation of utterances. This sample was audio recorded with the help of a digital recorder.

1 The duration of the sample was increased if the verbal output was found inadequate.

- 3) *Interaction of mother and child:* A common situation of mother feeding snacks or the food to the child was sampled. The general conversation between the mother and the child about the food or the snacks was audio recorded. A digital recorder was used for audio recording the sample

Comprehension

Pictures of the five morphosyntax aspects - tenses, case markers, PNG markers, conjunctions and negation were taken from the UNICEF „With a little bit of help, Early language training kit” to check for comprehension. 10 pictures in each morphosyntactic aspect were selected as stimuli. The children were asked to point to the correct picture when he/she was asked for. A total of 50 pictures were used to check the comprehension of these specific morphosyntactic aspects.

Scoring for comprehension ability

A correct response was given a score of „one” and incorrect response a score of „zero”. 70 % criterion was used to consider that a particular morphosyntactic aspect is acquired i.e., a particular aspect of morphosyntax was considered as acquired only when 70 % correct responses are obtained. Specific errors exhibited by the child were noted.

Analysis

The speech samples were transcribed using broad International Phonetic Alphabet and fed into SALT software for analysis. The data obtained was analyzed.

- 1) The speech samples of all children in each group were combined. The whole data was classified into different morphosyntax types – tenses, negation, conjunction, PNG markers and case markers.
- 2) Developmental order among the aspects five aspects of morphosyntax are chosen, in the age range of 2-3, 3-4, 4-5 are discussed in both typically developing group and clinical group.
- 3) The deviant utterances present in children with SLI (clinical group) are described and discussed.

III. RESULTS AND DISCUSSION

Ten children – five typically developing children and five children with specific language impairment in the age range of 2-5 years were studied. The speech samples (description of pictures, narration and mother child interaction) were recorded from all the ten children. The samples were analyzed for five aspects of morphosyntax (tenses, negation, conjunction, PNG markers and case markers) and also with regard to the order of acquisition of each of the above five aspects.

Results of the study are presented under the following categories:

- I. Development of morphosyntax in typically developing children
- II. Development of morphosyntax in children with SLI
- III. Deviant utterances seen in children with SLI.

I. Development of morphosyntax in typically developing children

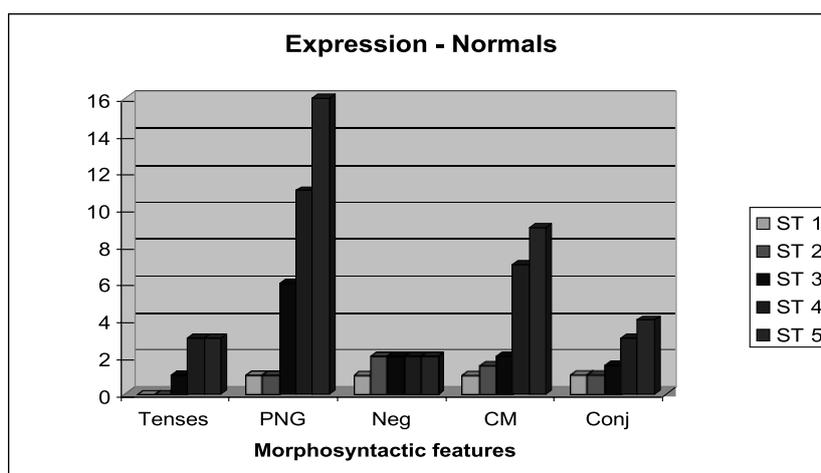


Figure 1: Mean scores for expression in typically developing children

In general, in typically developing children, it can be seen that the features are acquired to a certain extent at 4-5 years of age and by 5 years the child is able to use the linguistic markers and forms correctly though the mastery of the forms and markers are not achieved by 5 years of age. It is interesting to see that the development of these features starts very early in childhood by 2 years of age. This is in consonance with Klima and Bellugi's (1966) study, where they have investigated the development of various linguistic forms and reports that most of the acquisition takes place early in childhood and the usage of various forms are seen during preschool age. From figure 1, it can be observed that there is a clear development seen from 2 to 5 years of age in all the aspects except for negation. The 2 ½ and 5 year old children used same type of negative forms such /be:da/ or /illa/. This negative form was commonly used by all children. PNG marker is the feature which is markedly acquired in all the children. The developmental order seen in typically developing children are PNG markers, Case markers, Tenses, Conjunction and Negation.

Table 3: Development of morphosyntactic feature in typically developing children

Name	Age/sex	Morphosyntactic features				
		Negation	Conjunction	Case markers	Tense	PNG Markers
Subject 1	2/F	No	No	No	No	No
Subject 2	2 ½ /F	No	No	No	No	No
Subject 3	3/F	No	No	No	No	No
Subject 4	4 ½ /F	Yes	Yes	Yes	Yes	Yes
Subject 5	5/F	Yes	Yes	Yes	Yes	Yes

To summarize, the comprehension of the morphosyntactic features are acquired first than the expression as in any other language development. In table 3, "Yes" indicates that the particular morphosyntactic feature is acquired and "No" indicates that the particular morphosyntactic feature is not acquired. It can be inferred that all the morphosyntactic features are acquired by both ST4 and ST5, which means to say that the development of linguistic forms and markers starts at 2 years and they are developed partially by 4 years of age. This again supports Klima and Belugi's (1966) study, who reports that that the development of grammatical markers takes place early in the childhood and is used by preschoolers.

II. Development of morphosyntax in children with SLI

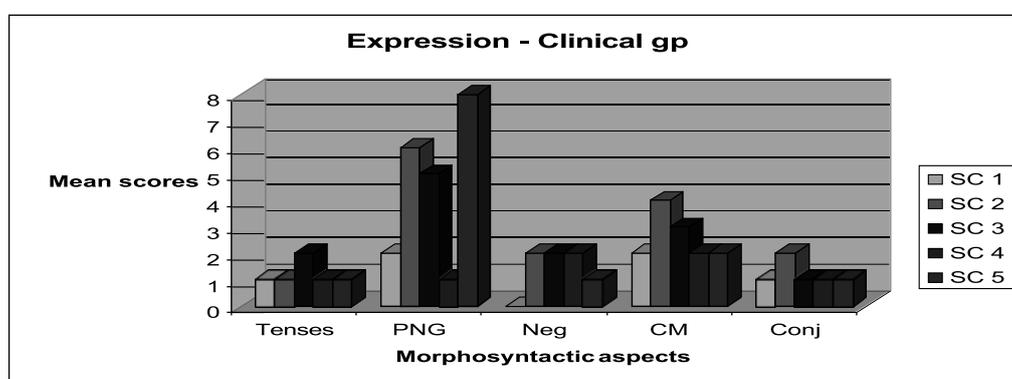


Figure 2: Mean scores for expression in children with specific language impairment

In children with SLI, it is observed that the acquisition of features is very slow when compared to typically developing children. The PNG markers were the one majorly developed in these children followed by case marker, but had lots of confusion and produced significantly fewer pronouns and in particular fewer third person singular pronouns. This supports the study done by where in they found by Rice et al (1995) that the children with SLI produced fewer pronouns and had fewer third person singular pronouns. No clear developmental order was seen in these children, this may be because of the influence of explicit speech and language treatment and exposure by clinicians and parents. No specific usage of markers and forms are seen as in typically developing children. More problems were seen in tenses as inferred from figure 2. This is because children either used present tense suffixes or there was omission of tense markers most of the times. Rice et al (1995) stated that children in the SLI group had a high probability of omitting tense marking. Tense marking is an optional, underspecified area of the grammar for affected children, an

underspecification of the same sort as apparent for younger normally developing children but markedly extended in the older children with SLI. Commonly, most of the grammatical markers or the function words are omitted. This supports the missing agreement hypothesis which states that the SLI grammar is unusual in that it is missing the notion of obligatory marking of grammatical features. These features include number, gender, animacy, mass/count, tense and aspect.

Also, the children exhibited major confusion in tense markers and gender markers which is typically seen in children with SLI. They developed dative type of case markers compared to other types and this is in consonance with the typically developing children. Even in typically developing children, dative was developed initially.

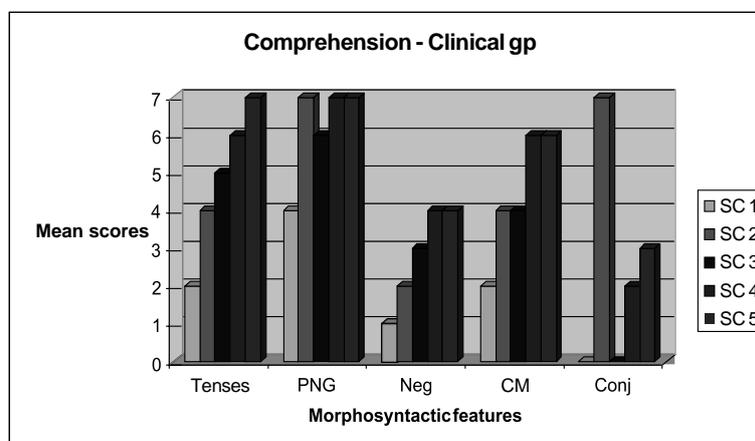


Figure 3: Mean scores for comprehension in children with specific language impairment

From figure 3, it can be inferred that there is a clear development pattern seen in case of tenses, negation and case marker from SC1 to SC5. In SC5 (4 ½ years), the tense and PNG marker are achieved according to the 70 % criterion selected for the study. In SC2 (3 ½ years), the features PNG and conjunction are acquired. It is interesting here to see that the feature conjunction is acquired in 3 ½ year old child. This may not reliable because there would have been other cues the child used to point to the correct picture which other children has not used. Tallal et al (1991) reports that that children with SLI miss out several cues present in the target word, but few of them respond with the help of certain cues which is not even perceived by the adult. This was an interesting point from her study. Even in comprehension, the children exhibited confusion in tense markers and gender markers. No specific conclusion can be made as there is no specific developmental pattern seen, although, comprehension is better than expression in all five morphosyntactic features.

Table 4: Development of morphosyntactic features in children with SLI

Name	Age/sex	Morphosyntactic features				
		Negation	Conjunction	Case markers	Tense	PNG markers
Subject 1	3/F	No	No	No	No	No
Subject 2	3 ½ /F	No	No	No	No	Yes
Subject 3	3 ½ /M	No	No	No	No	No
Subject 4	3.11/M	No	No	No	No	Yes
Subject 5	4 ½ /M	No	No	No	Yes	No

Table 4 indicates a summary of the development of morphosyntactic features in children with SLI, where “Yes” indicates that the particular feature is acquired and “No” indicates that the particular feature is not acquired. Here, the results shows that the PNG marker is acquired by SC2 and SC4, that is by 3 ½ and 3.11 year old children and tense is acquired in SC5, 4 ½ year old subject. A definite conclusion cannot be made from the study. Rice et al (1994) state that the comprehension and expression is affected in children with SLI, but comprehension is always better than expression.

III. Deviant utterances present in children with SLI

Children with SLI had certain deviant utterances when compared to typically developing children and the development order for the groups.

Table 5: Order of development of morphosyntactic features in both ST and SC groups.

Typically developing group (ST)	Clinical group (SC)
PNG markers	PNG markers
Case markers	Case markers
Negation	Negation
Conjunction	Conjunction
Tense	Tense

Table 5 indicates that, the order of development for both typically developing group (ST) and clinical group (SC) are similar, but the SC group presents with deviant utterances when compared with the ST group. This is quite interesting and it very well suggests that the developmental pattern in children with SLI is similar to the typically developing group, but their development is slower as suggested by Leonard (1989) and Rice et al (1994).

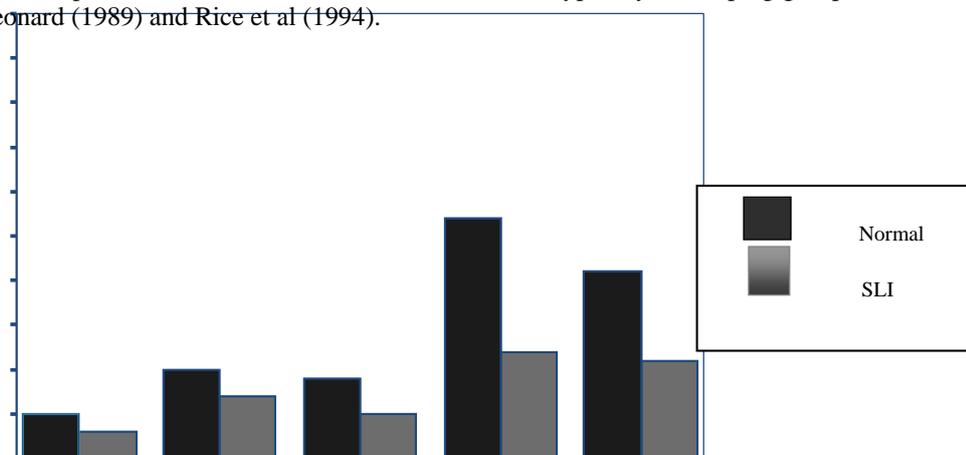


Figure 4: Mean scores of development of morphosyntax in typically developing group and clinical group

From figure 4, it can be inferred that in case of the tense feature, majorly it was the present tense which was used more than the past and future tense. They also omitted the tense marking most of the times which is typically seen in these children (Rice et al, 1995). This group exhibited lots of confusion in using the tense markers which was not seen in typically developing group. Rice et al (1995) stated that they have difficulty in using the correct tense markings and agreement marking on finite form of verbs.

In case of negation, this feature was not well established in typically developing group also. They used /illa/ and /be:da/ for negating. This is generally said to exist after 5 years of age. The negating structure used by children with SLI is on imitation, was also used meaningfully in certain context. Few children also used non-verbal response to indicate negation. In case of conjunction, this group mainly used conjunction on imitation, majorly used types were /matte/ and /amele/, /a:dare/ was not used by any children. Bloom (1970) reported that the earliest forms of conjunction seem to occur merely by juxtaposing the words together around 2 years. This seems to be the primal base upon which conjunction is built. This was absent in these children and this developed much later in their speech.

PNG markers were maximally used by these children. They picked up these markers faster during intervention, but two or three of these children exhibited a greater confusion in using the PNG markers. All children found it very difficult to acquire the number marking, none of them were using appropriate plural suffixes, this means to say that they are developed later after 5 years of age. In typically developing children also, the PNG markers were achieved earlier than the other features.

Case markers were also acquired comparatively earlier. It was interesting to observe that they used dative and locative type of case markers more than the other types. Again, two of the children omitted these case markings (/indha/, /alli/, /ge/). The sentence structure was used without any case marker which results in misinterpretation of meanings by the listener. Thus, the developmental order is different from typically developing children. All these children are in the process of acquisition of these features as they are used at times though there is a difficulty in using these markers. Their utterances are deviant when compared with typically developing children as given by Leonard (1989) and Bishop (1991).

IV. SUMMARY AND CONCLUSIONS

The following inferences were drawn from the present study of 2 – 5 year old typically developing children and children with SLI.

Typically developing group (group I)

- a. The root form of the word is acquired earlier than the acquisition of word with affixes.
- b. The children acquire the basic types of sentence patterns namely nominal and verbal at the earlier ages.
- c. Distinction between noun and verb was observed at early ages.
- d. Among the pronouns, first person singular, second person singular and third person neuter singular are acquired earlier.
- e. Single verb roots are acquired earlier than the compound verb roots.
- f. Present and past tense forms are acquired earlier than the future tense forms (present tense appears earlier than the past tense).
- g. Affixes are achieved earlier than the inflection of the verbs for number and gender. The verbs are inflected for singular first person and imperatives earlier than the verbs inflected for singular third person and plural third person. Among the gender distinctions, the neuter gender is distinguished between masculine and feminine first. Later the children distinguish between masculine and feminine genders.
- h. Gender and number markers are used occasionally.
- i. First, the expression of case relations is done without using explicit case markers.
- j. No hierarchy was observed in the emergence of explicit case markers, but use of dative and locative type of case markers was frequent.
- k. /matte/ and pause are the noun phrase conjunctions used by these children (acquired by 4-5 year old children).
- l. All the noun phrase and verb phrase conjunctions are not acquired by 2-5 year old children.
- m. /u/, /o/ and /adhere/ as noun phrase conjunctions are not used.
- n. /a:mele/ which is an adverb is used as noun phrase conjunction.
- o. The children seem to acquire many complex forms involving complex transformational steps through imitation.
- p. In general, there is a regularity and order in the acquisition of grammatical and transformational characteristics among all the children. This regularity may be broadly the same for all the children, although each child may have its own variation within the overall regular framework.
- q. Free negative markers like /alla/, /illa/, /be:da/ are found in children's speech but negative suffixes that occur with modal auxiliaries and other main verbs are not yet acquired.
- r. Comprehension of negative suffixes are not developed but when the same meaning is interpreted in simplified manner children comprehend them.
- s. All the basic interrogatives markers in yes/no and Wh – type questions are found in children's speech.

Clinical Group (group II)

- a. In clinical group (SC), Free negative markers like /illa/, /be:da/ are found in children's speech but negative suffixes that occur with modal auxiliaries and other main verbs are not acquired in children with SLI.
- b. Pause is the major type of NP conjunction used. More of imitation responses for NP conjunction /mathe/ are seen.
- c. /u/ and /o/ as noun phrase conjunctions are not used.
- d. /a:mele/ which is an adverb is not used as noun phrase conjunction, but imitation responses are seen for /a:mele/.
- e. In general, there is no specific regularity and order in the acquisition of grammatical and transformational characteristics among all the children.
- f. Present and past tense forms are acquired earlier than the future tense forms (present tense appears earlier than the past tense). Tense markers are not consistent in child's speech with person markers.
- g. Tense markings like /iddane/, /idda/ are missing in their utterances. They get confused with these tense markings and use more of present tense forms. Future tense is not developed in their speech.
- h. The expression of case relations is done without using explicit case markers (case markers are missed out).
- i. More of dative markers are used.
- j. Uses of pronominal suffixes are less and third person singular are more.

- k. The children could distinguish between masculine and feminine genders, but inconsistency are exhibited for the same. Used a feminine gender marker for masculine and vice-versa. Gender and number markers are used sometimes indicating the instability in the speech of the children.
- l. Comprehension of all these morphosyntactic aspects is better than expression.
- m. Both quantitative (SALT) and qualitative (descriptive) analysis revealed similar results in all the five morphosyntactic aspects.

To summarize, there are missing agreement markings and inconsistencies in the acquisition of morphosyntactic aspects by the clinical (SC) group. Those missing agreements were seen mainly with reference to case markers, PNG markers and tenses, whereas, these missing agreements are not seen in typically developing group (ST) group. Further, There is no specific order of regularity in the acquisition of grammatical and transformational characteristics among these children. Conjunctions and negations are not used well by children in both the groups. Simple forms of negative suffixes are used. Noun phrase conjunctions are mainly used than the other types. The missing agreement hypothesis supports the missing agreement markings seen in the SC group. However, a specific regularity and order in the acquisition of grammatical and transformational characteristics was observed among the typically developing children.

REFERENCES

- [1] Ahmed, S.T., Lombardino, L. J., & Leonard, C. M. (2001). Specific language impairment: definitions, causal mechanisms and neurobiological factors. *Journal of Medical Speech –Language Pathology*, 9, 1-15.
- [2] Aram, D., Morris, R., & Hall, N. E., (1993). Clinical and research congruence in identifying children with specific language impairment. *Journal of Speech and Hearing Research*, 36, 580-591.
- [3] Aram, D., & Nation, J. (1975). Patterns of language behaviour in children with developmental language disorders. *Journal of Speech and Hearing Research*, 8, 229-241.
- [4] Bates, E., Bretherton, I., & Synder, L. (1988). *From first words to grammar: Individual difference and dissociable mechanisms*. New York: Cambridge University Press.
- [5] Benedict, H. (1979). Early lexical development: Comprehension and Production. *Journal of Child Language*, 6, 183-200.
- [6] Bernstein, L. E., & Stark, R. E. (1985). Speech perception development in language impaired children. *Journal of Speech and Hearing Disorders*, 50, 21-30.
- [7] Bloom, L. (1970). *Language development: form and function of emerging grammars*.
- [8] Cambridge: MIT press.
- [9] Chiat, S., & Hirson, A. (1987). From conceptual intention to utterance: A study of impaired language output in a child with developmental dysphasia. *British Journal of Disorders of Communication*, 22, 37-64.
- [10] Clahsen., H. (1989). The grammatical characterization of developmental dysphasia.
- [11] *Linguistics*, 27, 897-920.
- [12] Clifford, J., Reilly, J., & Wulfeck, B. (1995). *Narrative from children with language impairment: An exploration in language and cognition*. Technical report CND- 9509. San Diego: Centar for research in language, university of California at San Diego.
- [13] Conti-Ramsden, G., & Hesketh, A. (2003). Risk markers for SLI: A study of young language learning children. *International Journal of Language and Communication Disorders*, 38 (3), 251-263.
- [14] Conti-Ransden, G., & Windfuhr, K. (2002). Productivity with word order and morphology: a comparative look at children with SLI and children with normal language abilities. *International Journal of Communication Disorders*, 37 (1), 17- 30.
- [15] Dunn, M., Flax, J., Sliwinski, M., & Aram, D. (1996). The use of spontaneous measures as criteria for identifying children with specific language impairment: An attempt to reconcile clinical and research incongruence. *Journal of Speech and Hearing Research*, 39, 643-654.
- [16] Eisensohn, J. (1972). *Aphasia in children*. New York: Harper & Row.
- [17] Grimm, H., & Weinert, S. (1990). Is the syntax development of dysphasic children deviant and why? New findings to old question. *Journal of Speech and Hearing Research*, 33, 220-228.
- [18] Joanisse, M. F. & Seidenberg, M. S. (2003). Phonology and syntax in specific language impairment: Evidence from a connectionist model. *Brain and Language*, 86, 40- 56.
- [19] Johnston, J. (1988). Specific language disorders in the child. In Lass, L. McReynolds, J. Northern & D. Yoker (Eds). *Handbook of Speech-Language Pathology and Audiology (685-715)*. Philadelphia: B. C. Decker, Inc.
- [20] Johnston., J. R. (1991). The continuing relevance of cause: A reply to Leonard’s Specific language impairment as a clinical category. *Language, Speech and Hearing Services in Schools*, 22, 75-79.
- [21] Klee, T., Schaffer. M., May, S., Membrino, I., & Mougey, K. (1989). A comparison of the age-MLU relation in normal and specifically language impaired preschool children. *Journal of Speech and Hearing Disorders*, 54, 226-233.
- [22] Klima, E., & Bellugi, U. (1966). *Syntactic regularities in the speech of children*.
- [23] *Psycholinguistic papers*. Edinburgh: Edinburgh University Press.
- [24] Lahey, M., & Edwards, J. (1996). Why do children with specific language impairment name the pictures more slowly than their peers? *Journal of Speech and Hearing Research*, 39, 1081-1098.
- [25] Leonard, L. (1981). Facilitating linguistic skills in children with Specific Language Impairment. *Applied psycholinguistics*, 2, 89-118.
- [26] Leonard, L. B. (1991). Specific language impairment as a clinical category. *Language, Speech, and Hearing Services in Schools*, 22, 66-68.
- [27] Leonard, L. B. (1998). *Children with specific language impairment*. Cambridge, MA: The MIT Press.
- [28] Leonard, L. B., Miller, C., & Gerber, E. (1999). Grammatical morphology and the lexicon in children with specific language impairment. *Journal of Speech and Hearing Research*, 42, 678-689.

- [29] Leonard, L. B., McGregor, K., & Allen, G. (1992). Grammatical morphology and speech perception in children with specific language impairment. *Journal of Speech and Hearing Research*, 35, 1076-1085.
- [30] Leonard, L. B., Schwartz, R., Chapman, K., Rowan, L., Prelock, P., Terrell, B., Weiss, A. & Messick, C. (1982). Early lexical acquisition in children with specific language impairment. *Journal of Speech and Hearing Research*, 25, 554-564.
- [31] McLaughlin, S. (1998). Introduction to Language development. Singular publishing group. Montgomery, J. (1995). Sentence comprehension in children with specific language impairment: The role of phonological working memory. *Journal of Speech and Hearing Research*, 38, 177-189.
- [32] Nayak, H. M. (1967). *Kannada: Literary and Colloquial*. Mysore: Rao and Raghavan. Owens, R. E. (1996). *Language development: An Introduction*. Boston, MA: Allyn and Bacon.
- [33] Paul, R., & Smith, R. (1993). Narrative skills in 4 year olds with normal, impaired, and late developing language. *Journal of Speech and Hearing Research*, 36, 592-598.
- [34] Paul, R., & Shriberg, L. (1982). Association between phonology and syntax in speech – delayed children. *Journal of Speech and Hearing Research*, 25, 536-547.
- [35] Rice, M., & Oetting, J. (1993). Morphological deficits in children with SLI: Evaluation of number marking and agreement. *Journal of Speech and Hearing Research*, 36, 1249-1257.
- [36] Skipp, A., Windfuhr, K. L., & Conti-Ramsden, G. (2002). Children's grammatical categories of verb and noun: a comparative look at children with specific language impairment and normal language. *International Journal of Language, Communication Disorders*, 37 (6), 253-271.
- [37] Stark, R. E., & Tallal, P. (1981). Selection of children with specific language deficits. *Journal of Speech and Hearing Disorders*, 44, 114-122.
- [39] Tager-Flusberg, H., & Cooper, J. (1999). Present and future possibilities for definition – a phenotype for specific language impairment. *Journal of Speech, Language and Hearing Research*, 42, 1275-1278.
- [40] Tomblin, J. B., Records, N. L., & Zhang, X. (1996). A system for the diagnosis of specific language impairment in kindergarten children. *Journal of Speech and Hearing Research*, 39, 1284-1294.
- [41] Van der Lely, H. K. J. (1997). Narrative discourse in grammatical specific language impaired children: A modular language deficits? *Journal of Child Language*, 24, 221-256.

AUTHORS

First Author – Prasitha P, Corresponding author. Associate Professor in Speech Language Pathology. Department of Audiology and Speech Language Pathology, SRM Institute of Science and Technology

Second Author – K Prema, Professor (Retd) in Speech Language Sciences, All India Institute of Speech and Hearing, Manasagangothri, Mysore

Appendix 1

10 point disability checklist (WHO)

- 1) *Compared with other children did the child have any serious delay in sitting, standing or walking?*
- 2) *Does the child speak at all?*
- 3) *Can the child make himself understand words, can he say recognizable words?*
- 4) *Does the child have difficulty seeing?*
- 5) *Does the child have difficulty hearing?*
- 6) *When you ask the child to do something, does he seem to understand what you are saying?*
- 7) *Does the child have any weakness or stiffness in the limbs/ difficulty in walking or moving his limbs?*
- 8) *Has the child often had fits, become rigid or lost consciousness in the last 6 months?*
- 9) *Has the child had any other serious accidents / illness?*
- 10) *Compared with other children of his age, does the child appear in any way backward, slow or dull?*

Appendix 2

Inclusion Criteria for selection of participants for Group II

Language scores	Language difference between the receptive and expressive language age scores must be 12 months. CLiPS (Computerized Linguistic Protocol for Screening, Anitha, 2003) will be used to check the language ability
Non verbal IQ	Performance IQ of 85 or higher CMMS(Columbia Mental Maturity Scale) will be used
Hearing	Pass screening at conventional levels (using audio scope) or hearing screening at the Department of Audiology, AIISH
Otitis media with effusion	No recent episodes based on case history
Oral structures	No structural abnormalities-OPME by investigator
Neurological dysfunction	No evidence of seizure disorders, cerebral palsy, brain lesions, not under medication for control of seizures