

SPEECH AND LANGUAGE ASSESSMENT USING LEST 0 TO 6 AMONG CHILDREN 0 TO 6 YEARS

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ABSTRACT: This descriptive study was conducted to assess the speech and language development and delay among children 0-6 years. 450 Children 0-6 years age groups were taken for the study. Each child was given the corresponding LEST and given a PASS if he or she had performed the test. Of the 450 children screened, 5.5 % had delay, 2.2 % had only questionable delay. Of the 25 children who had delay 15 (60%) were males. There is strong hazardous association between sex and speech delay. Statistical test also shows that there is association between speech Delay and Sex i.e., the result is highly Statistically Significant, ($p < 0.005$). Hence males have more speech Delay than Females. LEST – this simple validated or standardized screening tool will be useful for professionals to give early intervention. The Statistical method used is Chi- Square test. This test can be extrapolated to the general population. This test-LEST has been validated by Nair M.K.C et al.

KEY WORDS: Speech delay, Language delay, LEST.

INTRODUCTION: Life is not possible without exchanging thoughts, ideas, feelings and emotions. This exchange can be carried out with any form of language. Hence language as defined by Pei is "Sound produced by the human voice, received by the human ear and interpreted by the human brain".

In the absence of a culturally appropriate, simple, language development screening tool for use in neuro-developmental Follow-up Clinic, LEST scale was developed. LEST is divided into LEST – (0-3) and extended LEST (3-6) years. Each contains items on the Receptive language development and expressive language development of children.¹

The present study was to find out the speech and language development among the children up to 6 years in a community setting. This study was done in an urban area of a city in Kerala using LEST (0-3 years) and LEST (3-6 years) which has been improvised by CDC Trivandrum. (LEST- Language Evaluation Scale Trivandrum).

METHODS: This is a cross-sectional study done across a population of 450 children attending the well-baby clinic of Cochin Medical College, Kochi and 4-6 years children recruited from a Kindergarten School. Any child observed to have physical abnormality; hearing loss or developmental delay was excluded. 75 children in the age group of 0-1 year, 1-2 years, 2-3 years, 3-4 years, 4-5 years and 5-6 years were given the test questionnaire. Each child belonging to the specific age group was given the corresponding LEST. He/she was given a pass if he or she performed the test or was reported by the mother as observational information. Directions for administration and credits are given below. The performances were finally interpreted as Normal=if all items were done for the completed age, Questionable= if one item was not done and Delay= if 3 or more items were not done.

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RESULTS: Out of the 450 children, who were screened, 235 were girls and the rest were boys.

There was no delay observed in 0 to 1 and 3 to 4 years. 10 children had questionable delay in 4-5 years age group. 25 children had delay in the study group, .10 in the 4-5 yrs. and 5 each in the 1-2, 2-3, and 5-6, age groups in the present study, there is a male preponderance with a male female ratio of 60: 40 % of language delay. Thus among the 450 children who were screened 5.5% had delay, 2.2 % only had a questionable delay. Thus the prevalence of 5.5% delay identified among babies from 0- 6 years mandates the need for introducing communication screening tools in the well-baby clinics and nursery schools, so as to impart early intervention. In this study 2.2% had questionable delay.

Age	Male	Female
0-1	15	60
1-2	20	55
2-3	25	50
3-4	50	25
4-5	45	30
5-6	60	15

Table 1: Table showing the total number of male And female children in the various age groups.

Out of the 450 children who were screened, 235 were girls and the rest were boys.

Speech & Language Delay- SEX	With Delay	Without Delay	Total
Male	19	196	215
Female	6	229	235
Total	25	425	450

Table 2: Distribution of Speech & Language Delay Among Children according to Sex.

ODD's Ratio = 3.7 > 1.

There is strong hazardous association between sex and speech delay.

Statistical test also shows that there is association between speech Delay and Sex i.e., the result is highly Statistically Significant, ($p < 0.005$). Hence males have more speech Delay than Females.

Age	Normal	Questionable	Suspect	Delay
0-1	75	0	0	0
1-2	70	0	0	5
2-3	70	0	0	5
3-4	75	0	0	0
4-5	55	10	0	10
5-6	70	0	0	5

Table 3: Table showing the prevalence of delay in the various age groups.

There was no delay in 0-1 and 3-4 yrs., max delay was observed in 4-5 yrs. 25 children had delay in the study group.

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Studies	Prevalence
Present Study	5.5%
Cochrane	6%
de'konig etal	2.4-5.3 %
CDC TVM	4.5%

Table4: Table showing the prevalence of speech and language delay in various studies.

All the above studies show a prevalence of about 4-6 % language delay.

Study	Sex Ratio
	M : F
Present	60 : 40
CDC	55.6% - Males 44.4% - Females

Table 5: Table showing the sex ratio.

In the present study there is a male preponderance. In a study conducted by Paula Tallat et al there is a well-documented male preponderance. Cochrane data base study also found out an increased risk for male gender.

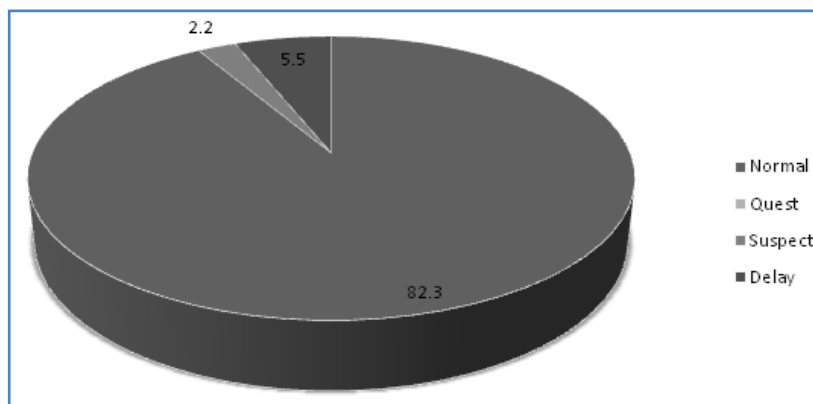


Fig. 1: Pie Diagram showing the prevalence of Delay, Suspect and Questionable in the present study of the age group. 0-6 years

In the present study of 450 children, 5.5 % had delay. Only 2.2% had questionable delay.

This chart shows the need to identify the children who are at risk so as to give early intervention, thereby decreasing the severity of language delay. The importance of identifying this is to give early intervention which may prevent or decrease the severity of language delay. All the above studies show a prevalence of about 4-6 % language delay. In a cluster-Randomized trial of screening for Language delay in Toddlers by de' konig, Ridder-sluiters van-Age HME et al, the prevalence of language disorders in three year olds were estimated to be 2.4 – 5.3 %.²

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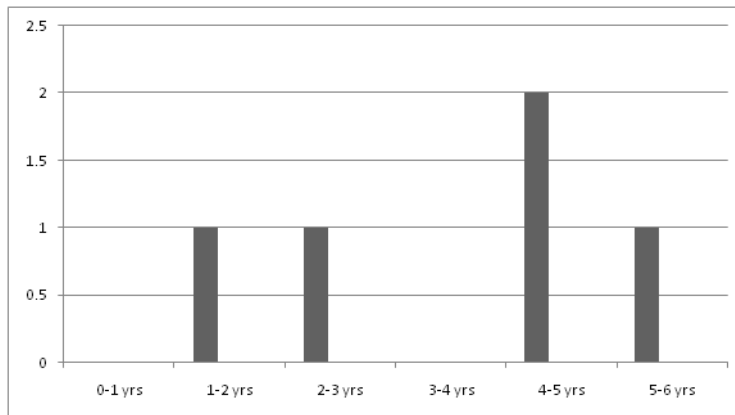


Fig. 2: Bar Diagram showing the prevalence of Delay, Suspect and Questionable in the present study of the age group. 0-6 years

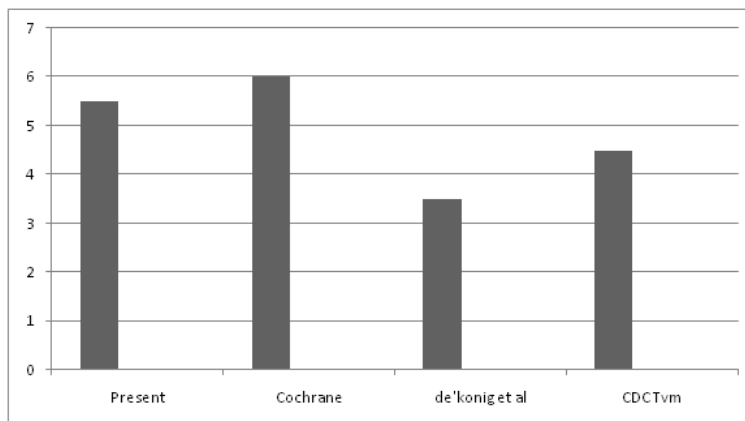


Fig. 3: Bar Diagram showing the prevalence of speech and language delay in various studies.

The above studies show a prevalence of about 4-6 % language delay. In a Cochrane study there was approximately 6 % language delay.³ In a study conducted by CDC Trivandrum, there was approximately 4.5 % language delay.⁴

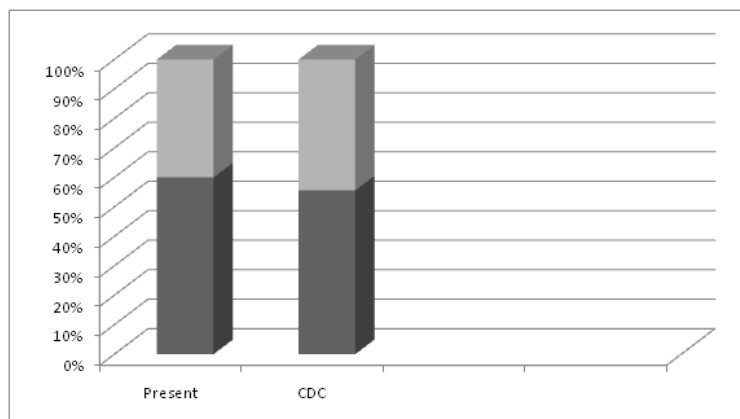


Fig. 4: Split Bar chart showing the sex ratio in the present study.

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In a study conducted in CDC TVM 55.6% were male and 44.4% were female children. Hence there was male preponderance in the language delay in male children.

In a Cochrane database study conducted for speech and language delay in pre-school children, it was found out that there is an increased risk for male gender in language delay.

DISCUSSION: According to a recent Cochrane study, for pre-school children 2-4.5 years, the prevalence rates for combined speech and language delay ranges from 5% - 8%⁵ and of language delay alone from 2.3% - 19%.⁶ Prevalence of speech and language delay in children without any neonatal risk factors was observed to be 4.5%.⁷ In the Cochrane study untreated speech and language delay in pre-school children has shown variable persistence rates from 0% to 100% with most studies reporting 40% to 60%.⁸ Family history was the most consistent significantly associated risk factor in 5 of 7 studies.⁹ Family history was defined as family members who were late talking or had language disorders, speech problems, or learning problems. Male sex was a significant factor in all 3 of the studies.¹⁰ Three of 5 studies reported an association between lower maternal education level and language delay, while 3 of 4 studies evaluating paternal education level reported a similar relationship. Other associated risk factors included childhood illnesses, born late in the family birth order, family size, older parents or younger mother at birth, and low socioeconomic status or minority race. One study evaluating history of asthma found no association with speech and language delay.

From the present study of 450 children attending a well-baby clinic at Cochin Medical College, Kochi and Kindergarten School, the following observations were made. The prevalence of delay in the 0-6 years was 5.5% but 2.2 had only a questionable delay. The delay was more in males as compared to females.

Policy Implications: It has been shown that language disorders top the list of childhood disability in the less than 5 years age group. It is also known that a delay in the language development and lack of communication may be an early marker of Autism Spectrum Disorders and impending learning disability. Regardless of the cause or severity of the delay early intervention is critical. This simple validated or standardized screening tool will be useful for the professionals who are working in the field of child development to pick up speech delay. Early intervention may prevent or decrease the severity of language delays in preschool and increase later academic success in school. Hence culturally appropriate locally relevant simple Language Development Screening tool like LEST is very useful.

The Statistical method used is Chi-Square test. This test can be extrapolated to the general population. This test-LEST has been validated by Nair M.K.C et al¹¹.

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Points to remember

1. It has been shown that language disorders top the list of childhood disability in the less than 5 years age group.
2. Regardless of the cause or severity of the delay early intervention is critical.
3. This simple validated or standardized screening tool will be useful to pick up speech delay.

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4. Early intervention may prevent or decrease the severity of language delays in preschool and increase later academic success in school.

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