



# Common Co-Morbidities Associated with Language Delay

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## ABSTRACT

**Background:** Language delay is a failure in children to develop language abilities on the usual developmental chart. Children are considered to have speech delay if their speech development is considerably below the norm for children of the same age.

**Objective:** The objective of the study was to establish the association between co-morbid conditions and language delay.

**Methodology:** A cross-sectional survey was conducted through questionnaire using convenient sampling technique. Data was collected from parents and children. Data of 55 children between the ages of 2 to 6 years with language delay referred for a psychiatric in Mayo Hospital, Lahore were included.

**Results:** The findings of this study showed high prevalence of language delay in males than females and significant co-morbidity associated with language delay are intellectual disability, Hearing Impairment and Global Developmental Delay. According to the results frequency distribution for gender of children is 82% were male and 18% were female. Language delay was more prevalent in children with intellectual Disability (33%), Global Developmental Delay (12.7%) and Hearing Impairment (12.7%). Other co-morbidities include Epilepsy (7.2%), Attention Deficit and Hyperactive Disorder (5.5%), Autism (3.6%) and Physical Disability (3.6%).

**Conclusion:** Exact cause of language delay is unknown but there are much co-morbidities associated with it. These co-morbidities have significant association with normal development. To avoid delay in normal development of language, it is important to consult pediatrician, neurologist, audiologist, psychologist, and speech and language pathologist on regular basis depending upon the type of co-morbidity.

**Key Words:** Language Delay, Co-morbidities, Language

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## INTRODUCTION

Language development is thought to proceed by ordinary processes of learning in which children acquire the form, meaning and use of words and utterances from the linguistic input<sup>(1)</sup>. This phenomenon tells that human species have an innate ability of language acquirement, this developmental process makes language acquisition possible and practically certain, it also reveals that environment is helpful in language possession<sup>(2)</sup>. The acquisition of language is a striking developmental achievement of preschool years. Clinically significant deficits in hearing, intelligence or oral motor function are often accompanied by abnormal speech and language acquisition<sup>(3)</sup>. Study conducted by Chaimay and Thinkhamrop for assessing Risk factors associated with speech-language problems in childhood concluded that there were inconsistent risk factors including antenatal care,

environmental factors, gender, family history and Specific language impairment. Many other Studies also demonstrated that former established factors affect speech language development: Such factors should be taken into account as perplexing factors in further development<sup>(4)</sup>.

If speech delay persists it may lead to severe problems and adverse effects on education, psycho-social development and literacy skills of a child. Speech delays are primary when there are no secondary issues and co-morbidities. While they are considered secondary when some other causes are coupled with it e.g. syndrome or other conditions which include Hearing Impairment, Down's syndrome and many others, the delays are secondary<sup>(5)</sup>.

More disorders include expressive language disorder, social deprivation, autism, elective mutism, receptive aphasia and cerebral palsy.



Other than the maturational delay and bilingualism, speech delay might have secondary significance. During the session of history taking and physical examination, general practitioner can make diagnosis on the grounds of these observations, knowledge and experience. Importance of timely detection and treatment cannot be denied for the betterment of the emotional, social and cognitive deficits of disability<sup>(6)</sup>.

Treatment and timely detection importance can never be ignored for the advancement of social, emotional and cognitive insufficiencies. To understand the speech and language development literature has provided with different contexts of theorists such as Piaget, Chomsky and Skinner. Who believed that children are active learners in their environment and their speech and language is significantly influenced by those environmental factors. Moreover parents play important role in modeling and reinforcing as communication is a learned behavior formed through interaction with other persons. Without this important factor the child won't be able to produce the sounds of its language successfully regardless of how much the physical maturation proceeds. That's why in this study we also focused on the role of factors affecting the child<sup>(7)</sup>.

Any deficiency in communication can bring not only retardation in orderly development of child's different aspects but also can worsen the condition in terms of hindrance in cognitive development and personality development<sup>(8)</sup>.

All above mentioned risk factors and problem can cause delay in early physical growth in terms of both fine and gross motor skills development and more seriously can be associated with delays in language and cognitive development. Furthermore, these negative and devastating outcomes in their growth have both direct and indirect impacts on social development negatively such as behavioral and emotional problems<sup>(9)</sup>.

This study was conducted to find the most prevalent co-occurring condition in children with language

deficit, which are responsible for creating hindrance in normal developmental pattern of language acquisition.

## METHODOLOGY

A cross-sectional survey was conducted using convenient sampling technique. Data of 220 children between the ages of 2 to 6 years with language delay referred for a speech and language evaluation in Mayo Hospital, Lahore were included. Sample size was calculated with reference to similar study conducted in North India to examine the relationship between cumulative biological and environmental risk factors on the language development of children<sup>(10)</sup>.

Data was collected in direct interview with parents or caregivers in a formal sitting, using record sheet from the literature and expert opinion. Data was analyzed using SPSS software and endnote was used for references.

## RESULTS

Distribution of study sample is shown in Table 1. Sample of 220 children was taken.

**Table No. 1 Distribution of co-morbidities in the sample**

Co-morbidities	Percentage
Intellectual disability	33%
Global Developmental delay	12.7%
Hearing impairment	12.7%
Epilepsy	7.2%
Attention deficit and hyperactive disorder	5.5%
Autism	3.6%
Physical disability	3.6%

The findings of this study showed high prevalence of language delay in males than females and significant co-morbidity associated with language delay are intellectual disability, Hearing Impairment and Global Developmental Delay. According to the results frequency distribution for gender of children is 82% were male and 18% were female. Language delay was more prevalent in children with intellectual Disability (33%),



Global Developmental Delay (12.7%) and Hearing Impairment (12.7%). Other co-morbidities include Epilepsy (7.2%), Attention Deficit and Hyperactive Disorder (5.5), Autism (3.6%) and Physical Disability (3.6%).

Figure No. 1 Distribution of Study Sample



## DISCUSSION

An epidemiological study conducted by Shriberg, Tomblin and McSweeney showed that prevalence of speech delay in children is 3.8% of the age 6 years. However, the etiology of speech delay is unknown; many variables have been described as potential risk factors which include male sex, factors associated with socioeconomic disadvantage and family history of developmental Speech-Language Disorder. According to their results Speech Delay was more prevalent in boys than girls, in children from urban than from rural areas<sup>(10)</sup>. Same results were exhibited in current study; males are five times more susceptible to develop language delay.

In North India, sample of 253 children were evaluated to examine the relationship between cumulative biological and environmental risk factors on the language development of children. The most detrimental effects on child's language arise when multiple biological factors are there (preterm birth, low birth weight, history of birth asphyxia) that leads the child towards the realm of delay in cognition, language and physical development<sup>(11)</sup>. According to a study conducted in Serbia most common cause of expressive language delay is Intellectual disability which accounts more than 50% of cases. Relatively to other fields of development, expressive language development is considerably more

delayed in intellectually disabled children<sup>(8)</sup>. Data of current study also support the fact that language delay is mostly associated with problem in cognition (33%), physical development etc.

Global developmental delay and intellectual disability offer challenges to the practitioner at several levels e.g. recognition of most common of subtypes of neuro developmental disabilities is a central precondition to their correct evaluation and management<sup>(12)</sup>. Global developmental delay is the 2<sup>nd</sup> highest co-morbidity (12.7%) in current study that is associated with children with language delay. It is a common observation that predominantly lower mean language score is seen in intermediate and adolescent epilepsy group. Young individuals' language competence is more affected than those of adults and intermediates. Deficits in language aspects are associated with linguistic deficits in young children group are seen mostly associated with long duration of illness. Majority of children in this study are with organic problems<sup>(13)</sup>.

Keeping in mind that first five years of life are the most important in achieving the therapeutic goals, early Intervention has a great significance in child's development<sup>(14)</sup>. There are risk factors identified among children having speech language problems and have showed significance association, some of them are: being only child, being male, having history of speech-language variations in family and prematurity. Children exhibiting one or more aforementioned risk factors must be intermittently followed-up for better communication development and if required referred for early intervention<sup>(15)</sup>.

## CONCLUSION

Organicity is an important factor that can cause hindrance in normal development of language. Language delay along with co-morbidities is seen frequently in patients reporting for speech and language evaluation. Significant co-morbid condition that probes the child more towards the language delay are the Intellectual Disability, Global Developmental Delay and Hearing Impairment. Although exact cause of speech and language delay is unknown yet but these biological conditions have a noteworthy role.



## RECOMMENDATIONS

On the basis of the results it is concluded, it is observed that there is an immense need to identify the co-morbid conditions responsible for crafting delay in normal developmental pattern of speech and language. Significance of early investigation and intervention is evident from literature. Communication is a social right and steps should be taken for the better speech and language development of children suffering from organic conditions.

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