

IDENTIFYING LANGUAGE DELAYS AMONG DEAF CHILDREN



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KEY FINDINGS

- There are many gaps in our knowledge about the identification and treatment of language disorders for children who communicate in the visual/sign modality
- Understanding language milestones (whether signed or spoken) will create greater awareness of potential delays
- Parents of deaf children need to be aware of language issues and seek out assessments early in their child's life in order to ensure that their children's language development is progressing normally
- There is a great need for more ASL-based language assessments for young signing deaf children that would allow for timely diagnoses/interventions at a critical age
- Parents, language professionals, and educators can take steps to help promote language development

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Identifying Language Delays Among Deaf Children (VL2 Research Brief #12)

Children who experience delays in the acquisition of language are at risk for lasting developmental deficits in many aspects of their lives. Language delays may lead to poor academic skills, inadequate social development, and ultimately, limited opportunities for successful careers and relationships.¹

Given the importance of early language acquisition, it is imperative that parents and professionals continually assess whether a child is exhibiting delayed language from the earliest months of the child's life, so that remediation strategies can be employed if necessary. This importance holds, whether the child is deaf or hearing, and whether their language is spoken or signed.

While there is a considerable amount of research on language delay and disorders for hearing children employing a wide variety of assessments, there is very little published on this topic for deaf children who communicate with American Sign Language (ASL). This may be attributed to a lack of available assessments and difficulty in determining specific causes of the weak language skills. This brief will discuss the potential etiologies of language delay, describe the current challenges in assessing this population, and provide tips for parents of deaf children in the hopes of increasing awareness of those who may be at risk for language disorders.



Determining the root causes of language delay

The causes of language delay are not easily determined, especially for signing deaf children. For these children, little is known about what constitutes normal language development, and there are few formal assessments of signed language skills targeted to preschool aged children. Importantly, language delay may result from inadequate *exposure* to a language, or it may result from underlying biological and cognitive causes. The identification of language delays among deaf children and an understanding of their causes are necessary for ensuring that appropriate strategies are put in place to remediate the negative effects of those delays.

Inadequate early language exposure

For any modality of communication, having early access to a language is crucial, creating the foundation for further linguistic learning.² Thus, it should be a priority for parents to ensure that their children receive language input early. Parents of deaf children may fear that exposure to sign language at a young age will hinder the later development of spoken language.³ This fear is unfounded^{4,5} and potentially harmful to the child's language

learning, as it may lead to impoverished input of *any* language during a critical period of language development from birth to age two. During this critical period, children have the greatest capability to acquire essential grammatical and phonological skills, so it is important that they are receiving optimal language input at this time.⁶ In addition, numerous studies have demonstrated the many benefits of bilingualism⁷⁻⁹ and asserted that children who learn multiple languages from an early age have cognitive advantages compared to monolinguals.^{5, 10-15} Further, there is no disadvantage to learning a signed language in addition to a spoken language. Studies of the brain have clearly demonstrated the brain's capacity to acquire multiple languages during the earliest years of life, and have discovered that the same regions of the brain process linguistic patterns and input, regardless of whether the perceptual information is visual or auditory.¹⁶

But no matter the reason for the lack of exposure, research explains that any delay in language access can lead to long-term developmental problems.¹⁷⁻²¹ For children who are deaf, these problems can be particularly acute, as more than 90% of congenitally deaf children are born into hearing families²², where they are less likely to be viewing models of linguistically accurate and accessible language. This may create difficulty navigating which language(s) to use in the home, potentially leading to an inadequate environment for language growth.

Biological causes

Other causes of language delay may be attributed to biological etiologies. Primary language disorders are neurologically based conditions that cause the child to

have significant delays in language development compared to other children their age.²³ Primary language disorders can impact comprehension and/or expression across many areas of language. There has been much research about primary language disorders in hearing children, but very few studies have examined language disorders among deaf children in signing families. Most research on primary language disorders in deaf children has involved case studies of individual children with significant language delays.^{24,25} Early work based on clinical cases of deaf children using visual communication (ASL or Cued Speech) explored the rationale for identifying such children with a language disorder although the definition of a specific language impairment (SLI) excluded deaf children.^{26,27} Further case studies of language disorders in deaf children learning ASL have also supported the presence of SLI in deaf children.²⁸ A later study of a group of deaf children evaluated with a measure of British Sign Language (BSL) identified SLI in children using BSL.²⁹ The authors noted that the language delays observed were not explained by inadequate BSL exposure or cognitive, motor or social deficits. The presence of primary language disorders in both BSL and ASL supports the contention that specific language impairment can occur for users of signed languages; however, more research needs to be done on ways to identify and support these children.

There are other biological conditions, such as intellectual disabilities and autism spectrum disorders, which may cause language delays in deaf children.³⁰ There are also biological issues that only affect language for visual (rather than spoken) languages. For example, deafblindness

and visual processing deficits³¹ can inhibit the development of sign language skills, yet would not be expected to have significant effects on spoken language functioning. Similarly, due to the need for attention in order to take in language, ADHD has a greater impact on the development of visual languages than it does for spoken languages.³²

Alternatively, children with fine motor issues may have difficulty with expressive signing despite adequate receptive skills.³³ This may result in confusion about the child's actual language skills and hinder their ability to communicate their wants and needs. Differential diagnosis among these types of conditions, primary language disorders, and delayed or inadequate sign language exposure is important, as the effective interventions may vary depending on the underlying cause.

Dual etiologies

While it is important to distinguish between those who have had poor language development due to a lack of exposure and those with a biological cause, there may not always be a distinct separation. In addition to the potential for co-existing conditions, insufficient exposure can result in biological impairments. Receiving little to no language support at a very young age may lead to serious cognitive delays, and can actually lead to impairments in brain development.³⁴ Thus, impoverished exposure and biological factors may not always be mutually exclusive; they may be concurrent influences on a child's development of language abilities.

Assessment of language milestones

When developing assessments to determine if a child is experiencing language delays, it is often helpful to look at the milestones of typical language acquisition. Interestingly, children who are ASL-English bilinguals from deaf families progress in both languages at the same rate as hearing bilinguals and similar to monolingual children do in their sole language.³⁵ Even though the acquisition of each language progresses in a similar timeline, it is necessary to have separate assessments to evaluate both modalities for deaf children. Because deaf children may be described as "bimodal bilinguals", i.e., they communicate in ASL both expressively and receptively, and they acquire English skills through spoken language, reading, and writing, it is important to assess their skills in both languages to detect a language delay. There are many assessments available to measure a deaf child's English skills, but very few are designed to specifically measure a child's ASL abilities. There is a need for these assessments to be developed and used as screening tools to identify those with signed language disorders.³⁶

Currently available assessments

One of the few available standardized assessments is the Visual Communication and Sign Language (VCSL) checklist.³⁷ The VCSL checklist presents 114 behavioral statements that map development milestones for deaf children ages 0 to 5 years old, and is marked on a four-point scale of "Not Yet Emerging", "Emerging", "Inconsistent Use", and "Mastered". Children are rated by trained assessors on the level of acquisition on these behaviors in order to determine basal and ceiling levels of language

acquisition. The goal of this scale was to establish norms for the development of a signed language. This checklist can be used as an important tool to screen children for potential risks of language delays or disorders, by comparing their achievement to these standardized milestones of ASL acquisition. In a paper that is currently in progress (by the authors of this Brief), an analysis of data using this checklist investigated children who come from an “All or Most-ASL” home language environment with deaf parent(s). By examining those who are delayed through the mastery rankings of the VCSL checklist, the analysis identifies certain linguistic milestones that might help determine those who need further assessment and, perhaps, intervention. This analysis focused specifically on a group of signing deaf families, but the VCSL is a valuable tool for others from different home language environments as well. There may be other assessments to evaluate higher levels of language, but the VCSL is the most relevant standardized measure for this critical period of language development before elementary school.

Importance of early intervention

With the proper assessments, delays can be identified and lead to intervention. Regardless of whether delay is exposure-based or biologically-based, intervention benefits the child, if implemented early enough. Early intervention is critical to supplement the child’s linguistic skills and can lead to improvement on language tasks.³⁸ In addition to clinical intervention, there are actions that parents can take to improve their child’s language-learning environment.

Education and awareness

It is imperative that parents of a newly diagnosed deaf baby become educated about the varying courses of language development their child might take. One of the first steps is receiving information about hearing aids, cochlear implants, and accessible forms of communication, such as sign language. This includes becoming knowledgeable about the language of ASL and the culture of the Deaf community. A deaf child born to hearing parents may experience a language barrier if the parents do not communicate to their child in an accessible language, such as sign language. Deaf and hearing parents alike must understand the importance of early language exposure and sufficient language input for their child.

Once a parent understands this importance, they need to become familiar with the progression and development of certain milestones, including which items may be markers for language delay. This awareness will allow parents to observe and act for potential screening and assessment. While it is the job of clinical professionals to diagnose and treat language delays, parents and educators can make initial observations that may aid the process of identifying these children.

Addition of signing models

Parents of deaf children can also introduce more language input in the home by incorporating signing models in addition to the parents, who are often new signers and not able to model linguistically accurate ASL. This can be accomplished in a few ways. One is through the use of new technology, one example being the creation of interactive, bilingual (ASL-English) storybook apps that allow for

increased exposure in both languages.³⁹ This inclusion can lead to more (and more accurate) exposure to the language during development. Even without the use of technology, parents and educators can provide additional language input through their interaction with the child.⁴⁰ Educators can be strong language models for children in the classroom by strategically generating questions that challenge language use, promoting positive developmental outcomes for the children.⁴¹⁻⁴⁴ Parents can also support their child's language and literacy skills by asking questions during reading activities, which will facilitate higher cognitive aspects of language interaction.⁴⁵

Increasing play and interaction with peers

Children learn through play and interaction with both adults and other peers.⁴⁶ Parents and educators can promote this with children of similar ages, providing them with more language models who have a comparable linguistic level. The ability to learn from different peers gives children distinctive interactions to facilitate growth.^{47, 48} There are multiple potential benefits to language development from playing with peers, including increased overall language input, engagement, and social situations related to the development of pragmatic skills.⁴⁹ Indeed, play enhances the effectiveness of intervention through direct instruction, as the combination of the two was shown to produce greater

vocabulary development than the intervention alone.⁵⁰ Different types of play will yield various benefits, but by encouraging their child to engage more, parents are helping to increase exposure and input of the language.⁵¹

Ongoing assessment of language progress

Typically and atypically developing children can benefit from periodic assessment of language skills within the school setting. It is important to screen children for language issues beginning soon after their first exposure to the language, and to continue these screening procedures at frequent intervals as the child grows.²³ This practice of continual evaluation will allow language delays to be identified earlier and the child's progress to be monitored more closely. Once a delay has been identified, it is important to refer the child as soon as possible to maximize intervention efforts.

Translating VL2 Research

The National Science Foundation Science of Learning Center on Visual Language and Visual Learning (VL2) publishes research briefs as a resource for parents, educators, and others who work with deaf and hard of hearing children. These briefs review important research findings, summarize relevant scholarship, and present informed suggestions for parents, educators, and professionals.



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