ENCYCLOPEDIA
on Early Childhood
Development

Early Identification of Language Delay

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February 2017, Éd. rév.

Introduction

Because language is central to so many aspects of human life – cognition, social interaction, education and vocation – valid identification, prevention, and treatment of language disorders is a high priority for the therapeutic professions. Delay and/or difficulty in beginning to use language is one of the most common causes of parental concern for young children brought to pediatricians and other professionals. Delay may indicate specific difficulty with language, or it may be an early indicator of a broader problem such as developmental delay or autism.

Subject

In this article, we summarize current knowledge about the assessment of young children's language below age 3, particularly in the range of 24 to 30 months (for which we have the most extensive information), in order to identify early language delay and/or risk for persistent language impairment. The goal of this screening process is to guide decisions concerning the need for further evaluation and treatment, in order to prevent the development of more significant problems. Language sampling and analysis have substantial time and expertise requirements.

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Problems

Early identification of language delay must resolve two fundamental problems. The first is the problem of obtaining valid information at an age when children are often not sufficiently compliant for direct testing, especially those with limited communication skills who are the primary focus. Furthermore, the assessment technique must be cost-effective with respect to professional time, and broadly applicable across a range of social classes and language backgrounds, including bilingualism. Language sampling and analysis have substantial time and expertise requirements.

The second problem is one of interpretation. Many children whose language is delayed at 24 or 30 months will catch up over the next few years, and do not warrant intervention.[1] The challenge is to identify and use other relevant information to improve decisions about individual children.

Research Context

The solution to the first problem above has been the revival of an older, but neglected technique: parent report.[2,3] Parents have much more experience with their children than professionals, and their experience is more representative of their child's experiences and interests. Vocabulary checklists and related questions for parents have proven to be highly valid measures of early language development.[4,5,6,7,8,9,10]

Solving the second problem has required two programs of research: first, large-scale norming studies to provide a basis for judgment of the relative status of a child's language (delayed or not)[3] and second, longitudinal studies of outcome of early delay to identify predictors of "spontaneous recovery" or continued delay.[1]

Key Research Questions

Five questions are central to early identification of language delay:

1. What is a valid criterion for defining early language delay?
2. How much variability in outcome is there for early delay?
3. What other factors can add to prediction of outcome, and how should they be integrated?

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4. How do differences related to social class, gender, and ethnicity affect the identification process?
5. How should the process be modified for children acquiring two or more languages?

Recent Research Results

Toddlers who have not attained the expressive language skills exhibited by most children the same age can be identified as having slow expressive language development (SELD). Among English-speaking children, studies suggest that 90% of 24-month-olds have an expressive vocabulary of at least 40-50 words and about 85% are combining words.[6] Based on these findings, two criteria for identifying SELD among 24-month-olds are commonly used: 1) small expressive vocabulary (less than 40-50 words, or below the 10th percentile, depending on the tool used) and/or 2) no word combinations.[6,8] The 10th percentile criterion can be extended to other ages.

Children with SELD at age 2 are at 2 to 5 times higher risk for language impairment persisting into the late preschool to elementary school years than children without SELD.[1,11] Even though at least half of the two-year-olds with SELD will have language skills that are within the normal range by school age,[9,10] early expressive language delays should not be ignored, given the elevated risk of persisting language impairment.

Longitudinal studies of two-year-olds with SELD have examined a variety of potential predictor variables for persisting difficulties. Those variables which most regularly are found to make some prediction include parent concern about possible problems with the child's speech/language development or hearing, family history of language impairment or dyslexia (especially first degree relatives: parents, full siblings), receptive language delays, frequent ear infections, limited vocalizations, and delayed pretend play.[12,13,14] Although none of these is a highly accurate predictor by itself, parental concern has been the most consistently associated with language impairment.[1,10] Combining predictors has improved accuracy of predictions, but the optimal combination of predictors is not yet known.

For monolingual children who speak languages other than English, there are adaptations of the widely used *MacArthur-Bates Communicative Development Inventories* (*CDI)*[a] and the *Language Development Survey (LDS)*[8,16,17] in a number of languages. There is considerable consistency across languages in children's early expressive language development. For example, word

combinations are reported for about 85% of Spanish-speaking and over 90% of French-speaking 24 to 26-month-olds children.[15,18]

Bilingual children's development of expressive vocabulary is comparable to monolingual children when parent reports for both languages are obtained and combined. There are two methods for combining vocabulary scores: "Total conceptual vocabulary (TCV)," in which words with similar meanings (e.g., English "cat" and Spanish "gato") are counted only once,[19] and "Total vocabulary (TV)" which includes all words in each language, regardless of possible overlap in meaning. For young children, TV (Language A + Language B) is recommended because it is simple to calculate and it yields vocabulary size scores and growth rates for young bilingual children that are similar to those for monolingual children's vocabulary.[20] Age of onset of word combinations also is similar for bilingual and monolingual children if bilingual children are credited with combining words if they do so in either language.[16,21,22,23]

Although pairs of monolingual forms can be used, there are also some bilingual adaptations of vocabulary checklists available, including Spanish-English[22] and German-English[16] adaptations of the *Language Development Survey* and a bilingual Spanish-English scoring adaptation of the *CDI* .[21]

Research Gaps

Variation in findings across social groups and gender differences indicates that parent report tools and/or criteria for early identification may need adjustment for different populations. The rate of identification of SELD using parent report tools is much higher for children from lower SES families; cut-offs that yield about 10% of middle class children identify two to three times as many children from lower SES backgrounds.[24] Although children from low SES backgrounds are at somewhat higher risk for language impairment, these major differences in rate of identification raise concerns about over-identifying SELD among children from lower SES backgrounds. Children from minority ethnic backgrounds had lower average scores when SES was controlled for in one study, raising similar questions about the validity of parent report tools in culturally diverse populations.[24] Finally, when uniform expressive vocabulary and word combination criteria are used, more 2-year-old boys are identified with SELD,[1,11,25] raising a question of whether different criteria may be appropriate for boys and girls. Research comparing outcomes for boys and girls with SELD is needed to address this question.

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Conclusions

Young children with expressive language skills that are approximately below the 10th percentile are at much higher risk than peers for persisting language or even broader developmental problems, even though there is a wide range of outcomes and many children with SELD at two years of age are in the average range by four years of age. A variety of additional variables are associated with persisting delays, and parental concern about possible speech-language problems is a key predictor of risk for language impairment.

Implications

Early childhood educators, health care providers and other professionals can identify risk for language impairment in young children based on parent-reported information. Immediate referral to a speech-language pathologist is recommended for children with slow expressive language development if the parents are concerned that the child has possible speech-language problems or when there are additional risk factors. On the other hand, if the parents are *not* concerned about the child's speech-language development and there are no additional risk factors, monitoring ("watchful waiting") is recommended for children who are not combining words or who have a small expressive vocabulary (under 40 words) at 24 months.

Monolingual children who speak languages other than English should be referred for evaluation if they are delayed in expressive vocabulary and onset of word combinations in their native language. Because expressive language development is comparable among monolingual and bilingual children when bilingual children's development in both languages is taken into account, bilingual two-year-olds who are not combining and/or have small total expressive vocabularies should be monitored and/or referred for further evaluation.

Collaborative efforts between practitioners and researchers on large scale screening programs that combine screenings with follow-up evaluations are needed to refine and validate models for predicting persisting language impairment for children with parent-reported SELD, using other information about the child and family. These efforts should also include work to adapt, implement and validate measures for children from homes in which languages other than English are spoken, and for children from lower socioeconomic backgrounds.

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Note:

[a] See also the MacArthur-Bates Communicative Development Inventories website. Available at: http://mb-cdi.stanford.edu/. Accessed February 15, 2017.