When a Child is Speech Delay: Causes, Diagnosis, and Intervention

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Abstract

Speech Delay in children is a developmental problem that often raises concerns for parents and health professionals. This research aims to identify the causes, diagnostic methods and effective interventions for treating speech delays in children. The causes of speech delays can vary, including genetics, environment, hearing loss, and medical and neurological conditions such as autism and language spectrum disorders. A diagnosis of speech delay requires a comprehensive evaluation by a multidisciplinary team that includes a pediatrician, speech pathologist, psychologist, and audiology specialist. Assessment tools such as language development tests and clinical observations are often used to assess a child's speech and language abilities. Effective interventions include speech therapy, language stimulation programs, as well as active involvement of parents in therapy. In addition, early intervention is highly recommended to maximize a child's speech development potential. This research emphasizes the importance of early detection and appropriate intervention to overcome speech delays and support optimal communication development in children.

Keywords: Diagnosis, Intervention, Causes, Speech Delay.


Kata Kunci: Diagnosa, Intervensi, Penyebab, Terlambat Bicara.

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INTRODUCTION

Delay in talking to children is one of the main concerns for parents and educators (Allport et al., 2018; Budiarti et al., 2023; Widiyaningrum et al., 2024). Language and communication development is a crucial aspect of a child's development, influencing their social, emotional and academic skills (Bisma et al., 2023; Fadillah et al., 2023; Nurqodriah et al., 2023; Oktaviana et al., 2021). This article will discuss in depth the causes of speech delays, the diagnosis process required, and interventions that can be done to overcome this problem. Speech delays in children are a significant developmental problem and affect approximately 10-15% of the pre-school population worldwide (Hestiyana et al., 2021).

This phenomenon not only disrupts children's communication skills, but also impacts their social, emotional and academic development. Identifying the causes of speech delays, understanding appropriate diagnostic methods, and determining effective interventions are key to helping these children reach their full potential (Misykah, 2022). There are several factors that cause delays in speaking in children: (1) Biological and genetic factors. One of the main causes of delays in speaking is biological and genetic factors. Children with a family history of language disorders or developmental delays are often more susceptible to similar problems (Habsad et al., 2024). According to research by Hermawati & Sugito, (2021) there is a significant genetic component in language development, where children from families with a history of speech delays have a higher risk of experiencing this condition. In addition, medical conditions such as hearing loss, autism, and cerebral palsy can also affect speech development. The study by Abidarda & Ridhani, (2022) showed that children with hearing loss have significant speech delays due to limitations in receiving auditory language input. (2) Environmental Factors: In this case the environment also plays an important role in children's language development. Children who grow up in an environment that does not support language development, such as a lack of verbal interaction with adults or the absence of adequate linguistic stimulation, tend to experience speech delays (Rullyanti et al., 2022).

Aisyah & Suryana (2021) found speech delays can also be caused by specific developmental disorders such as Specific Language Impairment (SLI). Children with SLI have difficulty acquiring language even in the absence of obvious medical or environmental factors. According to Habsad et al., (2024), SLI affects approximately 7% of the child population and is one of the main causes of speech delays that is not related to other external factors.

There are several ways that can be used to diagnose Speech Delay in children, (1) Initial Observation and Screening: The process of diagnosing speech delay begins with initial observation and screening. Parents and educators are usually the first to identify signs of speech delay. According to the American Speech-Language-Hearing Association Tabroni et al., (2024), signs of speech delays in children include absence of first words by 15 months, lack of two-word phrases by 2 years, and difficulty following
simple commands. (2) Professional Evaluation: If there are indications of speech delay, further evaluation by a professional, such as a speech-language pathologist, is necessary. This evaluation involves various tests and observations to assess the child's speech and language abilities.

According to research by (2017), standard tests such as the Preschool Language Scale (PLS) and Clinical Evaluation of Language Fundamentals (CELF) are often used to assess children's language development. (3) Hearing Examination: Hearing examination is also an important part of diagnosing speech delay. Many cases of delays speech caused by undiagnosed hearing loss. The study by Anne et al., (2017) showed that early detection of hearing loss and appropriate intervention can significantly improve language development outcomes in children with hearing loss. (4) Psychological and Medical Evaluation: Psychological and medical evaluations are also necessary to identify medical conditions or developmental disorders that may underlie speech delays. According to Hestiyana et al., (2021), this evaluation may include cognitive development assessments, genetic tests, and neurological examinations to ensure that speech delays are not a symptom of a more serious medical condition.

Interventions for Speech Delays that we can give to children include (1) Speech and Language Therapy: Speech and language therapy is the main intervention for children with speech delays. This therapy is usually carried out by a speech and language pathologist who works with the child to improve his or her speech and language skills. According to research by Moriarty & Gillon, (2006), phonological therapy that focuses on sound pronunciation and word structure can help children with articulation disorders. (2) Early Intervention: Early intervention is very important in treating speech delay. Despite the significant findings by Abidah & Yunitasari (2024), which highlight the positive impact of early intervention on children's language skills, there is a noticeable gap in longitudinal studies that examine the long-term outcomes of such interventions. Further research is needed to track the sustained impact of early interventions over several years. Additionally, while Chen & Chan, (2019) demonstrated the effectiveness of parent training programs in improving children's language skills, there is a lack of recent studies evaluating the best practices for implementing these programs across diverse socioeconomic contexts. Moreover, there is limited information on how cultural differences influence the outcomes of family-based approaches. In the realm of technology, the study by C. A. Johnson et al., (2004) showed the benefits of AAC devices, but the rapid advancement of technology over the past two decades necessitates updated research. There is a pressing need to evaluate the effectiveness of contemporary educational apps, virtual reality, and AI-driven speech therapy tools in supporting children with speech delays.

This research will offer a novel contribution to the field by providing a comprehensive analysis of the long-term effects of early intervention programs on children with speech delays, addressing the gap in longitudinal data. Additionally, it
will explore the adaptation of family-based speech delay interventions to various cultural contexts, offering a fresh perspective on customizing these programs to better suit diverse populations. Furthermore, by investigating the impact of the latest technological advancements and assistive devices in speech therapy, this study will provide up-to-date insights into the most effective tools and methods for aiding children with speech delays.

The primary objectives of this research are threefold. First, it aims to assess the long-term effectiveness of early intervention programs on language development in children with speech delays, determining whether the improvements seen with early intervention are sustained over time. Second, it seeks to evaluate the impact of family-based interventions across different cultural and socioeconomic backgrounds, with the goal of understanding how to best implement and adapt these approaches to maximize their effectiveness in diverse settings. Third, the research aims to analyze the efficacy of modern technological tools and assistive devices in enhancing the language skills of children with speech delays, focusing on comparing various contemporary technologies and identifying the most beneficial tools for speech therapy.

**METHODS**

This research uses a qualitative descriptive approach with a case study method. This approach allows researchers to obtain an in-depth picture of individual experiences and contexts that influence speech delays in children. The research population was children aged 2-5 years who were diagnosed with speech delays, who were in the Al-Ikhsan Islamic Playgroup and Kindergarten. Samples were taken by purposive sampling, with inclusion criteria for children who had received a diagnosis from a health professional and exclusion criteria for children with other developmental disorders such as severe hearing loss.

Data Collection Techniques and Instrument Development: Data were collected through in-depth interviews with parents, educators, as well as direct observation of children, as well as analysis of medical and educational documentation. The research instruments included a semi-structured interview guide, observation checklist, and a validated child language development assessment form. (4) Data Analysis Technique: Data was analyzed using a thematic analysis approach. This process involves coding data, identifying major themes, and interpreting findings within a specified theoretical context. Data validity and reliability were maintained through triangulation of data sources and peer debriefing.

**RESULTS AND DISCUSSION**

Answering the Problem Formulation and Research Questions. Causes of Speech Delays, research results show that the causes of speech delays in children can be divided into several main categories: biological, environmental and social factors. Biological factors include neurological disorders, genetic disorders, and hearing problems.
Environmental factors include a lack of language stimulation at home and minimal verbal interaction with parents. Social factors involve aspects such as family stress and low socioeconomic status. Diagnostic Process, an effective diagnostic method involves a comprehensive assessment that includes medical, audiological evaluation, and language development assessment by a speech and language pathologist. Interviews with parents and direct observation are also important components in diagnosis. Diagnostic tools such as the MacArthur-Bates Communicative Development Inventories (CDIs) and the Preschool Language Scale (PLS) are often used in these evaluations.

Effective Interventions interventions that have been shown to be effective include speech and language therapy, home-based interventions, and the use of assistive technology. Speech therapy conducted by trained professionals shows significant results in improving a child's speech abilities. Home-based interventions that involve parents in the therapy process have also shown positive impacts. School-based intervention involving educators and education staff at Al-Ikhsan Islamic Kindergarten. Assistive technologies such as mobile applications for language practice and augmentative and alternative communication (AAC) devices are increasingly becoming useful tools in speech delay intervention. Interpretation of Findings: These findings indicate that speech delays in children are the result of complex interactions between biological, environmental and social factors. The importance of comprehensive diagnosis and intervention tailored to the child's individual needs is emphasized. The use of a multidisciplinary approach involving physicians, speech and language pathologists, psychologists, and teachers can increase the effectiveness of interventions.

Linking Research Findings to Established Knowledge Structures. The findings of this research are in line with interactionist theory which states that language development is influenced by social interaction and the environment. However, these findings also emphasize the importance of biological and genetic factors as proposed by nativist theory. Thus, a holistic approach that integrates various theories of language development is key in understanding and overcoming speech delays in children. Providing New Theories or Modifying Existing Theories, this research proposes modifications to the interactionist theory by adding the variable family stress as an important factor that influences children's language development. In addition, this theory also expands the concept of social interaction by including the role of technology as a mediator in speech delay intervention.

Causes of Delayed Speech: Delayed speech in children can be caused by various factors, including hearing problems, developmental delays, and certain medical conditions. According to Johnson and Smith, (2004)"genetic and environmental factors also play important roles in children's speech development". Speech Delay Diagnosis: “The process of diagnosing speech delay involves a variety of tests and evaluations performed by medical professionals and therapists” (Yasin et al., 2017). This evaluation includes an audiological assessment, behavioral observation, and analysis of the child's communication skills.
Speech Therapy Intervention: "Early intervention is key to helping children with speech delays achieve optimal development" (Lieu, 2004). Intervention programs may include speech therapy, special education, and family support. Explanation: The first quote refers to the book by Johnson & Smith (M. Johnson & Smith, 2018), which discusses genetic and environmental factors in children’s speech development. The second quote refers to a book by Tesalonika et al., (2023), which explains the process of diagnosing speech delays. Gillis et al., 2022 (2022) which emphasizes the importance of early intervention in talk therapy.

CONCLUSION

This research identifies three main categories causing speech delays in children: biological factors (neurological and genetic disorders, hearing problems), environmental factors (lack of language stimulation and minimal verbal interaction), and social factors (family stress, low socioeconomic status). Effective diagnosis requires a comprehensive assessment, including medical and audiological evaluations, language development assessments, parent interviews, and direct observation. Diagnostic tools like the MacArthur-Bates Communicative Development Inventories (CDIs) and the Preschool Language Scale (PLS) are commonly used. Effective interventions include professional speech and language therapy, home-based parental involvement, assistive technology, and school-based programs. Findings suggest that speech delays result from complex interactions among biological, environmental, and social factors, necessitating a multidisciplinary approach for tailored intervention. This research supports interactionist and nativist theories of language development and proposes modifying interactionist theory to include family stress and the role of technology in intervention.

REFERENCES


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