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## Stimulation, Detection, Early Intervention of Growth and Development: A Case Study of a Child with Speech Delay



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### Abstract

Speech delay is a condition where a child's speech and language development are significantly below the milestones of other children at the same age. The delay in school aged children will impact the child's enrollment in school. The purpose of this study was to describe stimulation, detection, and intervention in children with speech delay. The research used a qualitative approach with a case study design. The research population consisted of 97 children with speech delay. The inclusion criteria were children aged 2-3 years old, willingness to participate as respondents and presence during the research. The exclusion criteria were children with hearing loss, autism, attention deficit hyperactivity disorder (ADHD) and chromosome abnormalities. The sample was chosen by using purposive sampling technique. The subject was a child aged 32 months old. The data was collected through interviews, observation, and documentation. Based on the results of the study, it can be concluded that the child is classified as a functional speech delay caused by lack of stimulation. The child was first identified by parents having speech problems at the age of 18 months. Intervention was done through speech therapy. It is recommended that parents can stimulate and monitor children's development especially at the age of 0-2 years to avoid developmental problems, especially speech delay.

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## INTRODUCTION

Speech delay describes the language development of young children who demonstrate a lag in expressive language abilities, despite possessing intact receptive skills (1). Language disorders may encompass aspects related to the structure (phonology, morphology, syntax), meaning (semantics), and the communicative function of language (pragmatics), either individually or in various combinations. Speech disorders, on the other hand, pertain to challenges in articulating specific words or sounds, as well as issues with fluency essential for effective communication. These disorders can manifest independently or coexist (2). Speech delay in children is a condition where the child's speech and language development is significantly below the milestones of children of the same age (3).

The median occurrence of speech and language delays and disorders without accompanying developmental delay, autism spectrum disorder, or intellectual disability was approximately 6%, with a range of 5% to 12%, among children aged two to five years in the United States (2). A study in India showed the prevalence of speech and language delay was 27% and the highest case occurred in children less than three years old. The significant risk factor was family history (4).

The delay in school aged children will impact the child's enrollment in school, leading to potential disruptions in the literacy development of subsequent children, such as a delayed grasp of writing concepts (5). Children who experience delays in speech development face a higher risk of encountering psychiatric issues and behavioral disorders compared to their peers who develop language skills on time. Neglecting to address these speech delays can lead to adverse effects, making children more susceptible to psychiatric problems and behavioral disorders. Various factors, such as hearing loss, limited cognitive abilities, insufficient communication, lack of interaction with parents and the environment, and parenting practices, contribute to speech delays, and each child's situation is unique. Therefore, a thorough examination of the factors causing speech delays in children is crucial to determine appropriate solutions for those aged 5 and under. Swift intervention is necessary to mitigate the negative impact on the child, preventing potential repercussions on overall development and future growth (6).

## METHODS

This research used a qualitative approach with a case study research design. Case study research is research conducted in depth with the aim of gaining a detailed understanding of a case by looking at aspects without generalizing one case to another. This research was conducted from September to November 2023 at the House of Fatima Child Center in Malang. The research population consisted of 97 children with speech delay. The inclusion criteria were children aged 2-3 years old, willingness to participate as respondents and presence during the research. The exclusion criteria were children with hearing loss, autism, attention deficit hyperactivity disorder (ADHD) and chromosome abnormalities. The sample was chosen by using purposive sampling technique. The subject was a 32 months old girl, named X.

The research began with a preliminary study to identify issues in the research area, followed by submitting an ethical clearance. This research has received ethical approval from the Faculty of Medicine, Universitas Brawijaya with number 250/EC/KEPK/08/2023. Then, researcher requesting a research permit letter from the House of Fatima Child Center and collected the data. The data were collected through interviews with parents and therapy assistant, observations during the therapy process, and gathering secondary data from documentation. Once the data were collected, data analysis was conducted. The data analysis technique in this study involved describing the details of the case and its setting.

## RESULTS

Based on the interview, it is known that X was diagnosed with speech delay by a pediatrician and has been doing speech therapy for 8 months at the House of Fatima Child Centre. There is no unfunctional of speech or hearing organs. X's father works and the mother is a housewife. X lives in a cluster and has no peers in the neighborhood. The parents applied permissive parenting style, where parents tend to allow children to do what they want without strict rules. X rarely leaves the house and only plays alone or with her brother at home. She cannot yet string simple words together, can only say one word at a time and sometimes only the end of a word such as "drink/minum" becomes "num". X has difficulty expressing language, only pointing, or pulling an adult's hand when she wants something.

### A. Stimulation

Based on the interview, X's mother understood about stimulation but admitted that she did not stimulate X before.

"...usually when I'm at home, she plays alone, watches TV or something...or play with her brother, rarely plays with me."

X is not allowed to use gadgets but sometimes follows her brother. X rarely leaves the house and has no peers. "... I do not give her a mobile phone, but sometimes she follows her brother to watch YouTube, .... because after Covid, she rarely goes out...then there is no one around the house at the same age as her."

The language development that was most visibly delayed in this case was in oral expressive language development. Based on observation, X has been able to understand receptive language. When X is given instructions such as "let's sit.", "play the puzzle", "take the toy", she understands but does not talk. X tends to be silent when spoken to and tends to point, pull her hand or cry if her wishes are not fulfilled. X has been able to mention the names of animals, fruits and colours and is able to answer "yes or no" questions as follows:

Therapy assistant: what do you want to play?

X: This (pointing)

Therapy assistant: Before we play, let us pray first.

X: raise hands (pray)

Therapy assistant: (says a prayer) ...Ameen...

X: ameen

Therapy assistant: Do you want to play finger puppets? What is this?

X: Elephant

Therapy assistant: what about this?

X: horse

Therapy assistant: what colour is this?

X: Brown

After undergoing the speech therapy process, X's mother has stimulated her at home more often such as using flash cards and inviting X to talk. When X wants something, such as a drink, X will usually just point, but now the mother asks X to say the word "drink" and X will repeat it. "... let's say she wants something, which usually she just points. Now she started saying drink. What do you want? Drink? At first, she did not want to, she was still pointing, whining, after a while she started to follow what we told her".

In this study, the factor that causes the speech delays is the lack of stimulation. Based on the results of observations and interviews, X's speech and language development problems are more influenced by external factors (environmental factors), X does not have peers in her house environment, parents rarely invite X to play together, X often watches TV and plays mobile phones with her brother but rarely interacts in two-way communication and her wishes are always fulfilled only by pointing or crying.

### B. Early detection

X's mother became aware of her daughter's delay at the age of 18 months. The mother felt that X rarely spoke and only pointed and cried if she wanted something. In contrast to her older brother, at that age he already had quite a lot of vocabularies. "...her older brother at the age of one year had already started talking a lot, and then I saw her didn't say many words, just mama, papa, that's it..."

Then, the mother took X to the growth and development clinic. X had never been taken to a Posyandu/ integrated services post or growth and development clinic to check her development before. She was usually taken to a paediatrician only for immunisation. Based on the results of the examination, the clinician concluded that X had a speech delay and was advised to attend speech therapy.

### C. Intervention

The purpose of implementing early language and speech intervention is to provide language and speech stimulus to help develop the language and speech skills of *speech delayed* children. The interventions provided to X are speech therapy and occupational therapy with a duration of 1 hour per meeting once per week. When she first joined Fatimah children centre, she often cried and did not want to learn, but now X is more comfortable with her therapy assistant and can follow the directions. X is always accompanied by her mother during therapy sessions. After each therapy session, the facilitator always communicates with X's mother to explain the learning process that has been done and how X's development is and suggests stimulus that can be given at home such as playing flash cards.

## DISCUSSION

The commonly termed speech delay or late talker refers to a delay in language acquisition that is not accompanied by disabilities or other developmental delays in cognitive or motor areas. It is important to be vigilant, as language delay can also serve as an early or secondary indicator of disorders such as Language Disorder, Social Communication Disorder, Autism Spectrum Disorder, ADHD, Intellectual Disability, or other developmental disorders (7).

Speech delay in children can be divided into two: 1) Functional speech delay, which is a condition where this disorder is relatively mild and usually occurs due to lack of stimulus or wrong parenting 2) Non-functional speech delay, which is a condition where the disorder is a result of a receptive language disorder, such as autism or ADHD (attention deficit hyperactivity disorder) experienced by the child (8).

Based on previous studies, several risk factors for speech delay included child and family factors. The child factors are gender, motor development, birth status and early language development. The family factors are family history, presence of sibling, mother's education, and socioeconomic status. Using screen media, excluding video chatting, is not recommended for children under 18 months. Exposure to specific types of media during infancy has been linked to lower language scores, although the exact connection between media usage and language development is not completely comprehended (9). Another factors that are considered capable of influencing children's language development, including the absence of models that children can imitate, low motivation in children to speak, and the lack of opportunities for children to speak (10).

Early detection of speech delay in children is very important so that intervention can be carried out as early as possible so that children have more time to catch up with their speech development (11). Children who experience speech delay can be detected based on their ability to speak slower than their peers. Examples of the characteristics of children who experience speech delay are the child's tendency to pronounce words that are not clear and precise, causing miscommunication between the child and others and the child's tendency to only give non-verbal responses to stimuli (10). The timely identification and intervention can reduce the effects of risk factors. Hence, it is crucial for speech-language pathologists to acknowledge the risk factors (9).

Early detection of developmental deviations is necessary to identify potential issues, including addressing any concerns parents may have about their child's growth and development. If potential deviations are identified, early intervention is carried out as a corrective measure, leveraging the plasticity of the child's brain to restore normal development or prevent further severity of the deviation (12). There are several therapy methods that can be employed to address speech delay issues in children. The method used depends on the type of problem being faced. The methods that can be used include: 1) Oral Motor Therapy, 2) Language Intervention Therapy, 3) Modelling Method, 4) Learning While Playing Method, 5) Behavioral Therapy Method (8).

Comprehensive and coordinated activities involving stimulation, detection, and early intervention for toddler developmental deviations are organized through partnerships among families (parents, caregivers, and other family members), the community (community health workers, community leaders, professional organizations, non-governmental organizations, etc.), and professionals (health, education, and social sectors). This collaboration aims to enhance the quality of early childhood development and prepare children for formal education (12).

## CONCLUSION

The prevalence of speech delay in children under 5 years old is below 30%. The most important factor to language developmental disparities in children is a lack of stimulation. Parental involvement is essential in providing stimulation and detecting developmental issues to facilitate prompt and accurate interventions.

## SUGGESTION

Further studies are necessary to enhance the understanding about factors association with speech delay and therapy needed. Quantitative research with large number size can provide new sight of speech delay. This study can serve as a valuable reference for future studies investigating about speech delay. By building upon the potential benefits and prevention of speech delay.

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## CONFLICTS OF INTEREST

The author states that there is no conflict of interest.

## AUTHOR CONTRIBUTION

In this research, the author contributes to doing research, start from ethical clearance, collect data by interviewing and observation, analysis the data and writing journal.

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