

A Case Study on the Influence of Palatal Conditions on Language Ability in Early Childhood

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ABSTRACT

This case study examines language development in a five-year-old child with a palatal physical abnormality, focusing on differences among receptive language, early literacy skills, and expressive language. Observational findings indicate that the child's receptive language development is age-appropriate, as shown by the ability to understand instructions, recognize vocabulary, and participate effectively in conversations. In addition, early literacy skills are well developed, reflected in the ability to recognize letters, associate sounds with symbols, and comprehend simple stories. However, the most significant area of difficulty is expressive language. This is characterized by limited vocabulary, short sentence production, difficulties in articulating certain speech sounds, and the presence of hypernasality. Although the child has undergone palatal surgery, speech function has not fully recovered, resulting in expressive language abilities that remain below age expectations. These expressive language difficulties are influenced by limitations in articulatory function, suboptimal control of airflow, restricted communication experiences, and the possibility of mild hearing impairment.

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INTRODUCTION

Early childhood refers to individuals aged 0–6 years who are in a critical period of development and therefore require appropriate educational stimulation to optimize cognitive, socio-emotional, language, and motor development. According to Piaget, children at this age are in the sensorimotor and preoperational stages, in which learning occurs through direct experience and interaction with the environment. Vygotsky emphasized that child development is strongly influenced by social interaction within the zone of proximal development, highlighting the crucial role of adults and peers. Erikson added that children are in the initiative versus guilt stage, making environmental support essential for fostering confidence and exploration. These theoretical perspectives align with Indonesia's Law No. 20 of 2003 on the National Education System, which states that early

childhood education should provide stimulation that supports both physical and psychological development.

As part of holistic development, language development is a particularly crucial aspect. During early childhood, language develops as a fundamental process for communication, thinking, and social interaction, and should be stimulated through meaningful verbal interactions within the family and early childhood education settings. Chomsky's nativist theory explains that children possess a language acquisition device that enables natural language learning, while Vygotsky emphasized the role of social interaction and adult guidance through scaffolding. Bruner further proposed that language development is supported by the language acquisition support system (LASS), referring to a communication-rich environment that facilitates language growth.

Language development in early childhood is generally divided into three main components: receptive language, expressive language, and emergent literacy. Receptive language refers to the child's ability to understand words, sentences, and instructions, allowing them to comprehend information from their environment. Expressive language involves the ability to convey thoughts, feelings, and needs through words, sentences, or nonverbal expressions. Emergent literacy includes the ability to recognize letters, symbols, and engage in early writing, serving as the foundation for later literacy skills. Bruner emphasized that stimulation through LASS supports the simultaneous development of these three language components.

In addition to social and environmental stimulation, early childhood language development is strongly influenced by the child's physical condition. Factors such as hearing health, vision, speech articulation, and oral motor development affect a child's ability to comprehend and express language. For example, children with hearing impairments may experience delays in receptive language due to difficulty perceiving sounds, while children with oral motor difficulties may encounter challenges in expressive language. Developmental theories proposed by Piaget and Vygotsky support this perspective, as language development requires coordination between cognitive processes, physical abilities, and environmental interaction. Nugroho et al. (2020) found that sensory and motor stimulation, including swallowing, chewing, and articulation exercises, positively influences children's speech abilities. Therefore, parents and educators play a vital role not only in providing language stimulation but also in ensuring that children have the physical conditions necessary for speech development.

Beyond social stimulation and physical conditions, language development in early childhood involves complex brain functions. The child's brain, particularly Broca's and Wernicke's areas, plays a critical role in language production and comprehension. Broca's area is associated with speech production and sentence structure, while Wernicke's area is responsible for understanding words and meaning. Neurolinguistic theory suggests that impairments in these areas may result in difficulties in speech production, language comprehension, or mild forms of aphasia. For instance, children with brain injuries or developmental abnormalities may experience delays in receptive and expressive language due to inefficient neural processing.

When physical abnormalities of the oral cavity occur, such as tongue disorders, cleft lip, palate abnormalities, or poor oral motor coordination, children may experience difficulties articulating words clearly, even when their language comprehension remains intact. Piaget's and Vygotsky's theories support the view that language development is not purely cognitive but also requires mature sensorimotor coordination. Kurniawan et al. (2020) reported that combined stimulation involving oral motor exercises and language training can support children with speech difficulties caused by oral structural problems or mild neurological impairments. Thus, early childhood language development requires a holistic approach that considers brain function, oral physical conditions, and environmental stimulation.

Children with abnormalities of the palate may face significant challenges in language development because the palate plays an essential role in speech articulation. This case study was conducted in an early childhood education setting and a speech therapy clinic during the early stages of child development. The palate, consisting of the hard palate (palatum durum) and soft palate (palatum molle), functions to separate the oral and nasal cavities, enabling clear speech production. Children with palatal abnormalities, such as cleft palate, experience speech difficulties due to air leakage through the nasal cavity, which affects articulation and vocabulary development. Language development in such cases is supported through speech therapy, verbal stimulation, and a communication-rich environment. According to Piaget and Vygotsky, speech impairments may delay symbolic ability, verbal communication, and social interaction. Without appropriate intervention, children are at risk of delays in both expressive and receptive language, as well as socio-emotional challenges.

METHOD

Research Design

This study employed a qualitative case study design to obtain an in-depth understanding of language development in a five-year-old boy with a palatal abnormality (palate disorder). The case study approach was selected because it enables detailed and contextual exploration of complex phenomena, particularly the relationship between structural abnormalities of the palate and children's language abilities. This design allows the researcher to examine the child's language development holistically across natural settings, including school, home, and daily social interactions. The study was conducted at an early childhood education center in Depok, Indonesia, over a one-month period, from November 1 to November 30, 2026.

Subject of the Study

The subject of this study was one male child aged five years who had been diagnosed with a palatal abnormality and had previously undergone palatal surgery. The child was enrolled in an early childhood education program and participated in regular classroom activities during the observation period. The selection of a single participant was intended

to allow an in-depth examination of individual language strengths and challenges rather than generalization to a wider population.

Data Collection Procedures

Data were collected using technique triangulation to ensure credibility and depth of information. The techniques included direct observation, semi-structured interviews, formal and informal language assessments, and analysis of medical documentation. First, direct observations were conducted to assess the child's ability to understand instructions, express ideas verbally, and participate in daily learning activities. Second, semi-structured interviews with parents were carried out to gather information regarding the child's medical history, communication experiences, and prior language development. Third, formal and informal language assessments were administered to evaluate receptive language, expressive language, and emergent literacy skills. In addition, medical documents, including records of palatal surgery and speech therapy history, were reviewed to understand the impact of previous interventions on the child's speech abilities. Source triangulation was also applied by comparing data obtained from the child, parents, and teachers to ensure consistency.

Data Analysis

All collected data were analyzed using descriptive qualitative analysis. The analysis focused on identifying patterns of language development, specific barriers encountered by the child, and internal and external factors influencing expressive language abilities. Data from observations, interviews, assessments, and medical records were systematically compared and categorized according to the three main language aspects: receptive language, expressive language, and emergent literacy. This analytical approach enabled the study to present a comprehensive description of the child's language development and to provide a foundation for formulating appropriate intervention recommendations.

Theoretical Framework and Instruments

The selection of receptive language, expressive language, and emergent literacy as the main focus of the study was grounded in language development theory proposed by Owens (2016), which distinguishes language abilities into receptive and expressive domains. Emergent literacy was based on the theory of Whitehurst and Lonigan (1998), which states that literacy development begins in early childhood through interactions with oral language and written symbols. The research instruments were developed based on Owens' (2016) language development framework and the language assessment guidelines of the American Speech-Language-Hearing Association (ASHA), ensuring that the indicators were appropriate for the language characteristics of a five-year-old child with a palatal abnormality. The instruments were designed to assess not only language outcomes but also communication processes, taking into account the anatomical conditions of the palate that may affect articulation and speech fluency

FINDING

Based on the results of the study, it was found that the child experienced a physical condition involving the palate (cleft palate), which influenced language development. Therefore, this study was conducted under the title *The Influence of Physical Conditions (Palate) on Early Childhood Language Ability*. The findings are presented according to the three main aspects examined: receptive language, emergent literacy, and expressive language.

The child demonstrated age-appropriate receptive language development. The child was able to listen to and understand spoken language delivered by adults and peers. The child followed simple to complex instructions without requiring excessive repetition. In addition, the child recognized commonly used vocabulary in daily environments. Comprehension of orally presented stories was also evident, as shown by the child's ability to answer simple questions related to story content. The child was able to distinguish word meanings and understand conversational context accurately. These findings indicate that the palatal condition did not significantly affect the child's receptive language abilities.

In addition to receptive language development, the child showed no difficulties in emergent literacy skills. The child was able to recognize letters and language symbols according to developmental expectations. The child demonstrated the ability to associate sounds with appropriate letters and showed interest in early reading and writing activities. Pre-reading skills were observed through the child's interest in storybooks and pictures. The child was also able to participate in copying letters or simple words appropriately. Comprehension of written stories read aloud by teachers or parents developed optimally. These findings indicate that the child's early literacy abilities were not hindered by the palatal condition.

However, the child exhibited significant difficulties in expressive language development, particularly in phonological and articulation aspects. Consonant sounds that require tongue contact with the palate, such as /k/, /g/, /s/, /c/, and /t/, were difficult to produce and were often substituted with other sounds or produced with hypernasality due to air escaping through the nasal cavity. As a result, vocabulary use and the ability to produce longer sentences were limited, leading to reduced speech intelligibility. The child experienced difficulty expressing ideas, feelings, and needs verbally. Utterances were often unclear due to limitations in articulating specific sounds. The child tended to use a limited range of vocabulary and short sentences. In some situations, verbal communication was replaced with gestures or pointing to convey meaning. These patterns were consistently observed during the data collection period.

Table 1. Summary of Language Development Findings Based on ASHA Indicators

Language Aspect	ASHA-Based Indicators	Observed Findings
Receptive Language	Understanding spoken instructions	The child followed simple to complex instructions without excessive repetition
	Vocabulary comprehension	The child recognized commonly used vocabulary in daily contexts
	Comprehension of oral narratives	The child answered simple questions related to orally presented stories
	Understanding conversational context	The child distinguished word meanings and understood conversational contexts appropriately
Emergent Literacy	Letter recognition	The child identified letters according to age-appropriate expectations
	Sound–symbol correspondence	The child associated sounds with corresponding letters accurately
	Interest in books and print	The child showed interest in storybooks and visual texts
	Early writing skills	The child copied letters and simple words appropriately
	Listening comprehension of written texts	The child demonstrated understanding of stories read aloud by adults
Expressive Language	Articulation of consonant sounds	The child had difficulty producing consonants requiring palatal contact (/k/, /g/, /s/, /c/, /t/)
	Speech intelligibility	Speech was frequently unclear due to articulation difficulties and hypernasality
	Vocabulary use	Expressive vocabulary was limited
	Sentence production	The child primarily used short and simple sentences
	Expression of ideas and needs	The child experienced difficulty expressing ideas, feelings, and needs verbally
	Use of alternative communication	Gestures and pointing were used to supplement verbal communication

DISCUSSION

According to language development theory, children at the age of five are in the late preschool language stage, during which receptive language, expressive language, and emergent literacy are expected to develop to a relatively mature level. From a receptive perspective, behaviorist and cognitive theories (Skinner; Piaget) indicate that five-year-old children are generally able to comprehend complex instructions, compound sentences, and

simple narratives. In this case, the child with a palatal structural abnormality demonstrated receptive language abilities that were consistent with developmental expectations, indicating that language comprehension was not significantly impaired. This finding is consistent with nativist theory (Chomsky), which proposes that the capacity to understand linguistic structures is largely innate and does not rely solely on speech sound production. Thus, the structural abnormality of the palate did not interfere with the child's receptive language system.

In terms of emergent literacy, early literacy development theory suggests that children aged five typically enter the emergent literacy stage, characterized by letter recognition, sound-symbol correspondence, and interest in early reading and writing activities. The child in this study did not exhibit difficulties in literacy-related skills, indicating that the cognitive, visual, and auditory processes supporting literacy development were age appropriate. This finding aligns with Piaget's constructivist theory, which posits that children in the preoperational stage are capable of using symbols, including letters and images, to represent meaning. Therefore, the palatal abnormality did not appear to directly affect emergent literacy abilities, as these skills are more strongly influenced by cognitive development and learning experiences than by the structure of the speech apparatus.

In contrast, expressive language development presented the most prominent difficulty. According to expressive language development theory, five-year-old children are expected to produce complete sentences with clear structure, diverse vocabulary, and speech that is generally intelligible to listeners. In this case, the child demonstrated expressive language impairment characterized by limited vocabulary, short sentence production, and unclear articulation. This finding can be explained through speech motor theories, which emphasize that speech production depends on the coordination and structural integrity of the speech organs. Palatal abnormalities restrict airflow control and articulation, resulting in delayed verbal expression. In addition, from an interactionist perspective (Vygotsky), limited verbal expression may reduce the frequency and quality of social interaction and linguistic feedback, which in turn slows expressive language development.

The most significant difficulty observed in the child with a palatal abnormality was expressive language delay that did not align with developmental expectations for a five-year-old child. At this age, children are typically able to express ideas, emotions, and needs using complete sentences with relatively clear articulation. However, the child continued to experience difficulty producing certain speech sounds, demonstrated limited vocabulary, and relied primarily on short or incomplete utterances. This discrepancy between expressive language ability and age-related developmental standards indicates a substantial expressive language delay. These findings are consistent with Owens (2016), who reported that receptive language skills often develop more strongly than expressive language skills in children with oral structural disorders. The palatal abnormality emerged as a primary factor limiting sound production and airflow regulation during speech, resulting in suboptimal verbal communication despite age-appropriate receptive and literacy skills.

The expressive language difficulties observed in this case were influenced by multiple interrelated factors. The palatal structural abnormality interfered with articulatory function, making it difficult for the child to consistently produce certain consonant sounds accurately. Although the child had undergone palatal surgery, speech function had not fully recovered, and articulation remained compromised. In addition, inadequate control of airflow during speech contributed to reduced intelligibility and the presence of hypernasality. Limited early communicative experiences further reduced opportunities for speech practice. Moreover, the possibility of mild hearing impairment, which frequently accompanies palatal conditions due to middle ear problems, may have affected speech sound perception accuracy. Collectively, these factors contributed to delayed expressive language development compared to age-matched peers.

Limitations and Implications

This study was limited by its single-case design and short observation period, which restrict the generalizability of the findings. The absence of standardized quantitative speech measures and audiological assessments may also have limited the precision of language performance evaluation. Future research should involve larger samples, longitudinal designs, and multidisciplinary assessments to further explore the relationship between palatal conditions and language development.

Practically, the findings highlight the importance of early and continuous speech-language intervention for children with palatal abnormalities, even after surgical repair. Integrated collaboration between speech-language therapists, educators, and families is essential to support expressive language development and enhance communicative participation in educational and social contexts.

CONCLUSION

Based on the findings of this case study, it can be concluded that a 5-year-old child with a palatal anomaly demonstrates an uneven profile of language development. The child shows age-appropriate receptive language and early literacy skills, indicating adequate abilities in understanding spoken language and readiness for early literacy learning. In contrast, expressive language development remains the most significantly delayed area, falling below age expectations. Although the child has undergone palatal surgery, residual limitations in articulatory function and airflow control continue to affect speech clarity and verbal expression. These findings suggest that structural correction alone is insufficient to fully address functional speech and language challenges. Therefore, continuous speech-language intervention is strongly recommended to support expressive language development. Future research should involve longitudinal studies with larger samples to examine the long-term impact of multidisciplinary interventions on language outcomes in children with palatal conditions.

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