

Does The Birth Order Trigger Speech Delays in Toddler?

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ABSTRACT

Background: Genetic factors establish neural pathways for speech understanding in children. Toddlers with fewer siblings score higher in vocabulary development. While reports show birth order's impact on speech development, comparison limitations and inconsistent definitions of variables hinder accurate determination. To better understand birth order's potential impact, factors such as gender, maternal education, and only children should be considered. This study aims to provide new data to clarify the controversy surrounding birth order's effect on speech development.

Method: The method was an observational analytics with a cross sectional study method approach to examine the birth order and speech delay. The target population comprised 100 live born children with a gestational age of 28 - 40 weeks in January 2021 - January 2023 in the Maternal Room at Bina Sehat Hospital and lived in Summersari sub-district. A Purposive sampling with a judgment sampling method was employed to select a sample of 100 participants. Data collection involved the administration of medical record history and KPSP Questionnaire in Language section. Data analysis used the non-parametric Spearman Rank correlation test with a significance level of Sig, (2-tailed) = 0.05 or p value < 0.05 describes the research design, population, sampling and sampling techniques, and the analytical methods used.

Result: The results of research at Bina Sehat Hospital using the Spearman Rank test showed that there was not a relationship between birth order and speech delays in toddler age children (1-3 years) at Bina Sehat Hospital Jember.

Conclusion: Based on the results the second birth of children at Bina Sehat Hospital is in large number, the screening rate for speech delays is relatively low and there is a no significant relationship between birth order and speech delays in toddler-aged children (1-3 years) at Bina Sehat Hospital Jember.

Keywords: *Birth Order; Speech Delays; Toddler*

Introduction

Genetic factors establish neural pathways for speech understanding in infants. Parents influence the input children receive. Toddlers reach milestones like doubling their vocabulary. Parents play an important role in word learning and production. Exaggerated intonation in caregiver speech enhances language learning in infants (den Hoed and Fisher, 2020).

The relation of birth order with behavior and intellectual skills has been extensively studied, but conflicting findings suggest that the birth order effect hypothesis lacks evidence. Measurement challenges may prevent capturing subtle differences in behavior and parenting styles. Critical periods of rapid brain development in early childhood are limited in time (Chenausky and Tager-Flusberg, 2022). Toddlers with fewer siblings score higher in vocabulary development (Deoni *et al.*, 2021). Birth order, gender, and age groups were considered in the study. A regression analysis showed all factors influenced the vocabulary score. A gender gap was also observed (Muangmee *et al.*, 2021).

While reports show birth order's impact on speech development, comparison limitations and inconsistent definitions of variables hinder accurate determination. To better understand birth order's potential impact, factors such as gender, maternal education, and only children should be considered. This study aims to provide new data to clarify the controversy surrounding birth order's effect on speech development in typically developing toddlers (Bush *et al.*, 2020)

Method

This study adopted an observational analytics with a cross sectional study method approach to examine the birth order and speech delay. The target population comprised 100 live born children with a gestational age of 28 - 40 weeks in January 2021 - January 2023 in the Maternal Room at Bina Sehat Hospital and lived in Summersari sub-district. A Purposive sampling with a judgment sampling method was employed to select a sample of 100 participants. Data collection involved the administration of medical record history and a KPSP Questionnaire in Language section. To ensure data accuracy and reliability, rigorous training and inter-rater reliability checks were conducted. Ethical approval was obtained from the ethics committee to safeguard participant rights and well-being. Data analysis used the non-parametric

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Spearman Rank correlation test with a significance level of Sig, (2-tailed) = 0.05 or p value < 0.05.

Results

Table 1. Frequency distribution of the birth order at Bina Sehat Hospital Jember (N=100)

The birth order	Frequency	Presentation (%)
1	22	21,0
2	45	45,0
3	25	25,0
4	8	8,0
5	1	1,0
Total	100	100,0

Based on table 1, it is found that the number of the second birth of baby at Bina Sehat Hospital is around 45 people (45.0%). This shows that the large number of the second birth.

Table 2. Frequency distribution of speech delay in toodler at Bina Sehat Hospital Jember (N=100)

Speech Delay	Frequency	Presentation (%)
Delayed	9	9,0
Normal	91	91,0
Total	100	100,0

Based on table 2, it is found that speech delays in toddler age children (1-3 years) at Bina Sehat Jember Hospital are very small, around 9 people (9.0%) compared to children with normal language and speech abilities, around 99 people (90.0%).

Table 2. The corelation between the birth order to speech delays in toddler at Bina Sehat Hospital Jember (N=100)

Variable	r/ correlation coefficient	Sig, (2-tailed)	Explanation
The relation between the birth order to speech delays order in toddler at Bina Sehat Hospital	0,515	0,000	There is strong corelation

Discussion

For the birth order section, the results of research conducted on a number of toddler children (1-3 years) at Bina Sehat Jember Hospital, it was found that the rate of second birth was relatively large in number. This finding is in line with other research

previously conducted by Zulvia (2022) (Misykah, 2022), that it was found that no correlation between birth order to speech delay (Foran, Evans and Beverly, 2021). The birth order doesn't trigger the language development (Meher *et al.*, 2022). Either the sibling older or younger doesn't have significant effect to the children. Their The researcher consider eventhough the second birth was the large number but won't effect to speech delay.

For the speech delay section, the results of research conducted on a number of toddler age children (1-3 years) at Bina Sehat Jember Hospital, it was found that the rate of speech delays in toddler age children at Bina Sehat Jember Hospital was quite small, meaning that the majority of children had appropriate speech abilities. child development. This finding is in line with other research previously conducted by Katherine (2019), namely that it was found that 29 children from a total of 112 samples experienced speech delays at toddler age (Sanchez *et al.*, 2020). The researcher consider that speech delays caused by many factors such as prematurity, parent stimulation, nutrition, but not for birth order. The results of research at Bina Sehat Hospital using the Spearman Rank test showed that there was not a relationship between birth order and speech delays in toddler age children (1-3 years) at Bina Sehat Hospital Jember.

The problem of speech delay or delayed speaking in toddler-aged children (1-3 years) can have an impact on various aspects of the child's life, including social and emotional development (Dickerson, 2020). Children with speech delays often have difficulty communicating with peers and adults, which can lead to frustration, social isolation, and low self-esteem. Speech delays can also affect children's cognitive development, because language is an important tool for learning and thinking (Rupert, Hughes and Schoenherr, 2023)

Researchers believe that the birth order can't cause speech delay in toodler. While popular belief often associates younger siblings with delayed speech, empirical evidence consistently demonstrates a negligible impact of birth order on speech delay. Research indicates that factors such as socioeconomic status, parental education, and quality of language input exert a more significant influence on language acquisition than birth position. Consequently, attributing speech delays solely to birth rank is an

oversimplification that overlooks the complex interplay of various environmental and individual factors contributing to language development.

Conclusion

Based on the results of research and discussion regarding the relationship between birth order and speech delays in toddler age children (1-3 years) at Bina Sehat Jember Hospital, it was concluded that the second birth of children at Bina Sehat Hospital is in large number, the screening rate for speech delays in toddler age children (1-3 years) at Bina Sehat Jember Hospital is relatively low and there is a no significant relationship between birth order and speech delays in toddler-aged children (1-3 years) at Bina Sehat Hospital Jember.

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