

## The Effect of Pacifier Use on Articulation Ability in Children Aged 4-6 Years in Sri Juwita Hanum Mojosongo Kindergarten

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### ABSTRACT

**Background:** In today's era, the use of pacifiers is common in infants and toddlers aged 4-6 years. However, the use of a pacifier itself remains a topic of debate. This study aims to provide an analysis and overview of the effect of pacifier use on articulation ability in children aged 4-6 years.

**Method:** This study employs a quantitative approach with a cross-sectional research design, utilizing purposive sampling techniques, and includes 37 respondents. In this study, the data will be analyzed univariately and bivariately, using Kendall's Tau statistical test.

**Result:** The results of Kendall's Tau statistical test analysis showed a p-value of 0.383 ( $p > 0.05$ ), a correlation coefficient value of -0.145, which falls into the very weak category, and a negative correlation direction.

**Conclusion:** There is no effect of pacifier use on articulation ability in children aged 4-6 years at Sri Juwita Hanum Kindergarten; however, it falls into the very weak and opposite category.

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## INTRODUCTION

Articulation is pronunciation, word pronunciation, and changes in the cavities and spaces within the vocal tract to produce speech sounds (KBBI, 2022). A child is considered to be speaking when they can produce various sounds with their mouths, using articulation or words to convey something in communication. Each child's speaking ability varies, but it can be compared to that of children of the same age in general. Some causes of speech disorders or delays include hearing loss, speech organ abnormalities, intellectual disability, genetic or chromosomal abnormalities, autism, selective mutism, functional delays, receptive aphasia, and environmental deprivation (Yulianda, 2019). Poorly understood articulation in children aged 4-6 should not occur. At that age, children should be able to pronounce words well and be understood by parents and others. This becomes a serious problem if not addressed further, considering that children aged 4-6 are entering the preschool phase. Potts and Mandleco (2012), as cited in Saputra et al. (2021), found that a child over 3 years

old should have a vocabulary of 500 words. The language skills of a 3-year-old child include being able to identify two activities, name six body parts, understand two adjectives, and point to and name four pictures. The child's language development, as described in this study, is appropriate for his age. The child is 3-4 years old, which is considered preschool age. At this age, the child is able to articulate and identify two activities. Furthermore, the child should be able to name one to four colors.

Whitmarsh (2008), as cited in Strutt et al. (2020), notes that parents and professionals also have differing opinions on whether pacifier use should be recommended. It has even been reported that some speech therapists speculate that pacifier use could be a contributing factor to many of the speech and/or language problems they treat daily. Pacifier use is best identified as a potential risk factor, rather than a cause of speech delay, and is associated with bottle-feeding and thumb-sucking (Fox et al., 2002). Pacifier use in children aged 4-6 years affects their speech development. Several factors must be considered when using a pacifier. Several developmental disorders, including speech problems, can arise if left untreated, and these effects significantly impact daily life. Education is needed for parents of children aged 4-6 years who still use pacifiers.

The role of parents in preventing these impacts on children's development is crucial, supporting the importance of eliminating the habit of using pacifiers at this age. Time management means organizing time appropriately based on existing desires and needs (KBBI, 2016). Effective time management is crucial for mothers to optimize their children's development. By managing pacifier use, mothers demonstrate concern for their children's growth and development, ensuring they reach their age-appropriate milestones, especially during the preschool stage.

## METHOD

This research is a quantitative study using a correlational method and a cross-sectional design. According to Ibrahim et al. (2018), correlational research is a study that aims to determine the relationship and level of relationship between two or more variables without any attempt to influence the variables, thus eliminating variable manipulation. The population used in this study was 60 children aged 4-6 years at Sri Juwita Hanum Kindergarten, Mojosongo. Sampling was obtained using the Slovin formula, resulting in a sample of 37 children. In this study, the researcher took the sample using a purposive sampling technique with predetermined inclusion and exclusion criteria. In this study, the researcher used two instruments: a questionnaire regarding pacifier use and an articulation test.

## RESULTS AND DISCUSSION

This research was conducted at Sri Juwita Hanum Mojosongo Kindergarten located at JL. Let. Jend. Sutoyo 113 Mojosongo, Jebres, Surakarta. This school consists of 3 learning groups, namely KB, TK A, and TK B. The age of KB class students is 3 years old, while the age of TK A class ranges from 4-5 years old, and the age of TK B class ranges from 5-6 years old. Learning takes place on Monday through Friday, from 07:00 to 11:00 WIB.

### 1. Univariate Analysis

#### a. Frequency Distribution by Gender

This data was obtained from questions completed by parents on a questionnaire provided by the researcher. The following table shows the frequency distribution by gender at Sri Juwita Hanum Kindergarten, Surakarta.

Table 1. Frequency Distribution by Gender

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male   | 21        | 56,8%          |
| Female | 16        | 43,2%          |
| Total  | 37        | 100%           |

Based on Table 1, the results regarding the description of the respondents' gender indicate that of the 37 students, 21 students, or 56.8%, are male, and 16 students, or 43.2%, are female.

**b. Age Frequency Distribution**

This data was obtained from the questionnaires completed by the parents, provided by the researchers. The following table shows the frequency distribution of respondents' ages at Sri Juwita Hanum Kindergarten in Surakarta.

Table 2. Frequency Distribution by Respondent Age

| Age   | Frequency | Percentage (%) |
|-------|-----------|----------------|
| 4     | 12        | 32,4%          |
| 5     | 12        | 32,4%          |
| 6     | 13        | 35,1%          |
| Total | 37        | 100%           |

Based on Table 2, the results regarding the respondents' ages are as follows: 37 students, or 32.4%, are 4 years old, 12 students, or 32.4%, are 5 years old, and 13 students, or 35.1%, are 6 years old.

**c. Frequency Distribution of Pacifier Use**

This data was obtained from questions completed by parents on a questionnaire provided by the researcher. The following table shows the frequency distribution of pacifier use at Sri Juwita Hanum Kindergarten, Surakarta.

Table 3. Frequency Distribution of Pacifier Use

| Pacifier Use         | Frequency | Percentage (%) |
|----------------------|-----------|----------------|
| Using a Pacifier     | 27        | 73%            |
| Not Using a Pacifier | 10        | 27%            |
| Total                | 37        | 100%           |

Based on Table 3, the results regarding the description of pacifier use indicate that 37 students, or 73%, use pacifiers, while 10 students, or 27%, do not use pacifiers.

**d. Distribution of Articulation Frequency**

This data was obtained from the results of an articulation test administered by researchers to students. The following table shows the frequency distribution of articulation use at Sri Juwita Hanum Kindergarten in Surakarta.

Table 4. Frequency Distribution Based on Articulation

| Articulation Skills | Frequency | Percentage (%) |
|---------------------|-----------|----------------|
| Good                | 35        | 94,6%          |
| Poor                | 2         | 5,4%           |
| Total               | 37        | 100%           |

Based on Table 4, the results regarding the description of articulation ability indicate that out of 37 students, 35 students, or 94.6%, have articulation ability in the good category, while 2 students, or 5.4%, have articulation ability in the poor category.

## 2. Bivariate Analysis

A bivariate analysis was conducted to determine the effect of pacifier use on the articulation skills of children aged 4-6 years at Sri Juwita Hanum Kindergarten. The independent variable in this study was pacifier use, and the dependent variable was articulation ability. The data used for

the independent variable were nominal, while the dependent variable was ordinal. The number of respondents in this study was 37, which is more than 30. Therefore, the statistical test used in this study was Kendall's Tau. The following is Table 4.5, which provides information from the analysis of the effect of pacifier use on articulation skills in children aged 4-6 years at Sri Juwita Hanum Kindergarten, Surakarta.

Table 5. Results of Kendall's Tau Analysis of the Effect of Pacifier Use on Articulation Skills in Children Aged 4-6 Years at Sri Juwita Hanum Kindergarten

|               |                      | Pacifier Use            | Articulation Ability |
|---------------|----------------------|-------------------------|----------------------|
|               |                      | Correlation Coefficient |                      |
| Kendall's Tau | Pacifier Use         | 1.000                   | -.145                |
|               |                      | Sig. (2-tailed)         | .383                 |
|               |                      | N                       | 37                   |
|               | Articulation Ability | -.145                   | 1.000                |
|               |                      | Correlation Coefficient |                      |
|               |                      | Sig. (2-tailed)         | .383                 |
|               |                      | N                       | 37                   |

Based on Table 5, the results obtained are a p-value of 0.383, indicating that the p-value is greater than 0.05, so H0 is accepted, and H1 is rejected, meaning there is no effect of pacifier use on children's articulation abilities. The correlation strength in this study is -0.145, indicating a very weak correlation with a negative direction.

This study aims to determine whether pacifier use affects articulation skills in children aged 4-6 years at Sri Juwita Hanum Kindergarten. Data collection in this study was conducted by administering a questionnaire to parents regarding pacifier use and conducting an articulation test on 37 students at Sri Juwita Hanum Kindergarten. The independent variable in this study was pacifier use, and the dependent variable was articulation ability. In this study, the statistical test used was Kendall's Tau test because the independent variable consisted of nominal data and the dependent variable consisted of ordinal data. Based on the data processing results presented, the following interpretations of the effect of pacifier use on articulation skills in children aged 4-6 years were obtained:

1. The frequency distribution of pacifier use at Sri Juwita Hanum Kindergarten shows a higher rate of pacifier use compared to non-pacifier use. Of the 37 respondents, 27 students (73%) used pacifiers, while 10 students (27%) did not. This finding aligns with research conducted by Joyner (2016), which involved 83 mothers and found that 72.3% of infants used pacifiers, citing comfort and reassurance as the primary reasons. Nasriani (2020) argued that pacifier use is beneficial because it soothes and comforts babies in certain situations, such as the urge to sleep, pain during teething, separation from their mother, decreased thumb sucking, and a lower incidence of sudden infant death syndrome (SIDS).
2. The distribution of articulation frequency at Sri Juwita Hanum Kindergarten shows that 35 students (94.6%) had good articulation, while 2 students (5.4%) had poor articulation. The articulation test consists of 50 picture items. Respondents who answer correctly receive a score of 1, while those who fail to answer correctly receive a score of 0. A respondent's articulation

ability is considered good if the total score is between 26 and 50. However, if the total score is between 0 and 25, the respondent's articulation ability is considered poor.

3. There is no effect of pacifier use on articulation ability in children aged 4-6 years at Sri Juwita Hanum Kindergarten, Mojosongo, with a p-value of 0.383, indicating a p-value  $> 0.05$ . The resulting correlation coefficient is -0.145, indicating a very weak and negative correlation. A negative correlation means that as the value of one variable increases, the value of the other variable decreases, and vice versa. Based on the results of research conducted by Anisa (2014) cited in Pratiwi (2018), babies who are given pacifiers are at risk of experiencing speech development disorders, and breastfeeding from a bottle will affect normal orofacial growth. The process of sucking on a bottle can put abnormal pressure on the oral cavity, specifically the lips, tongue, dental arches, and palate, which can ultimately affect the development of the muscles in the mouth, face, and palate. As a result, the coordination of the lips, oral cavity, tongue, and facial muscles is at risk of being disrupted, thus affecting the development and ability to speak in babies. One of them is that breastfeeding from a bottle can increase the risk of speech articulation disorders and language development in children.

Meanwhile, according to Schmid et al. (2018), the prolonged use of pacifiers can cause delays in the maturation of oral function. A study conducted by Wambach (2016) found that in 66% of the samples taken from the Mexican region, most women exclusively breastfed, with a few using pacifiers due to insufficient milk production. This is done because it is natural for women to give life and also provide the best food for their babies. Breastfeeding is ultimately a woman's decision, but it is influenced by tradition, guidance, encouragement, and the fact that providing breast milk through the nipple is considered better than using a pacifier.

## CONCLUSION

Based on the results of research that has been conducted regarding the effect of pacifier use on articulation ability in children aged 4-6 years at Sri Juwita Hanum Mojosongo Kindergarten, it can be concluded that: In the description of pacifier use with 37 respondents, there are 27 students (73%) using pacifiers and 10 students (27%) not using pacifiers. In the description of articulation ability, 35 students (94.6%) are categorized as having good articulation, while 2 students (5.4%) are categorized as having poor articulation. Based on the data analysis results, the p-value is 0.383, indicating that pacifier use has no effect on articulation ability in children aged 4-6 years at Sri Juwita Hanum Mojosongo Kindergarten. However, the r-value is -0.145, indicating that the strength of the correlation falls into the very weak category and has a negative direction. This means that the greater the level of pacifier use, the lower the level of articulation ability, and vice versa.

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