

Difference of The Number of Carious Mandibular Permanent First Molars In Deaf and Non-Deaf Children In Kabupaten JEMBER

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ABSTRACT

Background: health condition in children has remarkable effect on oral health. Auditory limitation in deaf children makes them obtain less information, including information of oral and dental health. Most individuals with deafness have poor oral hygiene compared to that in normal children, making them more vulnerable to caries, particularly on mandibular permanent first molars, since these teeth erupted first, so that they have the longest presence within mouth. **Objective:** to identify the difference of the number of carious mandibular permanent first molars in deaf and non-deaf children.

Methods: analytic observational study using cross-sectional approach from May to June 2009. Population comprised deaf and non-deaf students. Samples were taken using purposive sampling, resulting in 112 samples, each group comprised 56 samples. **Materials:** *nierbecken*, *sonde*, oral mirror, *pinset*, *petri dish*, 70% alcohol, *cotton roll*, *cotton pelet*, and aquadest. Data analysis was done using Chi-Square test. **Result:** The number of carious mandibular permanent first molars in deafness group was 24 teeth, while that in non-deafness group was 13 teeth. Chi-Square test revealed difference in the number of carious mandibular permanent first molars in children with deafness and non-deafness. **Conclusion:** There is difference in the number of carious mandibular permanent first molars in deaf and non-deaf children.

Key words: *caries, mandibular permanent first molar*

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INTRODUCTION

Children are group with the highest susceptibility to dental caries.¹ Caries prevalence is continuously increasing along with age. 20% of children of 6 years old have already had dental caries in their permanent teeth, and this percentage increases to 60% at the age of 8 years, 85% in 10 years, and 90% in 12 years.²

Mandibular permanent first molars are permanent teeth, the first teeth that are erupting in age 6-7 years. Therefore, these teeth have the longest existence within oral cavity, so that their susceptibility to caries is higher than that in other permanent teeth.³ Caries in mandibular permanent first molars in elementary school children occurs more frequently than caries in maxillar permanent first molars.⁴

Health condition in children has remarkable effect on oral cavity condition. Most individuals with this disability have poor oral hygiene compared to that in normal children.⁵ Dental caries in mentally retarded children is usually even worse, so that the incidence of dental caries in these children is higher than that in normal.⁶ Debris index, calculus, oral hygiene and DMF-T are higher in blind children than those in non-blind children.⁷

One of physical disabilities less frequently studied up to the moment is deafness. Deafness is a condition of hearing

loss with the result that an individual becomes unable to perceive various stimulations through his auditory sense.⁸ Deafness is one of physical abnormalities related to auditory reduction that may inhibit the children's speech and language development.⁹

The problem addressed in this study was the difference of the number of carious mandibular permanent first molars in deaf and non-deaf children in Kabupaten Jember.

MATERIAL METHODS

This study was analytic observational using cross-sectional approach. The study was performed at Sekolah Luar Biasa Taman Pendidikan dan Asuhan Kaliwates, Sekolah Luar Biasa Taman Pendidikan dan Asuhan II Desa Bintoro – Patrang, Sekolah Dasar Luar Biasa Patrang, Sekolah Luar Biasa Balung and several other elementary schools around the area.

This study was performed from May to June 2009. The population comprised deaf students in Taman Pendidikan dan Asuhan II Desa Bintoro- Patrang, students of elementary school Sekolah Dasar Luar Biasa Patrang, Taman Pendidikan dan Asuhan Sekolah Luar Biasa Kaliwates, Sekolah Luar Biasa Balung, aged 6 to 12 years, and non-deaf students aged 6 to 12 years from several elementary schools in Bintoro, Bintoro, Patrang, Kaliwates, and Balung.

Samples were taken using purposive sampling, revealing 112 samples, for deaf and non-deaf group, each comprising 56 samples. Materials were *nierbecken, sonde, oral mirror, pinset, petridish, 70% alcohol, cotton roll, cotton pellet*, and aquadest. Data analysis was done using Chi-Square test.

RESULT AND DISCUSSION

The result of this study on the difference of carious mandibular first molar in deaf and non-deaf children can be seen in Table 1.

Table 1. The number of carious mandibular permanent first molar in deaf and non-deaf children in Kabupaten Jember

Groups	Number of carious mandibular permanent fist molars
Deaf	24 teeth
Non-deaf	13 teeth

Table 1 shows that the number of carious mandibular permanent first molar in deaf children was 24 teeth, while that in non-deaf children was 13 teeth. Deaf group had higher number of carious mandibular permanent first molars than non-deaf group. Teeth caries in mentally retarded children is generally worse, so that the incidence of dental caries in these children is higher than that in normal.⁶

Table 2. Chi-Square test to identify the difference in the number of carious mandibular permanent first molar in deaf and non-deaf children in Kabupaten Jember

Chi-Square Tests	
Variable	P-Value
deafness*caries (Continuity Correction)	0.045

The result of Chi-Square test revealed p value = 0.045, which was less than $\alpha(0.05)$. This indicated that there was difference in the

number of carious mandibular permanent first molars in deaf and non-deaf children in Kabupaten Jember.

The prevalence and incidence of dental caries in mentally retarded patients has more-than-average values compared to those in normal individuals,¹⁰ because the prevalence and incidence of dental caries in individuals with intellectual shortcomings can be measured based on their intellectual level.¹¹ There is difference in oral hygiene and dental caries between blind and non-blind children aged 12 and 15 years.⁷ These statements support the result of study performed by the authors in subjects with deaf samples, in which there was difference in carious mandibular permanent first molars in deaf and non-deaf children aged 6 to 12 years in Kabupaten Jember.

Oral health is an integral part of overall health, oral cavity plays a vital role in the life of human beings, through functions like mastication, esthetics, phonetics, communication, emotional expressions. It is highly essential to safe guard oral health of all children from childhood otherwise poor oral health will lead to various dental diseases like dental caries, periodontal diseases which adversely affects the overall health¹²

Dental care is the most common unmet health care need of disabled children.¹³ Children and adolescents with disabilities appear to have poorer oral health than their non disabled counterparts.¹⁴

Limited auditory in deaf children has lead to less acquired information, including information on dental and oral health. Moreover, not less of these children brush their teeth erroneously due to minimum information they obtained, which resulted in poor oral and dental hygiene in these children.⁹ Other factors affecting the level of dental caries, individual or public health status, including oral and dental health, are heredity, environment (physical, biological, and social), behavior, and health care. The factor of behavior holds an important role in affecting dental and oral health status, while behavior is affected by dental health education.¹⁵

Caries incidence in individuals is affected by four interrelated triggering factors, i.e., microorganisms, host (dental or dental surface condition), carbohydrate (cariogenic diet), and time. High number of microorganisms in oral cavity, as well as poor dental position and condition, may enhance the time of caries if carbohydrate-containing diet pattern is uncontrolled.¹⁶

CONCLUSION

There is difference in carious mandibular permanent first molars in deaf and non-deaf children in Kabupaten Jember.

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