

THE RELATIONSHIP BETWEEN SALIVA pH AND DENTAL CARIES STATUS AMONG PRESCHOOL CHILDREN IN SLEMAN DISTRICT 2015

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ABSTRACT

Background: Dental caries is a major dental and oral health problem worldwide with a very high prevalence of morbidity. Dental caries in preschool children is a disease which is extremely destructive; thus, this impacts on the growth and development of the permanent teeth. The prevalence in children aged 2-4 years in countries has reached 18%, while the prevalence of caries in children aged 3-6 years in the city of Yogyakarta has reached 84.1%. Dental caries is a multifactorial disease, among others, influenced by host factors, agent, oral environment, socioeconomic status, environment, culture, demographics and behavior. The objective of this study was to determine the association between saliva pH and dental caries status in preschool children in Sleman District.

Methods: This was an observational using a case-control design. Subjects were 120 children, 60 cases and 60 controls, aged 4-6 years, who attended kindergarten (TK) in Sleman, and selected using simple random sampling. The variables studied were saliva pH and dental caries status. The saliva pH was measured using pH digital meter (Hanna), and dental caries status measured using the dmf-s index. Data analysis used simple logistic regression.



Result: The result showed that pH of saliva was associated with dental caries status in preschool children ($p=0,004$, $OR=4,094$, $95\% CI= 1,583 - 10,587$). The value of Population Attributable Risk (PAR) was 40 %.

Table 1. The Characteristic of Respondents

| Characteristic | Case | | Control | | Total | | P value |
|----------------|------|-------|---------|-------|-------|-------|---------|
| | n | % | n | % | n | % | |
| Sex | | | | | | | |
| Male | 33 | 54,17 | 39 | 53,11 | 72 | 58,75 | 0,075 |
| Female | 27 | 45,83 | 21 | 46,89 | 48 | 46,25 | |
| Total | 60 | 100 | 60 | 100 | 120 | 100 | |
| Age | | | | | | | |
| 4 years | 5 | 8,11 | 7 | 11,63 | 12 | 10,00 | 0,465 |
| 5 years | 32 | 54,05 | 28 | 46,51 | 60 | 50,00 | |
| 6 years | 23 | 37,84 | 25 | 41,86 | 48 | 40,00 | |
| Total | 60 | 100 | 60 | 100 | 120 | 100 | |

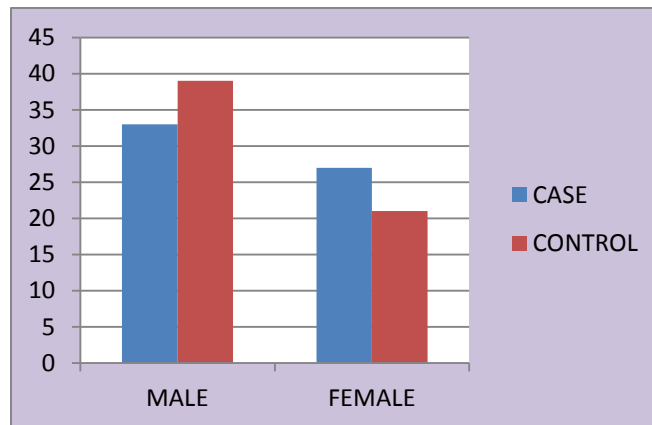


Fig.1. The Proportion of Sex by Case

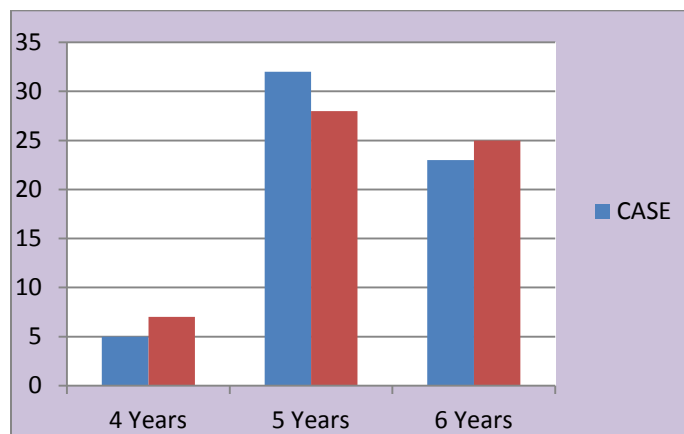


Fig.2. The Proportion of Age by Case

Table 2. Results of Bivariate Analysis

| Variable | Case | | Control | | Total | | OR | 95 % CI | P |
|------------------|------|-------|---------|-------|-------|-------|-------|--------------|-------|
| | N | % | n | % | n | % | | | |
| Saliva pH | | | | | | | | | |
| Low | 25 | 41,46 | 15 | 25,64 | 40 | 33,75 | 4,094 | 1,583-10,587 | 0,003 |
| High | 35 | 58,54 | 45 | 74,36 | 80 | 66,25 | | | |
| | 60 | 100 | 60 | 100 | 120 | 100 | | | |

Conclusions: The pH of saliva was associated with dental caries status in preschool children, children with lower saliva pH have 4 times greater risk of suffering dental caries than children with higher saliva pH. Fourty percent of dental caries in preschool children could be prevented by keep the salivary pH in normal condition.

Keywords: *Dental caries in preschool children, risk factor and pH saliva*

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