

Association Between Pacifier Use and Early Childhood Caries

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PURPOSE

- To investigate the possible associations between pacifier use and early childhood caries (ECC) in pediatric patients at BronxCare Health System Pediatric Dental Department.
- Assess factors affecting such association

INTRODUCTION

- Dental decay still remains one of the most common chronic diseases of childhood¹. Early childhood caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child under the age of six².
- Pacifiers are commonly used by infants as it helps to provide comfort and relief. Pediatricians generally recommend pacifier use as it has been found to provide medical benefits, such as, preventing Sudden Infant Death Syndrome (SIDS)³.
- A strong association was found between sweetened pacifiers and rampant early childhood dental decay⁴. The early exposure of primary teeth to carbohydrates likely promotes an early colonization of *Mutans Streptococci* (MS), resulting in ECC.
- Pacifiers become contaminated by MS after their use by children and they can be a site for growth and transmission of MS in children⁵. Knowing that pacifiers are not always properly sterilized or maintained by parents, concerns arise as to whether improper care and frequent use of pacifiers can contribute to ECC development.
- There are no current well-designed studies that clearly demonstrates a strong association between pacifier use and ECC.

METHODS

- Anonymous 11-questioned voluntary survey were collected from 278 parents of 0-5 years old pediatric patients who came to BronxCare pediatric dental clinic for their comprehensive or recall exams.
- Inclusion Criteria: English and Spanish speaking parents, fully completed questionnaires
- Exclusion Criteria: Non-biological parents (including guardians, foster parents, grandparents, older siblings)
- Questionnaire assessed:
 - Demographic information of child and parent
 - Patient's history of dental caries
 - Patient's history of pacifier use and its factors including duration, sterilization, use of sweet substance, and utilization to sleep
 - Frequency of sugar consumption
- Chi-square testing was performed, and the significance level was set at $p=0.05$.

RESULTS

- Total of 278 parents of pediatric patients completed survey questionnaires.
- Demographics
 - Average age of child: 4.1
 - Average age of parent: 28.5
 - 58.3% of responders were Hispanics
- 63.3% of pediatric patients had one or more dental caries.
- 65.8% of pediatric patients used pacifiers (or still in use).
- 59% of children who used pacifiers had caries (Figure 1). 85% of children who did not use pacifiers had caries (Figures 2).
- Majority of children (75%) had pacifier duration >5 hours per day.
- Among the group with pacifier use (N=183), 89.6% of children had frequent sugar consumption, 6.0% used sweet substance with pacifiers, 66.1% used pacifiers to sleep, and 80.1% used sterile pacifiers (Tables 1,2).
- No statistical significance was found between pacifier use and early childhood caries ($p > 0.05$).

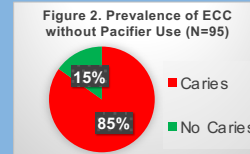
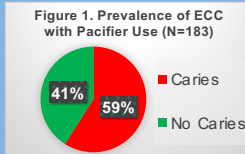


Table 1. Factors Associated with Pacifier Use (N=183)

Use of Sweet Substance with Pacifier	Percentage
Yes	6.0%
No	94.0%
Use of Pacifier to Sleep	
Yes	66.1%
No	33.9%
Daily Sterilization	
Yes	80.1%
No	19.9%

Table 2. Frequency of Sugar Consumption (N=183)

Sugar Consumption (>3x/Day)	Percentage
Yes	89.6%
No	10.4%

DISCUSSION

- Prevalence of ECC was higher in pediatric patients who did not use pacifiers (Figure 2).
- Although 80.1% parents responded they cleaned pacifiers daily, their method of disinfection is unclear.
- Confounding factors in this study may include caries risk factors such as frequent sugar consumption, poor oral hygiene, and socioeconomic status.
- Since 89.9% of children had sugar consumption more than 3 times a day, the prevalence of ECC in this population may be high regardless of the pacifier use.

CONCLUSION

There is no relationship found between the pacifier use and early childhood caries in this patient population.

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