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PREVALENCE OF NURSING BOTTLE CARIES (EARLY CHILDHOOD CARIES) AMONG PRESCHOOL CHILDREN IN PATNA BIHAR: A CROSS SECTIONAL STUDY

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ABSTRACT

Aim: The aim of this study was to determine the Prevalence of Nursing Bottle Caries among preschool children in Patna Bihar. **Methods:** A cross-sectional study was carried out on total of 507 children with age 2 years to 6 years were included. Out of 507 children 298 were males (boys) and 209 were females (girls). **Results:** Out of 507 children only 25.64% were showed Nursing Bottle Caries. **Conclusions:** There is a need for more good quality epidemiological studies in this area.

KEYWORDS: NBS/NBC; Bottle Feeding; Early childhood caries (ECC).

INTRODUCTION

The expression "dental caries" is utilized to represent the outcomes, signs, symptoms, and side effects of a localized chemical disintegration of the tooth surface (enamel and dentin) caused by dental plaque and mediated by saliva.[1] These terms are used interchangeably: "Early childhood tooth decay," "early childhood caries (ECC)," "bottle caries," "nursing caries," "baby bottle tooth decay," or "night bottle mouth.[2]" Early childhood caries (ECC) is a relatively new term that describes rampant dental caries in infants and toddlers.[3] The basic concepts of early infection with mutans streptococci and inappropriate feeding with a cariogenic diet remain important factors in the etiology of ECC, the exclusive focus of a child sleeping with a bottle containing milk or other sugar-containing substances is being explored.[4] Internationally, the prevalence of ECC has been reported to range from 6–90%, with most developed countries in the lower end, and most developing countries, in the middle to higher end of this range.[5]

MATERIALS AND METHODS

A total of 507 children were examined. Patients with age group between 2 to 6 years were included in this study. The sample consisted of 298 boys and 209 girls. Each child was examined for the presence or absence of ECC and was categorised according to the method used by Babeely et al in 1989. Briefly the category was as follows:

Score 0 (Negative)	Dentition is caries free or no labial and/or palatal caries in maxillary incisor.
Score 1 (Mild NBC/NBS)	Caries is on labial and/or palatal surface of one or more maxillary incisor only.
Score 2 (Moderate NBC/NBS)	Caries is on labial and/or palatal surface of one or more maxillary incisors and buccal palatal or occlusal surface of either or both maxillary and mandibular first molars.
Score 3 (Severe NBC/NBS)	Same score as 2 that one or more of these teeth have 3 or more surfaces with contiguous decays or complete coronal destruction.

The results obtained were processed using Microsoft Office Excel 2010® worksheet and a descriptive statistical analysis was done.

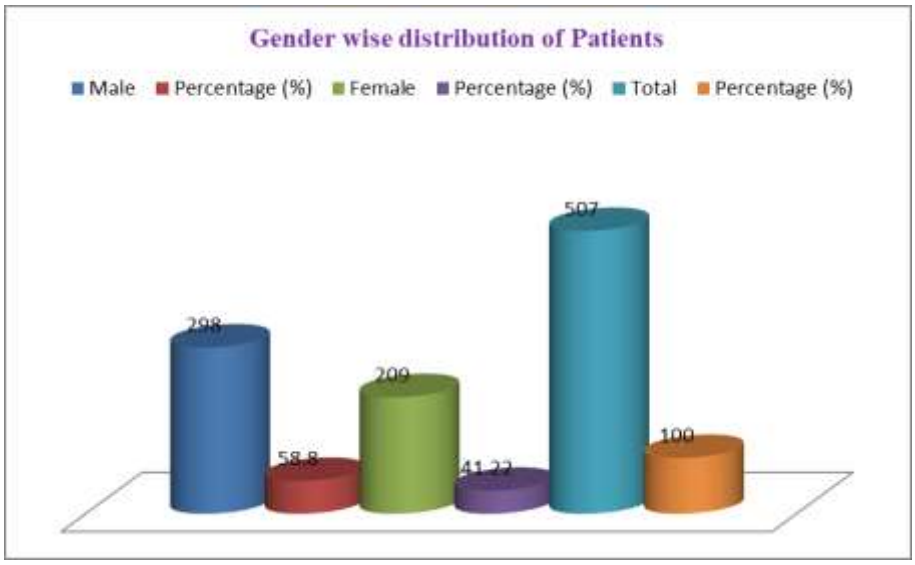
RESULTS

Out of 507 children 298 (58.8%) were boys and 209 (41.22%) were girls. (Table no. 1 and Graph no. 1) Out of 507 children 130 (25.64%) were diagnosed with NBC.

75 (14.79%) boys and 55 (10.85%) girls were diagnosed with NBC. (Table no. 2 and Graph no. 2) Out of 507 children 3 (0.59%) boys were diagnosed with NBC Score 1, 22 (4.34%) boys were diagnosed with NBC Score 2, 50 (9.86%) boys were diagnosed with NBC Score 3 and 4 (0.79%) girls were diagnosed with NBC Score 1, 15 (2.96%) girls were diagnosed with NBC Score 2, 38 (7.50%) girls were diagnosed with NBC Score 3. Out of 507 children total number of patients with NBC Score 1 was 7 (1.38%), total number of patients with NBC Score 2 was 37 (7.30%), and total number of patients with NBC Score 3 was 88 (17.36%). (Table no. 3 and Graph no. 3).

Table No. 1: Gender wise distribution of patients.

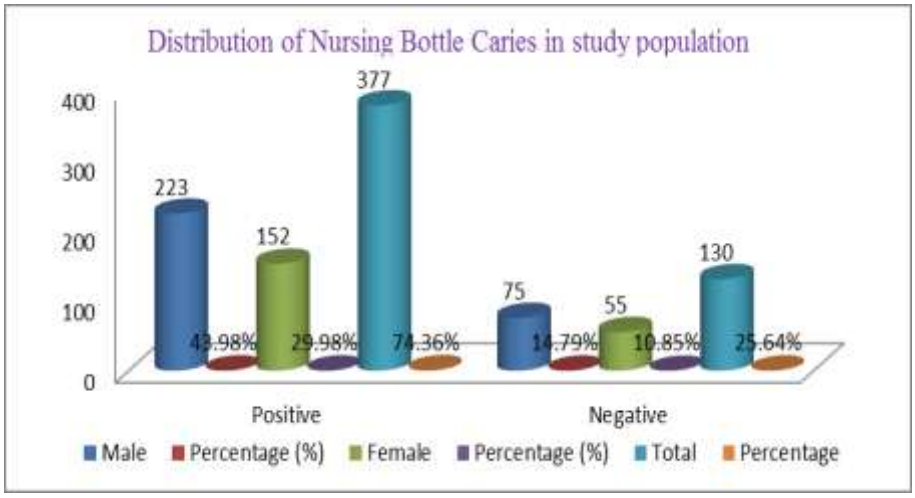
Male	Percentage (%)	Female	Percentage (%)	Total	Percentage (%)
298	58.8	209	41.22	507	100



Graph No. 1: Gender wise distribution of patients.

Table No. 2: Distribution of nursing bottle caries in study population.

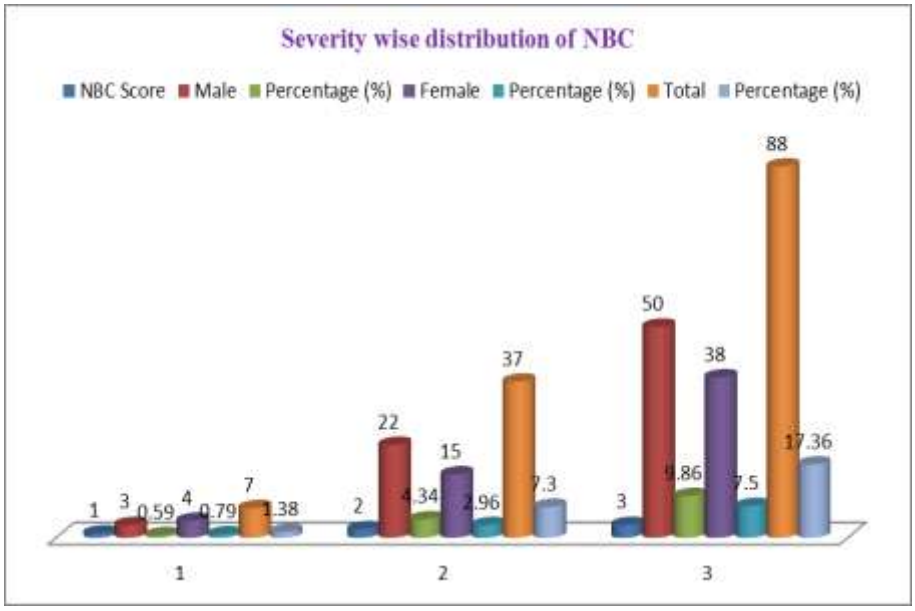
NBC	Male	Percentage (%)	Female	Percentage (%)	Total	Percentage
Negative	223	43.98%	152	29.98%	377	74.36%
Positive	75	14.79%	55	10.85%	130	25.64%



Graph No. 2: Distribution of nursing bottle caries in study population.

Table No. 3: Severity wise distribution of NBC.

NBC Score	Male	Percentage (%)	Female	Percentage (%)	Total	Percentage (%)
1	3	0.59	4	0.79	7	1.38
2	22	4.34	15	2.96	37	7.30
3	50	9.86	38	7.50	88	17.36



Graph No. 3: Severity wise distribution of NBC.

DISCUSSION

Dental caries has a multifactorial etiology. It is developed upon the presence of dental biofilm, which is responsible for mediating the demineralization of dental tissues: enamel and dentin. There is need of interaction among three factors so that caries occur: cariogenic microorganisms (Streptococcus mutans), fermentable substrate (such as saccharose) and a vulnerable host.[6] In children, habits such as the unlimited use of nursing bottles, sleep while being bottled fed (manufactured fruit juices, sweetened teas, fermented milk, milk containing fermentable carbohydrates such as farinaceous food and sugar) are associated with the development of S-ECC.[7] The prevalence of ECC in the present study was 25.64% which is similar to a study in which the prevalence of ECC in preschool children was 27.5%.[8] According to another study the prevalence of ECC was 39.9%.[9] ECC increased significantly with age. Children whose mothers had no schooling and those who belonged to low socioeconomic group showed higher caries prevalence. A significant increase in caries prevalence was found in children accustomed to the practice of on-demand breast feeding and bottle feeding at night. Caries also increased significantly when snacks were consumed between meals. However, increased frequency of tooth-brushing, parental supervision, use of a baby toothbrush, and fluoridated dentifrice significantly decreased caries prevalence.[8]

CONCLUSION

Early Childhood Caries is a public health problem. The present study shows an ECC prevalence of 25.64% among preschool children. ECC requires involvement of all medical as well as oral and maxillofacial health professionals that provide care to children. Oral health cannot be seen as separate from general health.

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