

Prevalence of Caries in School Going Children in Patna District, Bihar

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ABSTRACT

Background: Oral health attention in rural zones are often inadequate due to scarcity of dental manpower, monetary constraints, and the lack of alleged need for dental care among rural masses. India is a country known for the difference in culture with the vast diversity in region, religion, language, caste, and race. Studies have shown that in developing countries changing lifestyles and dietary patterns are increasing the incidence of caries.

Materials and Methods: The study included two hundred children from twelve different schools. They were in a age 4 to 6 years. The examination was done under natural day light using WHO criteria. The children were examined for the presence of decay, missing and filled teeth (DMFT) index was used to record primary dentition status.

Results: The prevalence of dental caries was 70.90% among males and 62.22% among females. The females had lesser DMFT scores than Males and the overall prevalence was 67%.

Conclusion: There is high prevalence of caries in this region. Thus, can be attributed to low literacy rate. Hence, dental awareness should be encouraged in this region.

Keywords: Prevalence, children, Patna.

INTRODUCTION

The antiquity of analyzing dental caries commenced in 1883 by W.D. Miller who found bacterial involvement in caries development.¹ With the passage of many decades, advancement in medical techniques have helped mankind to achieve a significant reduction in dental caries. Shafer (1993) defined dental caries as an irreversible microbial disease of the calcified tissues of the teeth, characterized by demineralization of the inorganic portion and destruction of the organic substance of the tooth, which often leads to cavitation.²

Oral health attention in rural zones are often inadequate due to scarcity of dental manpower,³ monetary constraints, and the lack of alleged need

for dental care among rural masses. Among oral ailments, the dental caries is an important dental public problem in India and is predominantly a disease of childhood.^{3,4} Discomfort due to dental caries can affect ordinary food intake and daily curriculum and sports activities in the children. Dental caries has high prevalence all around the world involving the people of all region and society.⁵ In India, only sporadic data regarding dental caries is available. Most of studies have been localized to a smaller area involving a particular community. India is a country known for the difference in culture with the vast diversity in region, religion, language, caste, and race. Studies

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have shown that in developing countries changing lifestyles and dietary patterns are increasing the incidence of caries.⁶ Epidemiological data plays a vital role in updating recent trends of the disease and treatment needs.⁷ The localized prevalence data is essential not only to understand the disease, but also plays a vital role in prevention and treatment planning. In developing countries, children have a high prevalence of dental caries affecting primary dentition than permanent dentition.^{8,9}

MATERIALS AND METHODS

The study was carried out on 200 school going children in 12 schools located in the urban areas of Patna district, Bihar, India. The literacy rate of the general population is 50.23%. Children were of age group 4-6 years of age. Age was recorded from school records. The study was approved by Ethics Committee of the concerned institution. Prior permissions and consents were obtained from school authorities, parents, and teachers.

This research work was finalized in a span of 3 month, by single examiner to reduce the inter examiner bias. The examiner underwent 1-day training program and clinical calibration exercises before screening the children. The children were examined individually in the school premises on a simple straight wooden chair using plane mouth mirrors and community periodontal index probe. The examination was done under natural day light using WHO criteria. The children were examined for the presence of decay, missing and filled teeth (dmft) index was used to record primary dentition status. DMFT index values are recorded and mean and standard deviation calculated.

RESULTS

Gender of Children Examined	Number of Children Examined	Children Affected	Caries Prevalence Percentage	Score DMFT
Male	110	78	70.90	2.92 ± 2.36
Female	90	56	62.22	2.63 ± 2.16
Total	200	134	67.00	2.78 ± 2.29

In this study, a total of 200 school children were examined of which 110 were boys and 90 were

girls. The prevalence of dental caries was 70.90% among males and 62.22% among females. The females had lesser DMFT scores than Males and the overall prevalence was 67%. The untreated caries accounted for 95.4% of the score, while filled teeth were only 5.4% and extracted teeth accounted for 4 %. The mean DMFT score for males was 2.92 and females was 2.16.

DISCUSSION

The age group of 4 to 6 years is regarded as global monitoring age group and international comparison age group for general and oral health status.^{10,11} Hence, we included the children of age group of 4 -6 years for our survey. In 1981, WHO and the foreign direct invested (FDI) World Dental Federation jointly formulated goals for oral health to be achieved by the year 2000 A.D as 50% of 5-6 years old to be free of dental caries.⁴ In Patna district, the prevalence of caries is 71.6%, which is very far from goal set by FDI and WHO. This findings of girls having lower DMFT was similar to Mittal et al.¹² and Mahesh Kumar et al.¹³ studies and contradiction to Mishra and Shee¹⁴ Mwakatobe and Mumghamba¹⁵ and Shingare et al.¹⁶ According to National Oral Health Survey India caries prevalence among 5 years age children was 51.9%.

The research accomplishes that dental caries incidence in Patna district school going children of age 4-6 years is suggestively high. This can be attribute to very low literacy rate in this region. This could be due to negligence or lack of consciousness about the reputation of primary teeth. From this study, we may also conclude that there may correlation between overall literacy rate and oral health care knowledge in this population. The increase in caries would be due to lack of dental awareness, improper brushing techniques, improper dietary habits, ignorance, lack of motivation and severe lack of dental institutions in this region. This paper is substantial in establishing the data for rural areas in a county where over 72% of Indian population lives in a rural area. We recommend to create dental awareness by increasing school dental health programs in this region. Awareness to the public may be increased by using audio-visual communications such as radio, televisions, magazines, and public notices. Parents and teachers must be encouraging to

bestow sufficient time for dental health education programs and diet counseling.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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