



A STUDY TO ASSESS THE ORAL CARE PRACTICE AND INCIDENCE OF DENTAL CARRIES AMONG CHILDREN IN SELECTED URBAN AREA OF NEW DELHI

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Abstract : A descriptive study was conducted to assess the oral care practice and incidence of dental caries among school going children in selected urban areas of New Delhi. It was conducted for the partial fulfilment of the requirement for the degree of B.sc Nursing 4th year at Holy Family College of Nursing, New Delhi in the year 2024. The objectives of the study were to assess the oral care practice and incidence of dental caries, to assess the risk factors for dental caries and to assess the association between oral care practice with selected demographic variables among children regarding dental caries in selected urban area of New Delhi. The research approach adopted for the study was Quantitative non – experimental approach. The convenient sampling was used to collect data from 100 children aged 3 to 10 years. The tools developed and used for data collection were structured observation checklist and structured questionnaire to obtain data as per objective. These tools were evaluated by seven experts. After obtaining the ethical clearance from the Medical Superintendent of Holy Family Hospital and formal permission to conduct study was obtained from the Principal of Holy Family College of Nursing. A total of 100 children were selected for the study. The purpose of study was explained to the mothers and their consent was taken. A validated structured observation checklist was used to assess the dental care practice and assess the incidence of dental caries by the researcher. Following the completion of the observation, a brushing kit including a toothbrush and toothpaste was provided to the participants. The data was organized, analysed and interpreted based on the objectives of the study. Descriptive statistics and inferential statistics were used for analysis. The study findings indicated that among the study subjects 57% were having fair practice and 37% were having good practice. The incidence of dental caries came out to be 33%. The analysis and reference to risk factors regarding dental caries suggest that no child was at severe risk for dental caries. Among the study subjects 88% were at mild risk while 12% were at moderate risk. Hence, the study concluded that many children had dental caries. Children with dental caries were further referred to Holy Family Hospital dental clinic.

Index Terms - – Incidence, Dental Caries, Oral care

I. INTRODUCTION

Oral health is the state of the mouth, teeth and Oro-facial structures that enables individuals to perform essential functions such as eating, breathing and speaking, and encompasses psychosocial dimensions such as self-confidence, well-being and the ability to socialize and work without pain, discomfort and embarrassment.

The WHO Global Oral Health Status Report (2022) estimated that oral diseases affect close to 3.5 billion people worldwide, with 3 out of 4 people affected living in middle-income countries. Globally, an estimated 2 billion people suffer from caries of permanent teeth and 514 million children suffer from caries of primary teeth.

Taking into account the oral health situation in the country, Government of India has initiated a National Oral Health Programme to provide integrated, comprehensive oral health care in the existing health care facilities with the following objectives: to improve the determinants of oral health, to reduce morbidity from oral diseases, to integrate oral health promotion and preventive services with general health care system, to encourage Promotion of Public Private Partnerships (PPP) model for achieving better oral health.

Dental caries is a major public health problem of the world. It is highly prevalent and has a negative impact on children's quality of life. It is estimated that nearly 3.5 billion people are affected by oral disease in the world. Approximately 2.4 billion or 36% of the world population have dental caries in their permanent teeth. More than 530 million of children lose their primary teeth due to dental caries. Due to lack of health education and insufficient preventive measures, there is a high prevalence of morbidity that highly affects the health status of children. Untreated dental caries can cause pain and difficulties in eating and sleeping, pain, which in turn leads to emergency dental visit, hospitalization, need for invasive treatment, and systemic health problem thereby lowering the quality of life.

Annually, 30,570 dentists are produced in India; however, only 10% of dentists serve the rural people. With a poor dentist to population ratios in some areas, the chances of dental caries going undiagnosed are highly likely, contributing the regional disparity in dental caries prevalence rates. Hence a true prevalence rate needs to be elucidated in order to address the growing concern of dental caries. As per the WHO latest data collection conducted via the Global Health Observatory the prevalence of untreated caries in deciduous teeth in children aged 1-9 years old is 43.33% and the prevalence of untreated caries in permanent teeth in people aged 5 and above rated about 28.8%.

RESEARCH METHODOLOGY

The methodology section outlines the plan and method that how the study is conducted. This includes Universe of the study, sample of the study, Data and Sources of Data, study's variables and analytical framework. The details are as follows;

3.1 Population and Sample

The population is school going children and their mothers in selected urban area of New Delhi. The samples were the selected school going children between 3-10 years of age and their mothers in selected urban area of New Delhi.

3.2 Data and Sources of Data

The data was collected from 22nd January to 24th January 2024. Ethical permission from the ethical committee of Holy Family Hospital was obtained and a formal written letter from the principal of Holy Family College of Nursing was obtained to conduct the study. During data collection, in urban area of Aaligaon, the researchers visited different families. They first introduced themselves and explained them the purpose and importance of the study. They confirmed their willingness to participate in the study by taking written consent from the samples. Based on the criteria for selection of samples, a total of 100 samples were selected and data was collected from them. The samples were assured about the confidentiality of the data collected.

The data was collected with the help of the developed tool which was divided in 4 sections. In section A, data related to the sociodemographic profile of the child was collected from the mothers. For section B, the children were provided with a dental kit (including a toothbrush and toothpaste) and they were asked to demonstrate the steps they follow while brushing their teeth. Next section assessed the incidence of dental caries among children which was done using a torch.

3.4 Statistical tools and econometric models

This section elaborates the proper statistical models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

3.4.1 Descriptive Statistics

Descriptive statistics was used for the analysis of data, which included item wise analysis using frequency and percentage distribution.

The following plan was developed:

- Frequency and percentage distribution for demographic data
- Frequency and percentage distribution for oral practice regarding dental caries
- Frequency and percentage distribution for incidence of dental caries
- Frequency and percentage distribution for risk factors regarding dental caries

IV. RESULTS AND DISCUSSION

4.1 Frequency and percentage distribution of oral care practice regarding dental caries

Table 4.1: Frequency and percentage distribution of oral care practice regarding dental caries

n=100

Criteria	Frequency	Percentage	Mean	Standard deviation
Poor practice	6	6%	10.21	2.779
Fair practice	57	57%		
Good practice	37	37%		

Table 4.1 and Fig 1 illustrates the distribution of oral care practice regarding dental caries among 100 school going children. In this study 1 child did not practice oral hygiene. Among the study subjects, a considerable variety of respondents, 57 (57%) were having fair practice and 37 (37%) were having good practice, on the contrary, 6 (6%) were having poor practice. Column 6 in table 4.1 shows jarque bera test which is used to check the normality of data. The hypotheses of the normal distribution are given;

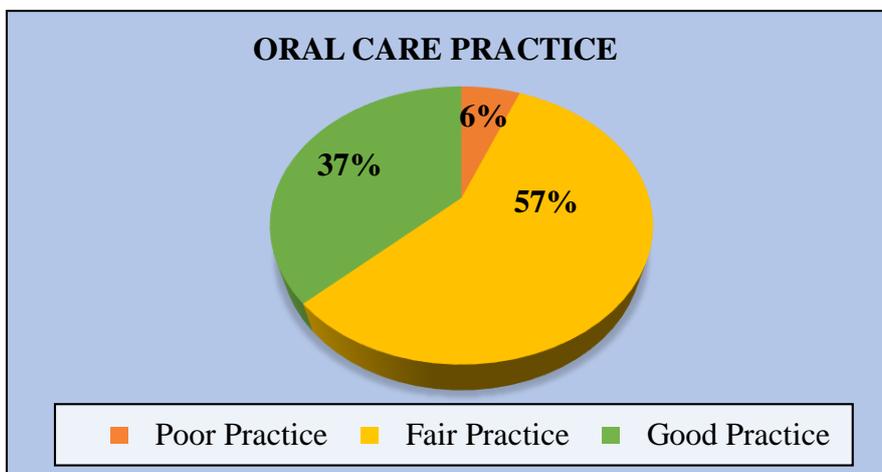


Fig 1: A Pie chart showing percentage distribution of oral care practice regarding dental caries

4.2 Frequency and percentage distribution of dental caries among children in selected urban area

Table 4.2: Frequency and percentage distribution of dental caries among children in selected urban area n=100

Incidence criteria	Frequency	Percentage	Mean	Standard deviation
Absent (score is ≤ 4)	67	67%	1.95	2.555
Present (score is ≥ 5)	33	33%		

Table 4.2 and Fig 2 illustrates the distribution of incident cases for dental caries. 33 out of 100 samples had a score of 5 or more, i.e., they had dental caries. 67 out of 100 children had a score of 4 or less i.e., they did not have dental caries.

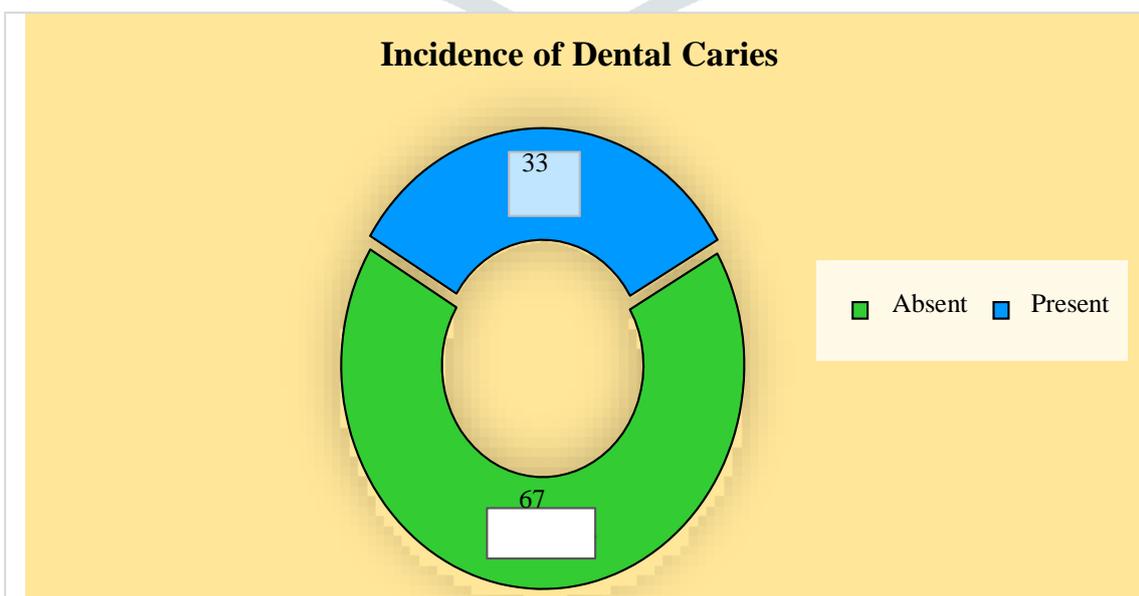


Fig 2: A donut diagram showing the incidence of dental caries in the selected area

4.3 Frequency and percentage distribution of risk factors regarding dental caries

Table 4.3: Frequency and percentage distribution of risk factors regarding dental caries

n=100

CRITERIA	FREQUENCY	PERCENTAGE	MEAN	STANDARD DEVIATION
MILD RISK	88	88%	4.63	2.592
MODERATE RISK	12	12%		
SEVERE RISK	0	0%		

Table 4.3 Illustrates the distribution of risk factors regarding dental caries among 100 school going children. In this study, 88% were at mild risk while 12% were at moderaterisk. On the contrary, no child was at severe risk for dental caries.

4.4 Findings related to association of practice on oral hygiene with different age group

Table 4.4: Findings related to association of practice on oral hygiene with different age group

n=100

Category	Poor (f)	Fair(f)	Good(f)	Chi-Square	P value	Association
3 – 5 years	5	25	5	4.769	0.3118	NS
5 – 8 years	8	21	5			
8 – 10 years	3	19	9			

Table 4.4 illustrates that on applying Chi-Square distribution test “p” value for oral carepractice with the different age groups was computed. In all cases where $p < 0.05$, it was found that there is no significant association between oral care practice with different age groups.

II. ACKNOWLEDGMENT

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