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RESEARCH ARTICLE

ASSESS THE INCIDENCE OF DENTAL CARIES AMONG PEDIATRIC POPULATION IN DENTAL OUTPATIENT DEPARTMENT AT GOVERNMENT RAJAJI HOSPITAL, MADURAI

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Abstract

Title: Assess the incidence of Dental caries among Pediatric Population in Dental Outpatient Department at Government Rajaji Hospital, Madurai.

Objectives: To assess the incidence of Dental caries among Pediatric Population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai. To associate the incidence of Dental caries among Pediatric Population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai with their selected baseline variables.

Hypotheses: H₁: There is a statistically significant difference in the incidence of Dental caries between male and female Pediatric population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai.

H₂: There is a statistically significant association between the Dental caries among Pediatric Population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai with their selected baseline variables.

Methodology: Non experimental research design was used. 150 subjects selected by Non probability sampling technique.

Results: The study reveals that the majority of the subjects 118 (78.67%) were had Class I dental caries, 103 (68.67%) were had Class II dental caries, 31 (20.66%) were had Class III dental caries and none of them had Class IV, Class V and Class VI dental caries.

Conclusion: Children are more prone to get Class I, Class II and Class III dental caries and majority of them were male children.

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Introduction:-

Healthy children are the greatest resources, pride of nation. Investment in child's development is an investment in the future of the nation. Health is a complex phenomenon, the period of growth and development extent throughout the life cycle. However the period in which the principle changes occur is from conception to the end of adolescents.

Oral health is related to diet in several ways, for example, nutritional influences on cranio-facial development and salivary glands, oral cancer and oral infectious diseases. Diet plays an important role in dental caries, a major cause of tooth loss. Under nutrition, coupled with a high intake of sugars, may exacerbate caries.

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Dental caries occurs due to demineralization of enamel and dentine (the hard tissues of the teeth) by organic acids formed by bacteria in dental plaque. Tooth decay in children is painful, just as it is in adults. Unless arrested in its early stages, dental decay becomes irreversible. Without appropriate treatment, tooth decay will lead to infection of the teeth, gums and tooth loss. The unaesthetic nature of untreated dental decay compromises the child's self-esteem and social development. Untreated dental disease compromises the child's ability to eat well, sleep well, and function well at home and at school.

Nutritional deficiencies in a growing child may have lifelong impacts on neural development and somatic growth. Normal growth and development may also be delayed due to pain and sleep disturbances. In addition, caries in the primary dentition has been indicated as a risk factor for future dental caries in the primary and permanent dentition.

Need For The Study:

Early diagnosis of approximal enamel lesions is important as the majority of lesions in the outer half of enamel will take at least two years to progress into dentine and progression is not inevitable. With intervention, lesion progression can be slowed, arrested or even reversed.

Screening for dental caries and risk for caries in young children prior to school entry could identify caries at an earlier and reversible stage and lead to interventions to treat existing caries, prevent progression of caries and reduce incidence of future lesions.

Failure to identify and prevent dental disease has consequential and costly long-term adverse effects. Through early detection, proper counselling and the involvement of health professionals and caregivers, the consequences of this disease can be minimized and hopefully, in future, completely eliminated.

Objectives:-

1. To assess the incidence of Dental caries among Pediatric population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai.
2. To associate the incidence of Dental caries among Pediatric population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai with their selected baseline variables.

Hypotheses:

H₁: There is a statistically significant difference in the incidence of Dental caries between male and female Pediatric population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai.

H₂: There is a statistically significant association between the incidence of Dental caries among Pediatric population in Dental (Outpatient) Department at Government Rajaji Hospital, Madurai with their selected baseline variables.

Review of literature in the study is organized under the following heading.

Literature related to incidence of Dental Caries among Pediatric population

Research Methodology:-

The conceptual model of this study was based on Modified Hildegard Peplau Theory of Interpersonal Relations 1952. This model helped the researcher to identify the pediatric population with Dental caries. The study was conducted using Non experimental (Descriptive) research design. After testing the validity and reliability of the tool, pilot study was conducted on 15 non study subjects in Dental (Outpatient) department at Government Rajaji Hospital, Madurai to find out the feasibility and practicability. The main study was started from 18.03.2019 to 12.04.2019. 150 samples were selected using Non probability (Consecutive) sampling technique at Dental (Outpatient) department, Government Rajaji Hospital, Madurai. Data gathered and analyzed by using both descriptive and inferential statistics.

The research tool consists of two sections

Section I: Baseline variables

Section II: G.V. Black Caries Classification (Class I to VI)

Ethical consideration:

This study was conducted after getting approval from the Ethical Committee of Madurai Medical College, Madurai – 20. All respondents were carefully informed about the purpose of the study and their part during the study and how the privacy will be guarded. Confidentiality was ensured. Verbal and Written consent was obtained from all participants.

Data collection procedure:

The data collection was done in Dental Outpatient Department at Government Rajaji Hospital, Madurai. Prior to data collection ethical clearance was obtained from Ethical Committee of Madurai Medical College, The Director of Institute of Child Health and Research Centre and from the Head of Department of Dental Surgery, Government Rajaji Hospital, Madurai to conduct the main study. Rapport was established with the patients and their parents. The brief introduction about the study was explained. Both oral and written consent was obtained from all the study participants after fully explaining the purpose of the study. Data was collected from 18.03.2019 to 12.04.2019 in Dental Outpatient Department, Government Rajaji Hospital, Madurai. The questionnaire was administered by the researcher and the sample procedure was followed until the fulfillment of required samples.

Results:-

Table -1:- Frequency and percentage distribution of Pediatric population according to their selected baseline variables (n=150).

Baseline variables		F	%
Age	a) 2-4 years	14	9.33%
	b) 5-7 years	49	32.67%
	c) 8-10 years	64	42.67%
	d) 11-13 years	23	15.33%
Gender	a) Male	118	78.67%
	b) Female	32	21.33%
Place of Residence	a) Rural	65	43.33%
	b) Urban	67	44.67%
	c) Sub urban	18	12.00%
Type of Diet	a) Vegetarian	2	1.33%
	b) Mixed diet	148	98.67%
Father's Educational status	a) No formal education	16	10.67%
	b) Primary education	88	58.67%
	c) Higher secondary education	26	17.33%
	d) Graduate	20	13.33%
Mother's Educational status	a) No formal education	36	24.00%
	b) Primary education	80	53.33%
	c) Higher secondary education	24	16.00%
	d) Graduate	10	6.67%
Father's Occupation	a) Professional	13	8.67%
	b) Unskilled worker	97	64.67%
	c) Clerical/ shop keeper/ farmer	40	26.66%
	d) Unemployed	0	0.00%
Mother's Occupation	a) Professional	10	6.67%
	b) Unskilled worker	45	30.00%
	c) Clerical/ shop keeper/ farmer	38	25.33%
	d) Unemployed	57	38.00%
Family monthly income	a) < Rs.5000	4	2.67%
	b) Rs. 5001- Rs.10,000	57	38.00%
	c) Rs.10,001- Rs.15,000	85	56.66%
	d) > Rs.15,000	4	2.67%

Type of family	a) Nuclear family	120	80.00%
	b) Joint family	26	17.33%
	c) Extended family	4	2.67%
Source of drinking water	a) Public water supply	138	92.00%
	b) Mineral (can) water	12	8.00%
	c) Community well or pond	0	0.00%
	d) Underground water	0	0.00%
Frequency of taking Carbonated drinks	a) None	28	18.67%
	b) 1-2 times/ week	64	42.66%
	c) 3-5 times/ week	45	30.00%
	d) > 5 times/ week	13	8.67%
Frequency of Candy intake	a) ≤ 1 candy/ day	22	14.67%
	b) 2-3 candies / day	32	21.33%
	c) 3 candies/ day	85	56.67%
	d) None	11	7.33%
Habit of taking beverages or candies before sleep	a) Yes	52	34.67%
	b) No	98	65.33%
Oral hygiene maintained by using	a) Toothpaste	129	86.00%
	b) Tooth powder	21	14.00%
	c) Ash/ brick powder	0	0.00%
	d) Neem stick/Banyan stick	0	0.00%
How many times child brushes teeth?	a) Once a day (Morning)	137	91.33%
	b) Twice a day(Morning-Night)	13	8.67%
	c) More than Two times a day	0	0.00%
Habit of mouth washing after feeds	a) Yes	21	14.00%
	b) No	129	86.00%
Method of cleaning	a) Finger	38	25.33%
	b) Tooth brush	112	74.67%
	c) Neem/Banyan stick	0	0.00%

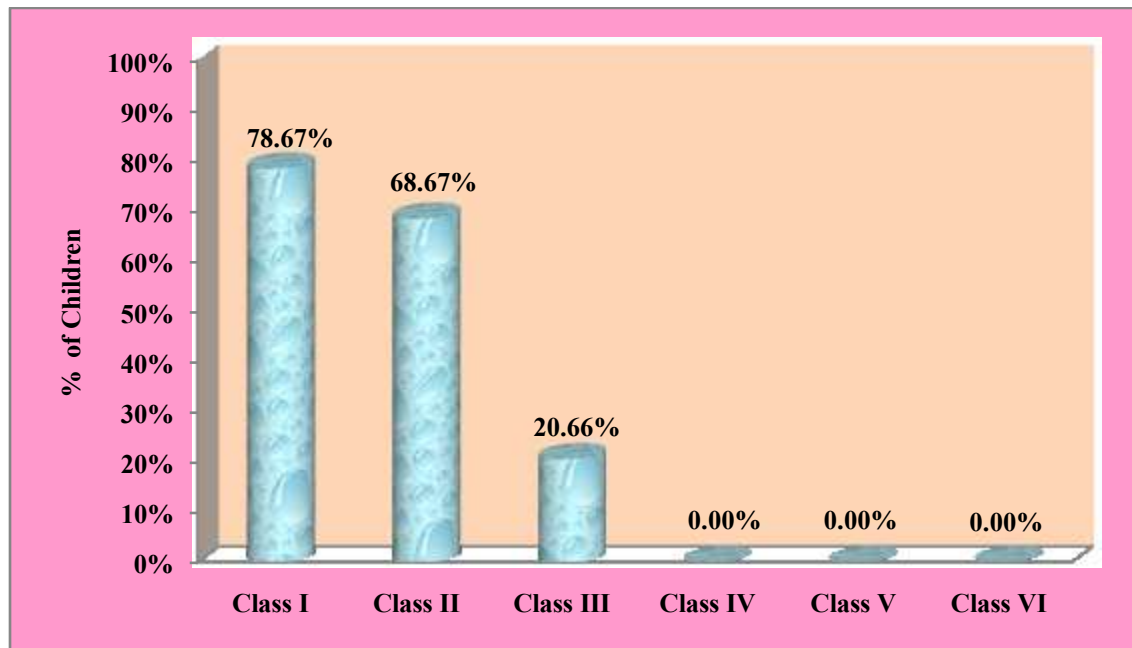


Figure 1:- Portrays the incidence of dental caries among pediatric population.

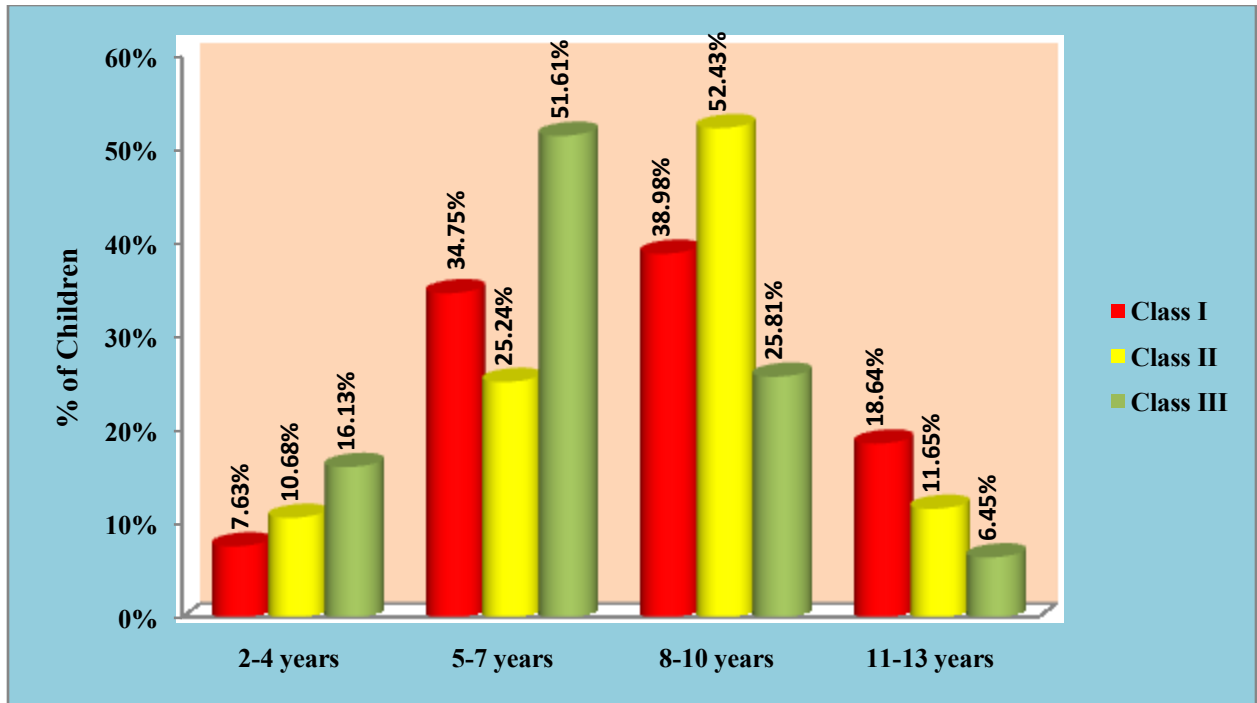


Figure 2:- Portrays the association between the incidence of dental caries with their age.

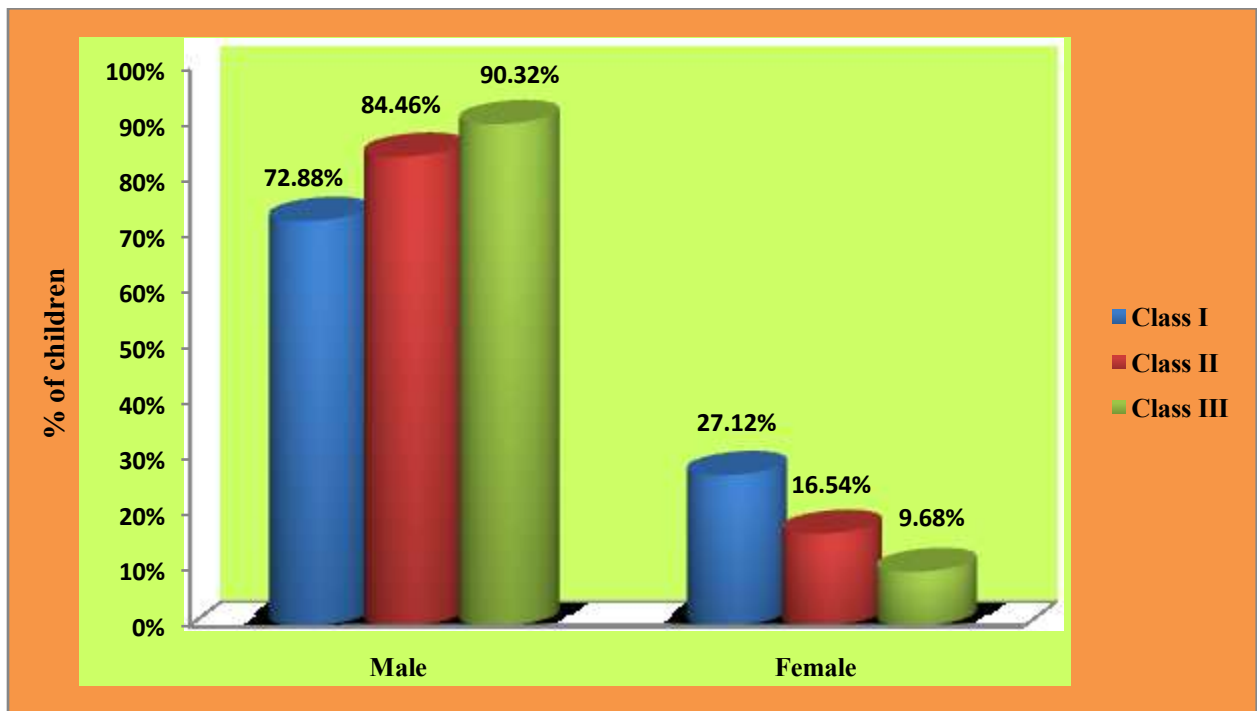


Figure 3:- Portrays the association between the incidence of dental caries with their gender.

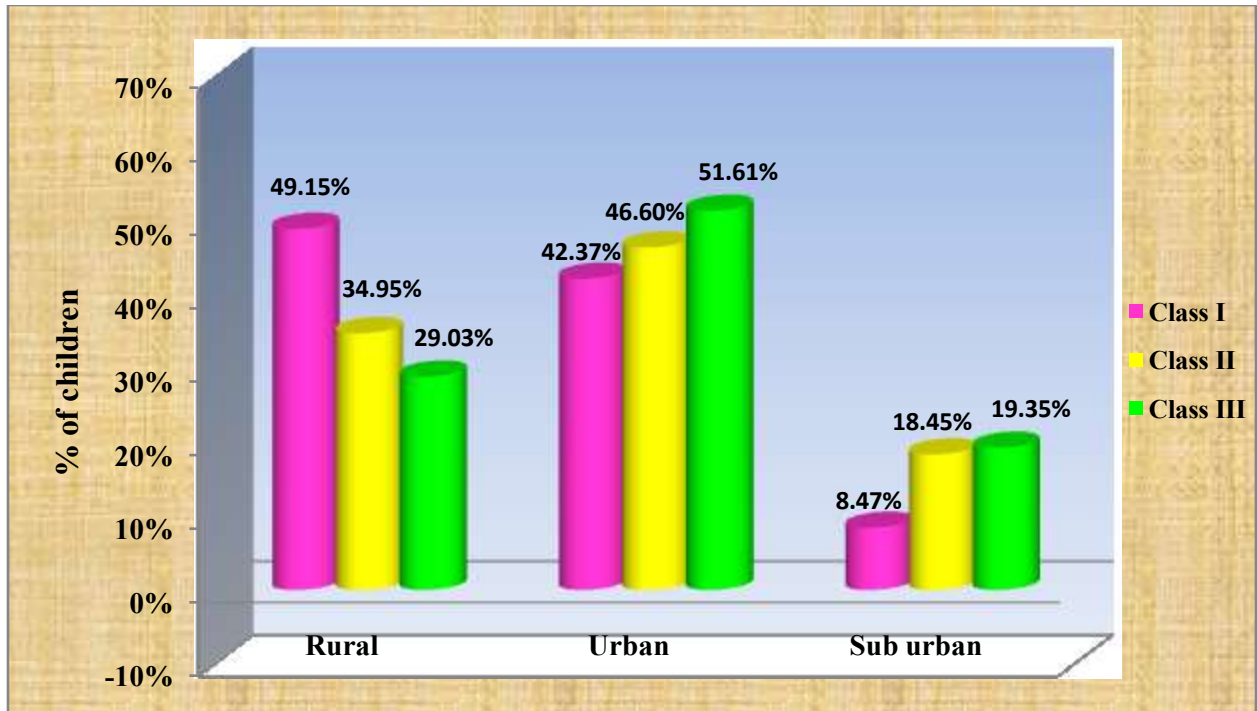


Figure 4:- Portrays the association between the incidence of dental caries with their place of residence.

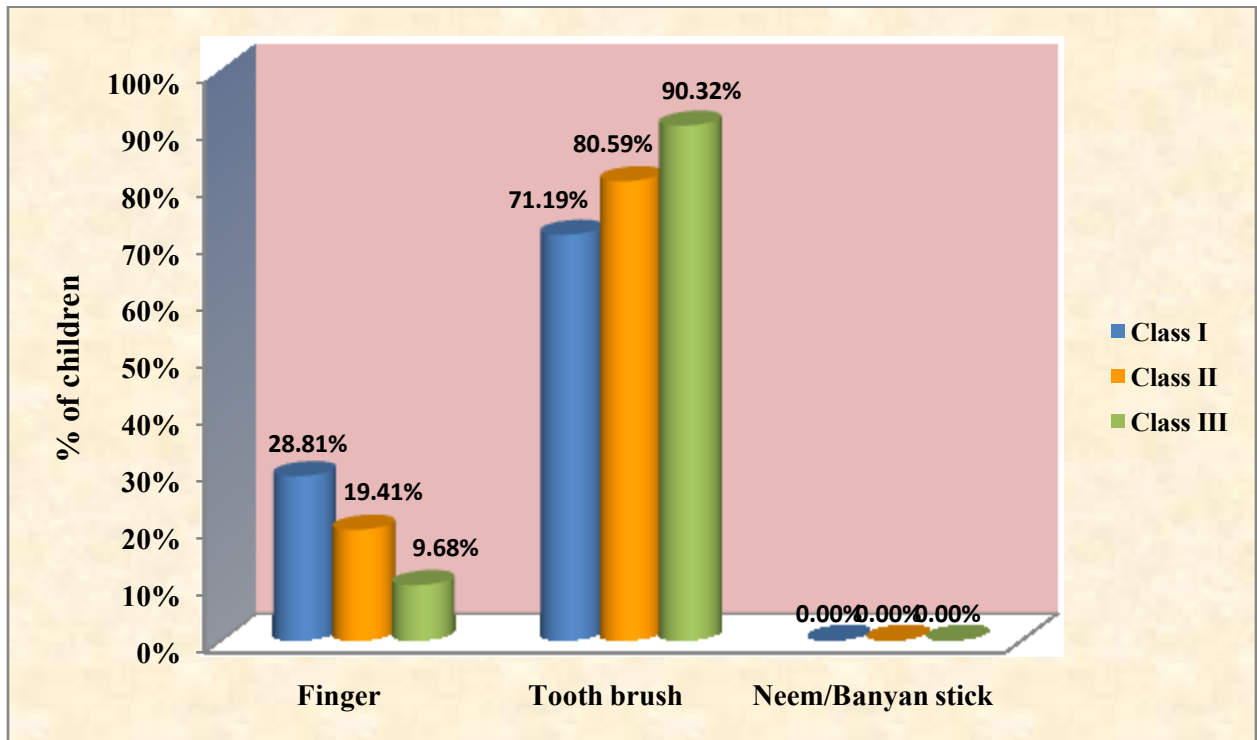


Figure 5:- Portrays the association between the incidence- of dental caries with their method of cleaning.

Discussion:-

The aim of the study was to assess the incidence of dental caries among Pediatric Population in Dental Outpatient Department at Government Rajaji Hospital, Madurai.

The present study revealed that majority of the subjects 118 (78.67%) were had Class I dental caries, 103 (68.67%) were had Class II dental caries, 31 (20.66%) were had Class III dental caries and none of them had Class IV, Class V and Class VI dental caries.

Summary:

The major findings of the study are summarized as below,

The distribution of socio demographic and clinical variables of the study subjects showed that, 64 (42.67%) were between 8-10 years, 118 (78.67%) were males, 67 (44.67%) were hailed from urban area, 148 (98.67%) were mixed diet, 88 (58.67%) fathers were studied up to primary education, 80 (53.33%) mothers were studied up to primary education, 97 (64.67%) fathers were unskilled workers, 57 (38%) mothers were unemployeed, 85 (56.66%) were earned between Rs. 10,001- 15,000, 120 (80%) were from nuclear family, 138 (92%) were get public water supply, 64 (42.66%) were had carbonated drinks between 1-2 times/week, 85 (56.67%) were had candy intake more than 3 candies/ day, 98 (65.33%) were not practiced habit of taking beverages or candy before sleep, 129 (86%) had used toothpaste, 137 (91.33%) had brushed once a day, 129 (86%) were not practiced the habit of mouth washing after feeds and 112 (74.67%) were used tooth brush.

The present study revealed that, 118 (78.67%) were had Class I dental caries.

The study results also showed that there is a statistically significant association between the incidence of dental caries and age, gender, place of residence and method of cleaning.

Conclusion:-

The study findings evidence that majority of the subjects who get dental caries were male children and majority of them get Class I dental caries followed by Class II dental caries.

Implications Of The Study:

Nursing practice

1. This study finding will create awareness among the nurses about the incidence of dental caries among pediatric clients.
2. The nurses can learn and use various tool like caries risk assessment tool to assess the dental caries among pediatric population.
3. The nurses can gain the knowledge regarding various dental problems and cause of dental problems among pediatric clients.
4. The nurses will practice infection control measures to prevent dental problem among children.

Nursing education

1. The nurse educator creates the awareness to the students about the problems faced by the children with dental problems in various domains such as physical, psychological and social.
2. The nurse educators plan and conduct group discussion among nursing students to discuss various dental problems and its causes.
3. Nursing faculties can educate the nursing students and motivate the students to prepare and educate dental caries to children and their parents.

Nursing research

1. The study findings will encourage further research studies to assess the incidence of dental caries in and around Madurai city.
2. Nurse researchers develop new tools for dental caries specify to particular domain such as physical, psychological and social among pediatric population.
3. The nurse researcher able to identify various areas of research in the field of dental nursing.

Nursing Administration

1. Administrator can encourage the nurses to identify the dental caries in an early stage among pediatric clients.
2. Nursing administration can arrange in service education or staff development programme especially for creation the awareness on problem and management of dental caries among children.

3. Nurse administrators should motivate the nurses to identify the symptoms of dental caries by using questionnaire like General Health Questionnaire.

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